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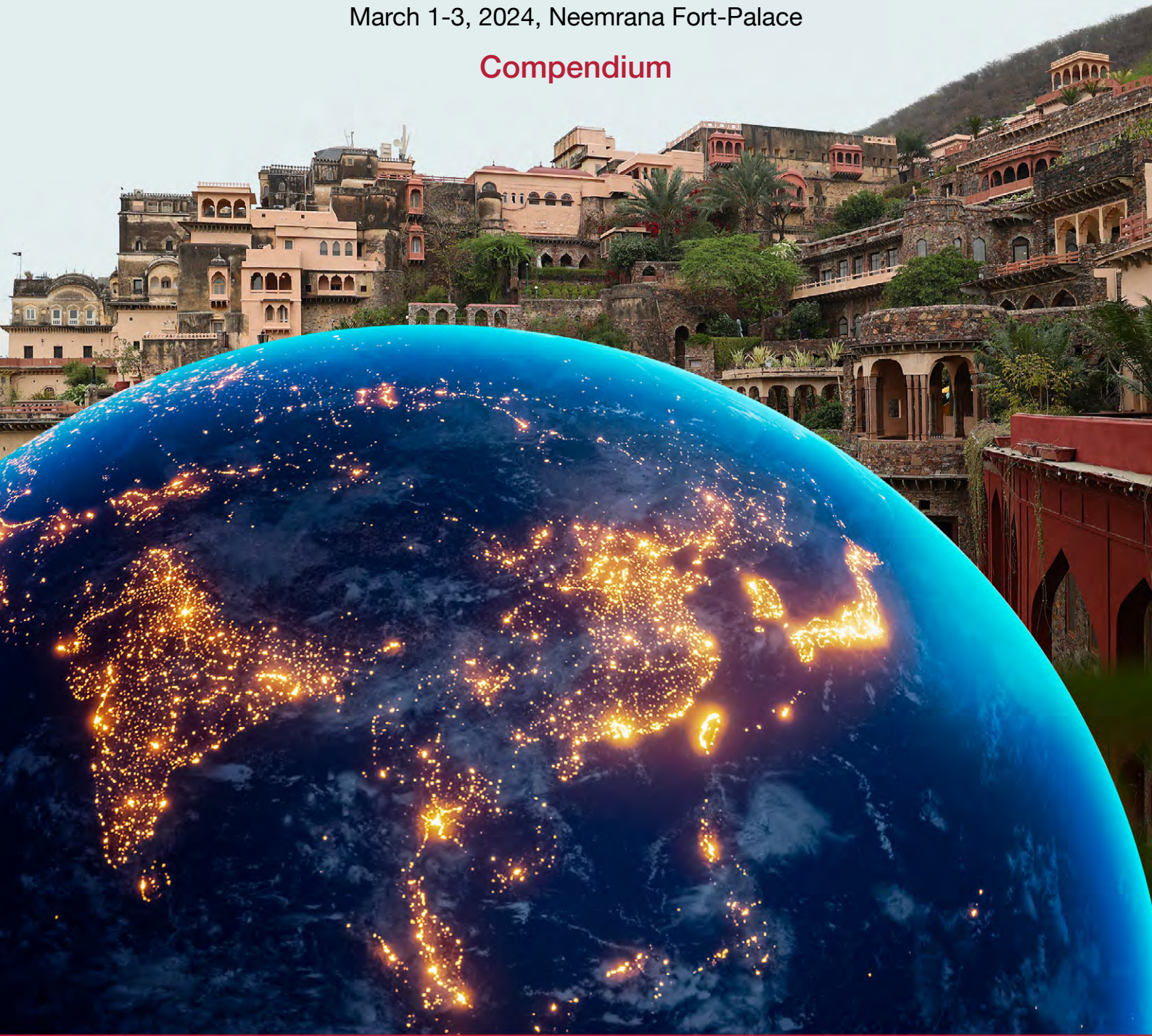
INDIA IN ASIA

DEEPER ENGAGEMENT

New Industrial Policies: Asian Perspectives

March 1-3, 2024, Neemrana Fort-Palace

Compendium



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प्रधान मंत्री

Prime Minister

MESSAGE

It is heartening to learn about the second conference on 'India in Asia: Deeper engagement' organised by Centre for Social and Economic Progress (CSEP). Greetings and best wishes to the organisers and participants on the occasion.

The theme of the conference – "New Industrial Policies: Asian perspectives" is a timely and thoughtful one.

The ancient traditions of dialogue and debate among Asian nations hold immense potential to provide solutions to numerous challenges. Bound by common cultures, traditions and values, Asian countries face similar challenges. Through cooperation, we can help provide common solutions to these challenges that will shape this century, making it Asia's own.

Today, India stands among the world's fastest expanding major economies. Transitioning from the 10th to the 5th largest economy in under a decade, it showcases remarkable growth, not only in terms of size, but also in pace. International financial institutions see it as a beacon of strength within the global economy.

Rooted in the spirit of 'Vasudhaiva Kutumbakam' (the whole world as one family) India is always willing and ready to extend all possible cooperation with other Asian nations. At the same time, we are keen to learn from others as well. Cooperation between India and other Asian nations will surely yield positive dividends for the entire region.

Industries are the lifeline of a nation's economy and it is for this reason that decisions are being taken and policies being formulated, keeping in view the limitless possibilities in this sector. The entrepreneurial spirit and skills of India's youth, coupled with the momentum that industries impart, strengthen Asia's socio-economic fabric.

Recent policy changes and reform initiatives have transformed our industrial sector, making the environment ripe for comprehensive growth. Across sectors – be it IT, space, pharma, or technology, India has taken many giant strides. Through innovation and an entrepreneurial spirit, we have taken firm steps towards making India a manufacturing hub.

The participation of academics, influencers, and policymakers at this conference will promote deeper research and intellectual connections. The deliberations will help in the application of experiences and lessons from best industrial practices being adopted across Asia. The policy interventions and divergent perspectives will enrich the discussions, bringing people and nations closer.

Best wishes for success of the conference.

(Narendra Modi)

New Delhi

फाल्गुन 07, शक संवत् 1945

26th February, 2024

PRESIDENT
REPUBLIC OF SINGAPORE

29 February 2024

Mr Rakesh Mohan
President Emeritus and Distinguished Fellow
Centre for Social and Economic Progress

Dear Rakesh,

Congratulations to the Centre for Social and Economic Progress (CSEP) for organising the second edition of the *India in Asia: Deeper Engagement* conference.

I am pleased to note that you are co-chairing this year's conference with Prof Danny Quah, Dean of the Lee Kuan Yew School of Public Policy. This partnership will I am sure enhance the conference's potential in building stronger intellectual and policy exchanges between India, Southeast Asia, and the broader Asian region. The importance of these exchanges will only grow as we enter a world of greater geopolitical contestation.

The theme for this year's conference, "New Industrial Policies", is well chosen, and I am pleased to share my perspectives in the attached message.

I thank the CSEP once again for inviting me to deliver this message, and I wish you a productive and enriching conference.

Yours sincerely

Tharman Shanmugaratnam

MESSAGE FROM THARMAN SHANMUGARATNAM, PRESIDENT, REPUBLIC OF SINGAPORE, FOR THE 'INDIA IN ASIA: DEEPER ENGAGEMENT' CONFERENCE 2024

Thank you for inviting me to contribute to the *India in Asia: Deeper Engagement Conference* once again, although in a different capacity.

I commend the organisers for your choice of theme for this year's conference – "New Industrial Policies", and in particular the implications of the shift towards more interventionist economic policies in the major economies.

The shift is taking place largely by way of drift, and tit-for-tat actions, rather than a resetting informed by new economic thinking, powerful new evidence, or a cogent reappraisal of the economics of prosperity.

But the new interventionism is nevertheless creating a new global reality – an unstable competition of industrial subsidies and a shifting but uncertain geometry of trade and investments. It is both reacting, and contributing, to the weakening of global economic order.

We have to likewise respond to this new reality in Asia, but also seek to shape it. Asia's regions do have agency – particularly if we act in broad coordination with each other.

We can and must use this agency wisely. I believe we can do so:

- By thinking long-term, rather than responding to either the geopolitics or domestic mood of the moment.
- By resisting further economic fragmentation, which will ultimately hurt every nation.
- By investing more actively in inclusivity and growing human potential – both within our own societies, and globally, by unlocking growth in the developing world.
- By collaborating to halt the deterioration in the planet's ecology. And doing so by pivoting towards sustainable growth strategies in both developing and advanced economies.

I believe these strategic orientations, pursued with vigour, give us the best chance of securing both our national and collective interests, and shared prosperity.

I found the Issues Notes for each of your sessions, curated by eminent scholars, to be thoughtful and constructive. Allow me to add three broad observations, in the hope that they are helpful in the course of your discussions.

First, we have to remind ourselves that innovation remains the fundamental driver of long-term growth. It is also why industrial policies should be focused on upgrading our capabilities, rather than crowding out other countries. It is the difference between spurring innovation through a competition of capabilities, and stifling innovation.

- Efforts to promote national economic performance by developing our capabilities – through both economy-wide policies such as investment in basic R&D and education, or cluster-based strategies to develop deep applied strengths and synergies between firms – cannot go far wrong.

- Economic performance can also be aided by adopting and adapting the best technologies and innovations, regardless of where they come from. In practice, they can and often do go hand in hand with national capabilities.

A second observation. For industrial policy to succeed, we need social policy enacted on an industrial scale. To develop every human talent, to deepen and upgrade skills continually, and to advance social mobility. It cannot be left to the social marketplace. It requires new forms of collaboration, between the public sector, enterprises, unions and community organisations, and educational and training institutions. This is itself a large-scale and complex endeavour, but is too often neglected in the rush to implement industrial policy in its narrow definition.

There is also an important nexus to be achieved here. Investments in social inclusivity are critical to keeping intact the political consensus needed for open economic and industrial policies. And that economic, social, and political nexus is what helps us achieve our long-term goals of good jobs and shared prosperity. They go together, or they each fall apart.

My third observation should be the most obvious, but it is where the shortfalls are growing, with potentially devastating effects in the decades to come. It is not just a global goal, but in all our interests, to step up the pace of actions to arrest climate change, and the closely associated crises of biodiversity and the global water cycle. It is in every community, village, and farmer's interests.

Debate over appropriate burden-sharing between the advanced and developing world – or between cumulative and current emissions – is relevant and important. But the climate challenge is most fundamentally an opportunity for investment and growth, rather than a burden.

It is about creating new engines of growth in the developing world and globally. Achieving scale in the transition to affordable clean energy, in agricultural reforms for climate and water-resilience, and in the other innovations needed for sustainability, are a major opportunity for new prosperity.

A concluding observation. We should guard against the reverse of John Maynard Keynes' famous dictum on politicians who believed themselves to be exempt of intellectual

influences, but were "usually the slaves of some defunct economists". The equal danger we run today is of economists and commentators, not least those in the advanced economies, despite protestations of independence, being in the service of the political temper of the times.

I am sure this conference, and its gathering of outstanding minds from India, Southeast Asia, and others in East Asia, will help advance honest thinking on our long-term interests, and how we can best achieve them. I wish you a fruitful discussion.

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CSEP
INDIA IN ASIA
DEEPER ENGAGEMENT
MARCH 1-3, 2024


TATA PLAY

Introduction

Rakesh Mohan

The hyphenated word pan-European is defined in the online Cambridge dictionary as "including or relating to all places in Europe." However, one draws a blank if the meaning of pan-Asian is sought in the same dictionary. It appears that there is relatively less credence given to a pan-Asian identity. This is understandable as the differences in the levels of economic development across the Asian economies are greater. Further, Asian peoples with their separate histories, ethnicities, religions, and cultures have interacted and overlapped but not to the same extent as European nations.

Modern India's orientation to the East began to change in the 1990s with the initiation of the official "Look East" policy and was then strengthened more recently with the enunciation of the "Act East" policy. Although some progress has been made over the past two decades, India does not yet have sufficiently extensive person-to-person and non-governmental institutional engagements with the Asia region to the East of us.

Asia is expected to incrementally contribute a higher proportion to global GDP and trade over the next couple of decades than in the past. The centre of gravity of the global economy is shifting gradually from the Atlantic Ocean towards the Indo-Pacific after almost 300 years. Greater interaction between India and East and Southeast Asia would be of mutual benefit to both. Over the next decade or so the combined nominal GDP of Asian economies comprising Northeast Asia, Southeast Asia, and South Asia could be larger than the United States and West Europe put together.

As the Indian economy continues to grow faster than most other economies, its weight will expand commensurately. Simultaneously, it will also have a larger strategic and geopolitical role within Asia and in the rest of the world. Greater financial and trade integration across all of Asia would be mutually beneficial for the entire region, including India. This agenda will be helped by greater interaction among policy influencers.

Although COVID-19 slowed global economic growth, the longer-term trend of higher GDP growth in populous Asia is likely to continue. This incremental yet steady structural shift in the world economy has already brought about consequences in its wake with worldwide political and strategic ramifications. Greater overall Asian integration is an objective that should be of mutual interest to all the subregions within the Asia Pacific.

In this context, the Centre for Social and Economic Progress (CSEP), initiated an annual conference in March 2023—**India in Asia: Deeper Engagement.** These conferences are designed to help deepen the current and future engagement between India and Asia. It is aimed at building and deepening intellectual engagement among experts who have government, academic, private sector or think-tank experience across the Asian region spanning South, Southeast, and East Asia. The focus is on geo-economic issues along with inter-weaving relationships with political and strategic developments.

Within East and Southeast Asia, a dense network of institutions has emerged over the past few decades, which has connected countries in the region with one another and has deepened economic integration incrementally in various spheres. These include APEC, ASEAN, AMRO (ASEAN +3 Macroeconomic Sur-

veillance Organization), CMI (Chiang Mai Initiative), EAS (East Asia Summit), SEACEN (Southeast Asian Central Banks Initiative), ERIA (The Economic Research Institute of ASEAN and East Asia), AIIB (Asian Infrastructure Investment Bank, Beijing), RCEP and others. India is not a member of any of these institutions (except AIIB), although it now has observer status in some of them.

Over the years, membership in these organisations has provided opportunities for the development of institutional and deep personal relationships among policymakers, officials, academics, and other opinion-makers. This has contributed greatly in fostering mutual understanding among influencers across Northeast and Southeast Asia. At the same time, India is relatively less well-connected in terms of non-governmental interactions with the rest of Asia. Closer interactions without government oversight should foster better understanding across civil societies in the region particularly about defence, mutual security, and knowledge promotion.

We feel gratified that the first Conference successfully brought together academics, influencers, and policymakers to discuss and explore the implications of Asia's growing significance. The conference served as a platform for knowledge exchange and collaboration, with the aim of strengthening relationships and furthering research in the region. As a follow up, CSEP plans to build on this success and make the conference an annual gathering of scholars, academics, government representatives and think tanks between India and Asia to the East of us.

Objectives of This Annual Conference

In view of the region's increasing importance in the world it is evident that we should promote processes which can make up for lost time and deepen engagement between India and East and Southeast Asia. This could happen through greater interaction across think-tanks, academics, and other influencers.

Consequently, what would be the future roles and prospects of countries in the region including that of India in the coming years in the economic and political-strategic spheres? How will India engage with, and be more accessible to countries in this region as it assumes greater economic, political, and strategic salience in the world, and vice versa?

Since the conference is residential and is held over two days in an exclusive Fort Heritage Hotel, it is characterised by continued informal animated discussions over lunches, dinners, and teas. We are therefore confident that the objective of fostering deeper engagement at the personal level will take place successfully over a period of time through these annual conferences.

Second Annual Conference Theme

New Industrial Policies: Asian Perspectives

There has been a reasonable degree of consensus on the course of desirable economic policy for growth in emerging markets and developing economies (EMDEs) over the last three decades or so. Much of this was centred on strategic integration with the world economy, encompassing relatively open trade and foreign investment; mobility of factors including flexible labour markets and financial market development; high savings and investment rates; and a capable government committed to growth. In individual economies, however, policies have been influenced by country circumstances and opportunities shaped by global trends.

Although there was some broad correspondence between these development strategies and the so-called "Washington Consensus", there were significant differences as well. For example, "strategic integration with the world economy" meant neither unfettered trade liberalisation nor totally open capital flows. There is a widespread view that the remarkable economic growth and development achieved by East and Southeast Asian countries over the last 50 years had much to do with the calibrated utilisation of industrial policies in these countries, along with the importance given to the role of health, education, and openness to trade and foreign investment. On the other hand, many industrial policy initiatives in Asian countries yielded disappointing results, including some in otherwise successful countries.

This general view of desirable policy has been shaken by recent developments such as climate change and the associated energy transition process, geopolitical conflicts and pressures and their geo-economic consequences, expanding US-China rivalry, weakening of a rules-based global economic order and of the WTO, and ongoing technology-driven transformation of economic structures. The perceived importance of industrial policy has grown as countries seek to ensure a green, digital, and inclusive recovery after the COVID-19 pandemic, and to reduce dependence on critical raw materials and other strategic inputs consequent to the Russia-Ukraine conflict.

These developments have led to the emergence of so-called "New Industrial Policies", particularly in advanced economies. These policies are seen to be inconsistent with the broad consensus outlined earlier, promoted by the developed world, which gave broad emphasis to the importance of free markets and trade, along with a minimal role for governments. These countries championed a liberal global economic order underpinned by such global institutions as the WTO, the IMF, and the World Bank, which consistently promoted trade liberalisation as a key driver of growth and development.

What is industrial policy: we usually refer to industrial policy as the application of one or more government policy instruments to promote targeted firms, industries, or economic sectors to achieve strategic objectives.

These objectives can include, among others:

- Encouraging national champions in global markets.
- Driving productivity growth through innovation and scale economies.
- Accelerating the transition to clean energy.
- Bolstering national (including health and energy) security and economic resilience.
- Increasing economic opportunities in lagging regions, generating jobs and building a more inclusive economy.
- Shifting the balance of power globally or regionally.

Government intervention is then said to be justified because markets are perceived to be incapable of achieving such objectives and the targeting of firms, industries, or sectors becomes necessary.

A host of advanced economy governments have announced new industrial strategies such as UK's '*Industrial Strategy: Building a Britain Fit for the Future'* (2017); the *European Green Deal* (2019), the *Next Generation EU Fund* (2020), the *European Chips Act* (2022) and the *EU Green Deal Industrial Plan* (2023), to enhance its "open strategic autonomy" in the transition to a green and digital economy; and most importantly, the US *Inflation Reduction Act* (2022), the US *CHIPS and Science Act* (2022), which have introduced subsidies to reshore production of semiconductors and have adopted restrictive national content regulations for electric vehicles to ensure domestic production. The surge in industrial policy initiatives in the advanced economies represents an inflection point in size and scope.

In Asia, Japan established a feed-in-tariff (FIT) system in 2012 to incentivise the diversification of its power supply, and under Japan's *Renewable Energy Act,* a new "feed-in-premium" (FIP) scheme went into effect in April 2022 alongside the existing FIT scheme; Korea initiated the *Korean New Deal* (2020); the *Made in China 2025* initiative, consisting of large subsidies to targeted industries, focused on reducing external dependence by strengthening domestic sourcing by local firms, and the drive for self-sufficiency in key technologies. Nearer home, the *"Production Linked Incentives"* (PLI) scheme in India provides subsidies to a whole host of industries, along with increased protection in some. Many other countries have enacted analogous schemes.

As a consequence, policymakers in emerging markets and developing economies (EMDEs) are now debating what the features of their economic policies should be in the future. Along with the introduction of these new industrial policies and the weakening of the WTO, they are concerned about the fragmentation of the world economy and the flouting of global trade rules. Trade interventions are on the rise, in the form of industrial policies and subsidies, import restrictions based on national security and environmental concerns, and export controls to punish geopolitical rivals and ensure domestic supply. These is-

sues are of salience to Asian countries in particular because of their own past practice of industrial policy.

These industrial policy trends in developing and advanced economies raise questions of central importance for policymakers in Asia and will constitute the core of the 2024 **India in Asia: Deeper Engagement Conference.** What explains the recent explosion of industrial policies around the world? How effective have industrial policies in Asia been in achieving their stated objectives? What have been the cross-border consequences of industrial policies in Asia? What lessons can Asian economies draw from global experience and how can these be applied to shape regional and global institutions and make them fit-for-purpose for the 21st Century?

What should be their response to these emerging policy developments in the advanced economies? Should they continue with their broad policy stance of promoting technology and human development, while practising broad open trade and market-oriented policies? Or do they need to respond to these developments in other ways and promote specific industries and economic activities through subsidies and focused traded interventions, as they are doing? Are such policy interventions necessary in the wake of impending climate change that requires significant economic interventions particularly focused on the energy transition? Is there a new economic growth and development paradigm that needs to be discussed in the Asian context?

The emergence of these new industrial policies has also occurred because of the geopolitical developments that have taken place in recent years. The increasing perception of China as a strategic and political competitor by the United States is a key ingredient in the new worldview of appropriate economic policies. This conference will therefore also discuss the implications of geopolitical developments on industrial policy and vice versa.

For the second conference in March 2024, we have therefore chosen the overarching theme of **New Industrial Policies: Asian Perspectives.**


INDIA IN ASIA

Welcome Address

Vikram Singh Mehta

Honourable Minister of Foreign Affairs, Shri Jaishankar, Madam Pangestu, Professor Danny Quah and, of course, my friend and colleague Rakesh. It is my privilege to welcome all of you to this second 'India in Asia Conference' that we are holding, under the umbrella of the Centre for Social and Economic Progress (CSEP) – the think tank I chair.

Last year, in 2023, the Centre for Social and Economic Progress completed 10 years. It was earlier called Brookings Institution India Center (BIIC); in 2020 we changed its name to the Centre for Social and Economic Progress.

Ten years ago, when the President of the Brookings Institution, Strobe Talbott, asked if I would help him set up an affiliate of Brookings in India, I agreed on three conditions.

The first condition was it must be an Indian think tank. The second, that it must focus its efforts on issues of policy importance to India. And the third, that it must be funded by a cross-section of donors so that the reality of independence is not marred by perception. Strobe Talbott and his colleague Martin Indyk agreed to my conditions.

The third condition made the challenge of implementation difficult. This is because the role of policy-oriented research and think tanks was not well understood at the time. Most corporates were of the view that Indian bureaucrats were reluctant to accept advice from entities outside their own fraternity.

My endeavour was to persuade corporates that the world was complex and that, if proffered, our bureaucracy would welcome policy briefs that addressed matters of contemporary significance, were built on empirical and rigorous analysis, written in clear and comprehensible prose, and contained recommendations they could wrap their hands round.

BIIC was successful in this endeavour. Twenty-five donors agreed to contribute towards the corpus, and we refer to them as our Founding Circle. I have thanked them often but I would be remiss in not thanking them again on the occasion of this conference.

As mentioned earlier, BIIC changed its name to the Centre for Social and Economic Progress (CSEP) in 2020.

CSEP is today one of the larger and most respected multi-disciplinary think tanks in the country. It has a faculty of around 100 people, working on a range of issues such as economics, international security, health, energy, climate change, and minerals. The plan is to broaden this to cover technology and many other emergent issues of importance.

The world is at an inflection point – it faces many risks; it is polarised and fragmented; it is a world in which individuals responsible for navigating or captaining the ship of state, people like the honourable minister and others in this room today, have no option but to bring all hands to the till to steer the ship of state to a safe harbour. What is gratifying is that over the course of the last few years, CSEP has gained recognition for providing a useful pair of hands. Its policy briefs and discussion seminars are increasingly welcomed by individuals in various positions of authority, and this is a matter of great pride for me.

This conference is one more milestone for us. It is a particular pleasure for me to welcome you all.

Inaugural Address

S. Jaishankar

This conference is about 'India and Asia: Deeper Engagement'. The agenda itself brings up two questions: with whom is that engagement and what are the terms?

This year's theme is of Asian perspectives on new industrial policies. It is obviously an eminently suitable one, in part because it addresses key aspects of the two questions I mentioned. But, equally, because it responds to an ongoing debate about globalization, to the emerging reality of great power competition and the compulsions of a multi-polar Asia.

For India, in particular, this relevance is heightened because it catches us at a time when we are taking decisive steps in regard to deepening manufacturing in this country. Not just by boarding a bus that we missed to some degree in the last many decades, but by concentrating on emerging areas that are now likely to have a global impact. Some of you may be aware of the Cabinet decision yesterday to approve a semi-conductor fab and two assembly projects. This comes on top of collaborations that were announced during PM Modi's visit to the US last June. We also began a solar rooftop initiative that is aimed at covering 10 million homes in the coming months. Also relevant here, is a second space port that has been finalized a few days ago, even as FDI in the space sector has been liberalized. I cite these three illustrations because they are requirements of an era that will be characterized by AI and EVs, chips and batteries, clean and green tech, space and drones, by critical minerals and trained human resources.

But it is not just the emerging domains that are witnessing such activity. India is approaching manufacturing with a renewed zest, combined with much more effective delivery in regard to infrastructure. It is also seeking to get its human resources, improved through better skilling and training, much more into play. A culture of startups and innovation has also taken root in the last decade. It is also noteworthy that production in India is getting a fairer deal through robust measures against unfair competition. Whether it is the new or the established sectors, the Modi government is committed to transforming India into a significant manufacturing force. And there is an equally clear strategic realization that without adequate manufacturing, we will never master the new technologies so essential to becoming a leading power.

All of this has a global context, just as it has global implications. For years, issues of growth and development were discussed with an emphasis on outcomes and efficiency alone. If the mantras of the past are under challenge today, it is because earlier thinking was oblivious to the political, security, and even social consequences of a particular method of globalization. It is therefore essential to revisit some of those assumptions in the light of recent developments. When the talk has turned to foreign policy for the middle class in the US, to dual circulation in China, to Make in India here, or to strategic autonomy in Europe, it is time to wake up and smell the coffee.

So, what has really changed? Most fundamentally, the perception of the costs and benefits of globalization. In fact, it has raised the question: whose globalization are we talking about exactly? Much of the concern emanates from the enormous production and technology over-concentrations that it has produced in the last three decades. What

may have been latent uneasiness about it has morphed into distinct discomfort if not a sense of actual danger. This has been accelerated by the frequent leveraging of the over-concentration across different domains. At an economic plane, it has created strong dependencies. At the social one, the hollowing-out of manufacturing in other geographies has led to employment concerns. At a political level, there are both strong security and sovereignty implications.

Such concerns have acquired even greater life in the light of our Covid experiences. Many of us woke up to a situation where the basics of our health security were outside our control. We saw the arbitraging of pandemic anxieties in a ruthless manner. Demand and supply were manipulated and costs were often exorbitant, if not actually extortional. Such situations brought home two basic truths: one, that many of us were far too dependent for basic necessities on others; and two, that we needed to be aware about the sources of our dependency.

Granting that this was an unusual period, there are still lessons to be drawn for normal ones. For example, as climate events happen with increasing frequency, there is no guarantee that they would not disrupt key supply chains. On the contrary, there is an increasing likelihood that they would, if our reliance is so narrow geographically. Moreover, supply lines themselves can come under stress for other reasons. We are today experiencing some of the turbulence as a result of missile attacks in the Red Sea. Some years ago, the accidental blocking of the Suez Canal created its own difficulties. There could even be more planned events, such as the impact of conflicts, like the one we are currently seeing in Ukraine. Just-in-Time may work in Nagoya; it cannot work for the international economy as a whole. A more uncertain and turbulent world means that the needle is moving in the direction of Just-in-Case. We express that in current parlance as the argument for more resilient and reliable supply chains.

These concerns are particularly strong in regard to critical and emerging technologies. If we look at areas like renewable energy, telecommunications, semiconductors or electric mobility, there is good reason for the world to worry about the lack of options. It is inevitable, as these grow, that serious efforts at de-risking will start to gather steam. In some areas, this is already visible. Any debate on new industrial policies must therefore take into account the growing collective interest in diversifying production. This has already reached a level where new understandings are being forged, as much between nations as between enterprises.

So far, we have been discussing the world of products. When we move to the digital domain, this same case becomes infinitely stronger. It may not matter that much to us where the apparel, consumables or furniture we use are made, though we would naturally prefer that these are made by us. But when it comes to data – who harvests it, where it resides and how it is processed – this makes a world of difference. Rules, norms and firewalls acquire a critical importance. For that reason, trust and transparency are at a particular premium. The digital concerns are already spreading as we live in an increasingly informationalised environment. The auto industry appears to be one such example. Technology today connects political sociology increasingly with international economics.

In an era of great power competition, these aspects naturally come to acquire greater salience. We have already experienced that market shares have been leveraged, that trade, finance and even tourism have been weaponized, and that existing mechanisms and platforms effectively gamed. Such compulsions have also given new life to technology controls and strategic trade, as indeed to the acquisition of key resources. For that world which has grown comfortable with established globalization, these have now emerged as new points of stress. The accompanying debate has been one of decoupling or de-risking. In real life, both are happening to certain degrees, and sensible policy makers will refrain from extreme interpretations of both their viability and their impossibility. The challenge that many will face will be to continue to walk on both sides of the street in as many destinations and on as many days as possible. That will become more difficult as time passes. Some choices on some issues on some occasions could be unavoidable.

The rebalancing of the world has seen the emergence of new production and consumption centres. What has lagged behind is a key link: the creation of new connectivity. This is particularly necessary in those parts of the world where the era of imperialism disrupted historical linkages. Like production, connectivity too could be exposed to the risks of over-concentration if it is unilateral, non-transparent and non-commercial. That realization has become much sharper in the last decade. Where India is concerned, our views on the need for a genuinely collaborative international effort has been long known. Today, it is visible in the exploration of the IMEC corridor, the International North-South Corridor to the West, the Trilateral Highway, and the Chennai-Vladivostok Corridor to the East. Asia would truly benefit from additional lateral connectivity that is free, open and rules-based.

Friends, industrial policies cannot be divorced from the quality of human resources. In our own country, it is noteworthy that the two challenges are being addressed by the Government in an integrated manner. Such thinking is increasingly a global necessity as well. We have already seen that ambitious plans in the developed world on new and emerging technologies have slowed down because of the human factor. The truth is that new technologies are going to create a global workplace. In the last year, India has concluded mobility agreements with a number of European nations, as well as Japan and Australia. Both in numbers and scale, such initiatives will become more serious with the passage of time. In many ways, as India develops its skills and talents, the attraction of Make in India will commensurately grow.

So let me conclude by saying this: we are heading into a process of re-globalization. It is shaped by more resilient supply chains, by trusted and transparent digital transactions, sharper competition, and greater innovation. These are the realities to which new industrial policies must respond. And as a foreign minister, one last piece of advice: you now ignore geo-politics at your own peril.

Thank you.

Keynote Address

Bibek Debroy

Good afternoon, ladies and gentlemen. Namaste. As you have guessed, I am also a guest here. The host is CSEP. But, by virtue of being Indian, I am also a bit of a host to those of you who have come from abroad. So, let me add my words of welcome as well.

At this time of year, there is another competing conference at Stanford. This is the second year that the Stanford conference is being held, and, deliberately or inadvertently, the dates invariably clash with CSEP's. My wife and I were committed to going to Stanford, but such is the clout that CSEP, Rakesh Mohan, and Laveesh Bhandari have that we were forced to drop out. In any event, that was the "India Dialogue"; this is "India in Asia".

As most of you know, I asked Rakesh and Laveesh what they wanted me to talk about. They were very vague, so I am also going to be—not vague—but a bit unstructured in terms of what I want to say. I am going to ramble a little bit, but I hope to convey a sense of what India is striving for within as well as outside Asia, and what the trajectory looks like.

Most of you probably know that in India now there is a lot of discussion on what we in the country call *Amrit Kaal*, which is the trajectory for the next 23 years, for the year 2047 when India celebrates 100 years of independence. So, there is a lot of discussion around that. What does India have to do to become what is an aspirational goal of *Viksit Bharat* or developed India?

Certainly, everyone present here knows that the expression "developed" does not quite have a precise definition or meaning anymore, as opposed to World Bank classifications like "middle income", "upper middle income", "lower middle income", and so on. Having said that, there are different ways to try and pin down what a "developed" India in 2047 might be. One way of doing that is in terms of UNDP's Human Development Index (HDI). I have become developed "if the HDI value is more than 0.8". I could also try to define "developed" in terms of the share of manufacturing or industry in GDP. The more customary way of defining developed is, of course, in terms of per capita income. Roughly speaking, a country can be said to become developed—despite my saying that there is no precise definition—if it moves into the higher income category. So, we are talking about a per capita income of US$13,000.

One will find there are many discussions, speculations, forecasts in India floating around about what India's per capita income might be in 2047. And that boils down to a few obvious assumptions: How is the exchange rate going to behave? What is going to be the inflation rate? That's a bit easier to forecast because the Reserve Bank of India (RBI) has a band that you can use for that assumption. But, most important of all, what is going to be the real rate of growth? There is, of course, the question of the rate of growth of population, since it is the per capita income. But that is easier to pin down.

When one looks at that figure of per capita income in 2047, the crux is whether we are talking about current US dollars in 2047 or constant US dollars. If we are talking about constant US dollars, it makes things a little bit more

difficult. If we are talking about current US dollars, it's a bit easier. Accordingly, we will find some people saying, yes, it is possible for India to move beyond $13,000, assuming the World Bank does not change the classifications. And there will be others who will say, "No, no, it's not going to happen. India will touch about $10,000 in constant dollars." And you have similar figures, similar estimates, and similar forecasts about the size of the GDP.

So, this is one set of discussions in India, about India in 2047. There is a second set of discussions that happens in India, probably a little bit more limited to within India, and that is in view of the fact that we are heading into the 2024 elections, as several countries in the world are. Obviously, the question that is asked is: What's going to be the agenda for the new government? What are going to be the priorities for the new government that's going to be sworn in in May 2024? Remember that this new government will be for 2024 to 2029. This will have been a period when India will attain a GDP of $5 trillion, become the third-largest economy in the world, and, towards the end of 2024–29, India will approach a GDP aggregate of $7 trillion. And, of course, in 2030, we have the terminal year for the Sustainable Development Goals (SDGs). Most countries in the world have deviated from the path of attaining the SDGs, but I need to quickly mention that India has deviated less compared to many other countries in the world. So, what will be the agenda for this new government?

There is near consensus—although everything is uncertain—that the political composition of this new government will be no different from the present government. In other words, it will be a Bharatiya Janata Party (BJP) government, a BJP-led government, and the Prime Minister will continue to be Narendra Modi. So, when people ask me this question, "What is going to be the agenda for the new government?", I am a bit puzzled about what I should say. The moment you ask the question, "What is going to be the agenda for the new government?", automatically and implicitly, you are assuming that there was something wrong with the policies pursued by the Narendra Modi government in the first and second terms, and, therefore, in the third term, the policies are somehow going to be different. They won't be, as is understandable. There is a continuity in the policies. So, you won't have a completely different set of priorities. Understandably, you will have tweaking, you will have modifications, but there will be a certain continuity. And what I hope to do is to present before you some of the elements of what is going to shape that particular agenda.

When we are talking about the government, we are really talking about a union government. Please do remember that India is a federal country, though not quite in the legal sense. And there are limited degrees of freedom that the union government has. What happens in India is largely a function of what happens at the level of the states. The precise figure depends on the year, but, otherwise, 97% of India's GDP originates in the states. If you leave out railways, national highways, and stuff like that, it is essentially the states. The states do differ. States are large, states are small, states are generally heterogeneous, and states vary.

Going back to an earlier question that I mentioned, of what is likely to be India's per capita GDP in 2047, it boils down to your assumption or your guess of what is likely to be the real rate of growth from now until 2047. Of course, as economies develop, the rate of growth tends to slow down, but let's ignore that. If you look at the various forecasts that people have done, you will find that some people will say, as a medium-term growth rate trajectory, 5.5 to 6%. Some will say 6.5 to 7%, some will say 7.5 to 8%. These may seem to be minor differences, but by virtue of the fact that growth is exponential in nature, those differences blow up. After the recent GDP figures for the third quarter in yesterday and today's papers, and the full year's estimate of 7.6%, I am inclined to think that some people who said 5.5 to 6% might now grudgingly accept that, no, India is likely to do better.

The point that I, however, want to flag is what I just said: that what happens in the aggregate to India is a function of what happens to the individual states. And if I look at the last 10 years, amongst the major states, not the minor ones, if I look at the last 10 years, only two states among the major states have grown by more than 7%, and those are Gujarat and Karnataka. So, obviously, if India has to grow faster, the other states have to grow faster. And quickly in passing, in terms of contributions to the aggregate Indian GDP, almost 50%, or 47% to be precise, is made up by just five states. Gujarat and Karnataka I already mentioned. The others are Maharashtra, Tamil Nadu, and Uttar Pradesh.

Again, several of you will know there are reasons for these union–state—union as in the Centre—there are reasons for tension between the union government and state governments. There are traditional mechanisms, traditional avenues to reconcile and sort out these differences. NITI Aayog is one of those. The Finance Commission, of which the 16th one has just been constituted, is another. The Inter-State Council is another.

Let me now turn a little bit to the immediate, for the government that is formed in May 2024. That government in May 2024, one of the first things it will have to do, one of the first things the Finance Minister will have to do, is to formulate and present a budget. A budget is not merely a statement of the union government's annual receipts and expenditure. It also sets out a reform agenda of sorts. I want to quickly mention what I think will be the important components of this reform agenda.

Now, when we say tax reform, there is a direct part of it, and there is an indirect part of it. The indirect part of it is really further reforms to the Goods and Services Tax (GST). Make no mistake, the fact that the GST was introduced was a phenomenal achievement, and the GST Council is a phenomenal example of union–state cooperation. But also, make no mistake, the present GST is a work in progress.

There is a figure that is often bandied around—perhaps not that much now—which said that the introduction of GST in India would add 1.5 to 2% to GDP growth incrementally. This was estimated by the National Council of Applied Economic Research (NCAER) on the basis of a model for the Ninth Finance Commission, and this was based on the assumption that the GST was a perfect GST. What do I mean by a perfect GST? I mean, every good and service is part

of the GST. There are several important items that are not part of the GST today, even when an agreement has been reached that they ought to be part of the GST. Examples of that are petroleum and related products, stamp duties, items for which they have not been in agreement so far but they should be part of the GST: liquor and tobacco. And, of course, the number of rates. Today we have too many rates: 0%, 5%, 12%, 18%, 3%, 0.25%, 28%. I personally think that there should be one single GST rate. However, let me also say that none of my economist friends agree to it. Either you are not an economist or you are not a friend. Most of my economist friends tend to argue that there should be three rates: a standard rate of, let us say, 12%, a merit rate of 6%, and a demerit rate of something like 18%.

The problem with doing something like this, or attempting something like this, is that we begin to quibble about what should belong to 6%, what is an item of mass consumption, what is an item of elitist consumption? And, therefore, instead of simplifying, we make life more and more complicated, which is why we have so many rates today. Therefore, if it is an air-conditioned restaurant, the rate will be higher. If it is non-air-conditioned, it will be lower. If it has a seating capacity of more than 25, the rate will be higher; less than 25, it will be lower. In my view, issues of equity are best addressed through direct taxes, not through indirect taxes like the GST. In the process, this is not a decision about the GST that the union government alone can take decisions. The decisions are for the GST Council to take. In the process, the decision will also have to be taken about what should be the average GST rate. The average GST rate today is about 11.5%. Computing revenue-neutral rates, what kind of rate would have given you the same kind of revenue, is always problematic. It depends on assumptions. But when the GST was introduced, the revenue-neutral comparison computation was something like 17%. So, compared to 17%, we have 11.5%. Of course, GST revenue is doing very well, but that is largely because of more companies being brought into the GST net and better enforcement.

Let me now turn to direct tax reform. On direct taxes, there is a personal income tax part and there is a corporate tax part. I should quickly mention that the taxation of agricultural income is completely under the purview of the states. And, with the exception of plantation income, agricultural income is generally not taxed. Of course, from an enforceability point of view, once I decide not to tax agricultural income, it becomes very difficult to tax non-agricultural income of farmers also. Leaving that aside, today—when I say "today", it always means six months ago, because data has a time lag—94 million people submit income tax returns, which means a very small percentage of the Indian population. These are individuals, and I am not talking about corporates. What may surprise you, unless you know what is going on, two-thirds of these returns... I said 94 million submit income tax returns, and I did not say they pay income taxes. Two-thirds of them submit returns that show zero tax liability.

There is an impression that there is a lot of tax evasion. There is indeed tax evasion. Otherwise, how would the chartered accountants and lawyers make a living? But the bulk of what happens is not tax evasion, which is illegal, but tax avoidance, which is perfectly legal. Tax avoidance is the use of legitimate exemptions to reduce your taxes. And one of the things on direct taxes, one of the items on the agenda is the complete removal of exemptions and to have a direct tax code which has no exemptions, zero exemptions, and which also breaks down the silo that exists between personal income tax payers and corporate tax payers because do remember that any unincorporated enterprise pays income under the personal income tax laws and not under the corporate tax laws.

What is the tax-to-GDP ratio in India now? Well, you will find a figure of about 11.5%, but that's only the union government. The states also contribute taxes. If you add the states, it's about 17.5%, the tax-to-GDP ratio. It's gone up a bit. 17.5%. Is that high or low? It depends on which country you are comparing with. What I want to point out is that every year, we lose about 5 to 5.5% of revenue because of exemptions. So, had those exemptions not been there, then the tax-to-GDP ratio would have been something like 23%. So, one of the issues to be debated as a country is what we do with exemptions. As of today, for both personal income tax payers and for corporate tax payers, there are two channels: one with fewer exemptions, one with more exemptions. But today, there isn't enough of an incentive to opt for, either the personal income tax act or the corporate tax side, for the channel that has fewer exemptions. By virtue of the hat that I wear as the Chairman of the Prime Minister's Economic Advisory Council, often people come to me. They come to lobby, as they no doubt did when Rakesh used to be in the Finance Ministry. And the usual lobbying exercise is, "Remove exemptions for everyone else but please retain them for me", which is the reason why we have not been able to remove the exemptions in their entirety.

I should quickly mention something about enforcement also. Many people are not aware—even Indians are not aware—that in the increased scrutiny that has happened since 2014, there are 600,000 shell firms that have been closed down. Let me give you a figure only from 2023, or only calendar year 2023. In calendar year 2023, there have been 6,323 cases of GST evasion involving input tax credit. 6,323. You don't know how to relate to that. Let me give you the total evasion according to the department. The total evasion according to the department, only for calendar year 2023, is Rs 198,324 crore. One crore is 10 million. Now, once these allegations were levied, about Rs 28,000 crore—so Rs 280,000 million—was voluntarily paid without any further contest on the part of the assessees.

Let me now turn to something else which I don't think is sufficiently talked about. As economists—most of us here are economists—we dabble in policy. We are concerned with public goods, which I am not using in the strict economic sense, but in the sense of goods and services that should be provided by the government. There are three kinds of issues that arise:

First, what should the government be spending on? We want the government to do all kinds of things under the sun. Should the government be spending on A or B? Because resources have opportunity costs, and that is something we sometimes do not appreciate. Here are some back-of-the-envelope kind of num-

bers. The government should spend 6% on education. 4% on health. 6 plus 4 is 10. The government should spend 10% on infrastructure. 10 plus 10 is 20%. The government must spend 3% on defence. It's 20 plus 3, 23%. I already gave you a tax-to-GDP ratio of 17 to 18%, and we already have demands of 23%. Which is why we need to have—not as the union government, but as a collective entity—we need to be clear about what we want the government to spend on, because, as I said, all resources have opportunity costs.

The second question, which is perhaps an even more important question, is what level of government should be spending this? Invariably, when we talk about decentralisation and devolution, we have in mind union–state issues. But decentralisation and devolution are not only about the union and states, it is also about local governments. Local governments have some sort of recognition under the constitution. But they are recognised, and also quite not recognised, because state governments have done precious little to devolve financial resources and other powers to the local bodies. We spend a lot of time debating what the union Finance Commission should be doing. We spend little time debating what the state Finance Commissions have recommended. Most of the public goods you will be able to think of are actually delivered by local governments and not the union government, and certainly not even state governments.

In passing, down the years, we have built up a silo between what is rural and what is urban. Let me quite clearly mention this because there is a census definition of what is urban, but it is hopelessly outdated. And to understand what has been happening in India, one needs to appreciate that most of the urbanisation that has occurred … we don't have the 2021 census yet. But earlier, most of the urbanisation that has happened has taken place in what is called census towns. In other words, they are towns as per the census, but they don't have municipalities yet. So, there are serious governance issues in these urban areas. I don't know how many of you know, even those who are from Delhi, technically Delhi has 224 villages within Delhi. There are 224 villages.

I should also quickly mention, when I said that what level of government should be spending, should the union government be spending on health? Before you immediately say yes, because there is a national mission on health, health is a completely state subject. I am just mentioning this to illustrate that what is there in the Seventh Schedule of the Constitution was inherited from the *Government of India Act* of 1935. So, there are issues about what the India that looks forward to 2047 should be doing in terms of the allocation of decision-making, not only between union governments and state governments, but vis-à-vis local governments also.

Recently, the Finance Minister, when she was asked about the agenda of reforms for the new government, mentioned factor markets. She mentioned labour, land, and, of course, capital. On labour, quite often, historically, people have flagged an exit policy for labour, and particular provisions of the *Industrial Disputes Act*. Certainly, those who follow India will know that the 50-odd labour laws have now been consolidated into four codes: on wages, industrial relations, social security, and health and working conditions. But, like I said, health is completely in the state list. Labour is in the concurrent list. So, once the union government has announced these codes, state governments have to announce the orders. If you look at the orders issued by the state governments, you will find that all the rigidities that existed in the labour laws have crept into the orders. And in case you do not know, the Shops and Establishments Act, those are completely administered and enacted by state governments, and the services sector is entirely governed by the Shops and Establishments Act. One reason why the call centres moved to Gurgaon—the main reason why the call centres moved to Gurgaon—was the rigidity of the Delhi Shops and Establishments Act.

We are also talking about the labour force participation rates, not just for males but for females also. We are talking about greater formalisation amongst the many kinds of transitions that are happening in India. There is a formalisation that is going on. There is a transition that is happening in terms of rural to urban, there is a transition that is happening within agriculture—from traditional food grain output to commercialisation and diversification—there is a transition that is happening towards wage employment, and there is a transition that is happening in terms of formalisation of both individuals and enterprises. About 97% of micro, small, and medium enterprises (MSMEs) are in the informal sector, so to speak. They are not registered under any form of legal undertaking. I am not even talking about the *Companies Act*. A lot has been done by this government to encourage formalisation. You will have heard of Aadhaar, direct benefit transfers, and the JAM trinity: the Jan Dhan, Aadhaar, and mobile trinity. But we still do not have a complete identification of individuals in the sense that some individuals, some programmes—government programmes, welfare programmes—are targeted as individuals, like health programmes. Some are targeted as households, like the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA). So, there needs to be a matching of the individual identification with the household identification. About half of that work was done before COVID-19. It has to resume properly after COVID-19. Similarly, you cannot mandatorily insist that informal enterprises must register. I mentioned MSMEs are not registered under any form of legal undertaking. But the Goods and Services Tax Network (GSTN) number, which is the number associated with GST, is a beginning of what can become an identification number, a unique identification number, for informal enterprises.

Land. Everyone here, particularly since you did not have to travel through Punjab to come to India, will accept the need for agricultural reforms, reforming the kind of input subsidies we give, reforming controls in marketing, distribution, and so on. The Agricultural Produce Market Committee (APMC) Acts, etc., etc., commercialisation, diversification, and all of that. What I want to mention is that quite often we do not talk about land reforms, not as much as we should. Who is a farmer is defined by the state. How does the state define who is a farmer? State as in provincial or state government. How does the state decide? The definition of a farmer across states is that you must own agricultural land,

ancestral or otherwise. Therefore, to decide who is the farmer, I need to have land records. I already know how this can be done. I have the revenue records, I have the survey records. I have hand-held gadgets which can plot a plot of land. I can marry those together as has happened in some states, not only Gujarat, but even a far-flung state like Nagaland. Except the government of India, by the way, also has computerisation of land records and digitisation of industrial maps programme, which provides assistance to the states. But until I have modern surveys, industrial surveys, all computerisation is garbage in, garbage out. In a state like Bihar, the last cadastral survey was done in 1911. So, you can imagine the state of land records in Bihar, by implication also in Jharkhand. In Punjab, you are agitated about farmers. By 2025, in Punjab, the land survey will have been done in only 12% of the villages. For other villages, we do not know. In a state like West Bengal, land revenue has been abolished. If land revenue is abolished, then land ownership is frozen at a certain point in time. I will never be able to update the land records.

Having said this, I should quickly mention an interesting government programme that is known as Bhu-Aadhaar, which has started on a pilot basis. What Bhu-Aadhaar does is to give every plot of land a 14-digit number. It's a bit like an Aadhaar number; obviously it is not a binary. I cannot do it everywhere at the same time, as a pilot. So, once I have that plot of land under Bhu-Aadhaar, which is just a number, if you like a plastic card, I know the complete antecedence of that plot of land.

In May 2014, Narendra Modi became India's Prime Minister. At that time, a lot of people tried to anticipate what he might do. Would he be another Margaret Thatcher? Would he be another Ronald Reagan? What would be his position in the market versus the state continuum? No one bothered to state the obvious, generally, that why does he have to be a second Margaret Thatcher? Why does he have to be a second Ronald Reagan? Why cannot he simply be Narendra Modi? Since May 2014, the government's initiatives have been fairly obvious. There is the ease of doing business part, and the ease of living part. Government-to-business (G2B), government-to-citizen (G2C), and—sometimes not appreciated—government-to-government (G2G) also. All of which is intended to reduce the malign role of the government. And whenever there has been an attempt to reduce the malign role of the government, it has been applauded. There is not necessarily the same amount of applause when there has been an attempt to increase the benign role of the government, to ensure that the government exists in the places where it has not existed in more than seven decades after independence. Out of the 700,000 villages that India has, about 200,000 lacked basic necessities: the physical and social infrastructure, the local private goods in the form of electricity, gas, toilets, roads, health. In much of these, what has been done is provision of these basic necessities. In much of these, what has been done is an emphasis on individual deprivation and not community-based. One example is the switch from community-based toilets to individual toilets.

The use of technology. One example of that is the digital public infrastructure, and, of course, the decentralised identification of subsidies. So, while I am catching my breath in the middle of coughing, let me narrate two anecdotes. In Delhi, there are some ancient ruins in a place known as Suraj Kund. I read somewhere that in Suraj Kund, those ruins have been completely revamped. Early in the morning, I went there to see what it looked like. When we talk about digital public infrastructure, most of the time, at least people like us, we have in mind Aadhaar. But it has done phenomenal other things also. I turn up at Suraj Kund, and there is an entry fee to the monument, which is Rs 15. So, I take out my wallet, fish out Rs 15, and give it to the guard. The guard says no, he can't take cash. So, I said, "OK, here is my credit card." The guard said, "The machine is not working." So, I said, "Now what?" The driver was hanging around, listening to this conversation. He says, "It's OK. I will Paytm it." He pays using Paytm. Something like Paytm or other such interfaces are used much more by relatively poor people.

The other anecdote I have recounted earlier, but not in this forum. So, it bears repetition, particularly because my wife is also here, as I said earlier. Some of the things that the PM has tried to do is in terms of what would be called a "nudge" in behavioural economics. To make people's attitudes change, whether it is in the *Swachh Bharat* issue, whether it is in the transition towards green energy, whether it is in the planning of smart cities. In one of his speeches from the Red Fort, he used the word *"sab ka prayaas"*—everyone's effort. India will be a more prosperous and better-governed country not only because of what the governments do but also because of what individuals do.

Some years ago, I was the Chairman of the Committee, following actually Rakesh's footsteps, to examine railway reforms. In the course of which we travelled everywhere by train, not the super-fast Rajdhani kind of trains, but ordinary trains. Once, in the middle of the night, we had stopped in a godforsaken station in what was then a godforsaken state, namely Uttar Pradesh. The train had stopped—it was something like 2:30 in the morning—the train had stopped because a Rajdhani train had to pass. So, we asked the Ticket Collector (TC), "How long is the train going to stop here?" He said, "40 minutes." So, my wife and I decided to get down, stretch our legs on the platform. Completely deserted platform. 2:30 in the morning. There is only one food stall that is open. It was 2015, some 10 years ago. There is a tall, hefty man who walks up to that food stall, buys a packet of chips, proceeds to eat those chips and throws the wrapper on the platform. And I can see my wife approaching this man. I am not very sure what I should do. After all, she is my wife. I cannot pretend I do not know who she is. But this man is tall and hefty. I am sort of venturing 10 feet behind her. She goes, taps him on the shoulder and says, in Hindi, "Pick that up and put it in the garbage bin." He looks at her, looks her up and down, picks it up and throws it in the garbage bin. He goes off. We go up to the food stall owner and say, "This is remarkable." He says, "It is. But before the *Swachh Bharat* mission, this would not have happened."

Everywhere in the world, every country in the world has faced the shock of COVID-19. The shock of COVID-19 had many lessons. One lesson, which is obvious enough, is that you should not be excessively dependent on one particular country. It was obvious enough. But we learned it or imbibed that lesson even more during COVID-19 because of things like pharmaceutical intermediaries, things like solar panels from China. And we recognised something that should be obvious enough, that the attitude towards so-called protectionism are sometimes determined by known economic interests also. And one of the best articulations of this was in a paper, an essay, which generally got ignored, written by Keynes in 1933 in the *Yale Review*.[1] And to understand what this government has been doing, it's important to appreciate this.

Given what is going around in the world, it is more or less recognised that, as of today, in the immediate short term, net exports will not be much of a driver of GDP growth. So, it has to be consumption, it has to be investment, and it has to be government expenditure. And government expenditure in the form of capital expenditure. And this particular government has been characterised by fiscal rectitude generally, and with an emphasis on capital expenditure. But it has also been driven, particularly since COVID-19, by an emphasis on welfare. I mentioned basic necessities, but more than that. Part of this is because of the debate that happened everywhere in the world, including India, on inequality and the K-shaped recovery. And, therefore, the recognition, stating the obvious, that I do have to win elections. If I don't win the elections, then what is the point of talking about the reforms? So, to a large extent, not deviating too much from my basic economic principles, I will have to cater to getting elected. Now, this explains partly why there is a contrast between the Narendra Modi government's first term and the Narendra Modi government's second term. You will find in the second term that there has been less of an emphasis on cutting down on subsidies—union government subsidies—in food, fertilisers, and fuel. You will find that there has been a greater degree of emphasis on capital expenditure driven by the union government and not by Public Sector Undertakings (PSUs), because the PSUs weren't delivering. You will also find that there is a relatively lesser degree of emphasis on privatisation, and all this investment which I am sure is a transient phenomenon and will recover.

I am nearing the end. A few weeks ago, Shekhar Gupta wrote a piece in the Business Standard. The sum and substance of the piece—and I am not being unfair to what Shekhar said—was that to understand what the Narendra Modi government is doing, one should read the books, the speeches, or the writings of what drove its ideological underpinnings. It didn't say this, but we should read a little less of Milton Friedman or Hayek or whoever it is, and try and read what went into the formation of the BJP and all its different incarnations. It's an obvious enough point. Not worth a column. But it is a point that sometimes we miss. And you must realise that while trade and investment are linked to each other, the ideological underpinnings of the BJP, going back to even before Independence, they were based on *Swadeshi*. So, the first one of the items to be discussed at this conference is industrial policy. The first industrial policy resolution in India of 1948 was essentially drawn up by Dr Shyama Prasad Mukherjee. And Shyama Prasad Mukherjee was not only identified with a fairly liberal policy resolution in 1948, he is also identified with the Chittaranjan Locomotive Works, the Sindri fertiliser plant, the Damodar Valley Corporation (DVC), and Hindustan Aircraft.

Shekhar Gupta mentioned Deen Dayal Upadhyay. But there is much more than Deen Dayal Upadhyay. That *Swadeshi* strand is there, was there in the writings of not only Mahatma Gandhi—and I am not only talking about *Hind Swaraj*—but also Savarkar. It's there in the writings of Dattopant Thengadi, who wrote a book in 1995 called The Third Way. It's there in the concept of "*Antyodaya*". So, to understand what's happening in India, we must remember this Third Way. It's never going to be the market, it's never going to be the state. Let's understand that the emphasis is not just on tariff reduction for the sake of reducing tariffs. There is a separate argument there about unilateral reduction in tariffs leading to my losing a bargaining chip. There is a separate argument there that tariffs have become completely complicated, particularly the regional trade agreements. I don't really know what is the finished good, what is the raw material, the basic good. And all the effective rates of production have gotten completely messed up. That's fine. But there is an emphasis on Foreign Direct Investment (FDI) and "Make in India". There is already evidence that the Phased Manufacturing Programme, PLI, has begun to work. After many, many years, India is becoming part of the global supply chain in manufacturing.

So that: reduce the malign and increase the benign, welfarism, liberalise, privatise where you can, that is essentially the building block of everything that this government in the earlier two terms, and in the possible third term, will emphasise. Let me end with the following.

Today is the 1st of March. What do we remember the 1st of March for?

We might remember the 1st of March, specifically March 1, 1946, for the nationalisation of the Bank of England. One might criticise this government, particularly in the second term, for depending too much on the state at the expense of the markets. It is valid. But the 1st of March also happens to be World Civil Defence Day, which is not just about civil defence as we understand it. It's also about mitigating risks and disasters. And much of what has happened in the post-COVID world, is a lesson for India. That of many things that India must do, and I am sure Dr Jaishankar will also talk about this in a slightly different kind of way, is that, India will have to pursue its own interest. India will have to do it its own independent way. India will have to do its own little bit whether it's in foreign policy or economic policy, to guard against the risks. To guard against possible disasters. And then there is an uncertain world; in this uncertain global world, the dangers of those risks, the dangers of those disasters haven't completely gone away.

Thank you very much.

1 'National Self-Sufficiency', John Maynard Keynes, The Yale Review, Vol.22, 1933


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Keynote Address

Mari Elka Pangestu

Your Excellency, Minister Jaishankar, Mr Vikram Singh Mehta, Chairman of CSEP, and co-chairs of this conference, Rakesh Mohan and Danny Quah. Good evening, everybody, Namaste.

I would like to thank the co-chairs and the conference organisers for inviting me to this very beautiful place—Neemrana. Even though it is, like the world we are facing now, very difficult to navigate around, with guidance and collaborative efforts by finding people to go to this location together, we can start our evening tonight!

It is an honour for me to share my thoughts on this very important topic: how India's engagement in Asia can play a role in the context of today's challenging situation. I am actually in awe of this audience today because, as Rakesh said earlier, we have very senior and seasoned participants at this conference. So, I am in awe because I must try to be visionary and share thoughts about what we need to do moving forward.

I would like, foremost, not just to talk about the challenges but, most importantly, I would really like to focus on the opportunities for India's engagement in Asia and, I would say vice versa, Asia's engagement with India.

Before I begin my remarks, I will start with a caveat, that what you will hear is probably a rather biased view because of my background. I am a trade person, so that's my background and my experience. And for the last 30 years I have been working as an academic in track two; as a policymaker in my own country and most recently in a multilateral development institution; on trade, investment, and development in the national Indonesian context in international debates and regional debates; and in the shaping of the regional architecture, but also as a policymaker. So, probably what I am going to say may not necessarily be visionary, but hopefully I can offer what I would call a pragmatic, realistic, constructive, incremental approach. In other words, there should not be one approach. There are many approaches. But we have to be pragmatic and realistic. And we cannot ignore reality, as the Minister just said. So, I am going to frame my remarks with the before, the now, and the after.

It will be self-evident why I am calling it the before, the now, and the after. I will start with the before. The before is really about the fact that if you want to figure out what you should be doing to respond to these new realities, and the role of India's engagement in Asia—and vice versa—we need to recall history and what shaped development in the past and the lessons we learned. And whether any of it remains relevant. Some of you may argue that some of this is not relevant anymore. But I would like to argue that some of it remains relevant.

First of all, we can go back to history when we had the tariff war. The United States imposed an additional tariff of 20% on imports in 1930 through the *Smoot-Hawley Act,* which led to a tit-for-tat, as referred to already by President Tharman. This led to widespread tariff retaliation and tariff wars, leading to a global trade slowdown, which contributed to the outbreak of the Second World War.

The tit-for-tat tariff war exacerbated and prolonged the Great Recession. We had ratcheting up of tariffs, restricting global trade, and a whole fragmentation of global trade, which led to the Bretton Woods conference. All of you know this very well, but I just wanted to remind us that we don't want to go there. And we don't also want to reinvent the Bretton Woods institutions. Whether or not we need to improve them, to revitalise them, or to reform them, the answer is a resounding yes.

One of the G20 results of India's presidency last year was the recommendations related to the evolution of the multilateral development banks, for instance. But we are not about to dismantle what has worked in the past. What we really want is to prevent the kind of crisis that happened in the interwar period.

I just want to reflect now on the Southeast Asia and Northeast Asia experience, which was often termed at that time as the "East Asia miracle". I think all of you are very familiar with that. Let me just summarise it in a couple of words. It was based on a labour-intensive, export-oriented model, going from import substitution to a labour-intensive export orientation, removing and reducing restrictions on trades and investments, special economic zones, incentives, and tariff liberalisation. I think it was at lunchtime that the Chair of the Economic Advisory Council mentioned that we shouldn't be doing trade liberalisation for the sake of trade liberalisation. Totally agree. So, the role of trade liberalisation at that time was really to increase competition and diversify these economies, like Indonesia, to diversify away from its dependence on oil and gas, and that led to the regional production networks that happened in Asia: in Southeast Asia and Northeast Asia, the flying geese pattern, and so on. This was the model of development that existed at that time. But it didn't sit on its own. It sat within international commitments: the ASEAN Free Trade Agreement; the commitments in WTO in 1995; APAC, as well as others that are known as the encouraging forces that framed the reforms. Some of them were encouraging; some of them were punitive in the sense of conditionalities in the IMF's letter of intent. But they drove and framed the reforms, leading to growth.

So, this growth model grew in an environment where these countries reformed with the framework of international commitments and within a regional setting under the influence of "peer pressure" or by way of countries competing with each other in a positive way and learning from each other. That was part of the rationale of ASEAN. There was a lot of debate on industrial policy even then. Korea adopted it, Japan also did to some extent, Northeast Asia adopted it to a greater extent than Southeast Asia did.

We will have more discussion on this in the following two days.

But why did Southeast Asia not use industrial policy much? Mainly because some disciplines already existed. For example, at the WTO, there were disciplines on local content requirements and investment and trade-related measures that existed at the time when we were just shifting from import substitution to export orientation. Other than the discipline on the use of industrial policy due to WTO commitments, there were emerging lessons about the effectiveness of the use of industrial policy at the time which led to the conventional wisdom at the time about limited use of industrial policy. The main lessons learned were that effective industrial policy is one which is well-targeted in terms of sectors or companies, transparent in selection and allocation, is based on performance requirements, and should be monitored and reviewed with a sunset clause if it involves subsidies or incentives. A major problem is transparency, and I am going to quote Chatib Basri, who always says, "The government is bad at picking winners, but the losers are very good at picking the government."

We then had the Asian financial crisis, and that is where the so-called Washington Consensus broke down. And we recognised that the exports-oriented model of development is necessary but not sufficient.

You need to have good institutions, governance, a level playing field, and continued investment in infrastructure and human capital. You need to also address the distribution issues. I think we have heard about all these themes from previous speakers.

As the Minister mentioned already, during the post-global financial crisis time, globalisation was questioned. When I was a trade minister, I always said I was not just the trade minister but that I was the trade and development minister. Trade is a means for development. It is not enough just to have trade policy. You need complementary policies. In fact, international trade theory, whether it is Stolper-Samuelson or Heckscher-Ohlin, will tell you that there are losers and gainers in free trade, but it will only work if the gainers will compensate the losers. That is in theory, but in reality, that doesn't happen. The complementary policies needed to ensure distribution are what has been missing, leading to the questioning of globalisation.

Okay. Maybe I have spent too long on the past, but I wanted to remind everyone of what has happened before, just because some elements of what happened before need to be remembered when we are talking about the after.

How about now? What is the "now"? I am not going to repeat what the Minister and Tharman have described very eloquently. We are facing a huge amount of uncertainty in a post-pandemic world where there is a global slowdown in economic growth. All predictions are saying that the world economy and developing countries are going to grow below their trajectory, except India. Southeast Asia is going to grow at a lower trajectory but at a higher rate than many other regions. So, in other words, India and Southeast Asia are in a very good situation to capture this growth that will happen in the future. We all know about the uncertainties due to the conflict, the war, the COVID-19 pandemic, and disruptions to the supply chains, whether it is energy, food security, health, and critical goods such as semiconductors, and so on. So, the prediction is that we are not going to have fewer shocks. We are going to have more shocks. So, therefore, the notion of resilient supply chains, not just efficient supply chains, becomes key. And then you have three other challenges.

One is, of course, the climate crisis; second, the challenges associated with digital and AI technology; and, most importantly, are the uncertainties around the global economic order. We are seeing increased global disorder—great power competition, multipolar

competition—and the absence of the US, which had been the main safeguarder of the multilateral trading system of the post-Bretton Woods era. Instead, we are seeing unilateral actions, interventionist actions, by advanced countries, mainly a lot of that coming from the US, where they are using tariffs as import substitution and using it to "make America great". A trade war has taken place because of tit-for-tat, with retaliation from China. When the US imposed tariffs, China retaliated with almost the same amount of tariff lines and tariff levels.

The data from five years of the trade war shows the expected result: that exports from China to the US went down. Likewise, exports from the US to China went down. But the bystanders or the third countries increased their exports to China and the US, as well as to the rest of the world, especially in production where there are higher US or Chinese tariffs. So, in other words, a relocation has happened. The countries that benefited were Mexico, Taiwan, Korea, Vietnam, Thailand, and, to a lesser extent, Malaysia and Indonesia. India is not there yet. India may get there if we become more forward-looking. Why did those countries benefit from the relocation?

That is because they were already part of the global value chain. It is important to understand that the direction of relocation is being termed as "lengthening the supply chain".

Therefore, the US may be importing from Vietnam, but, in fact, the product is, or a lot of the inputs are, actually coming from China. Indeed, if the US's desire was to delink or decouple from China, it is not happening with these policies. If the objective is to decouple from China, then there could be further policies down the line by the US to also de-risk from the inputs and components coming from China even though the production is not in China. This is already happening, as we know, with the IRA and the *Chips Act.* Preliminary data suggests that for at least 23 products in the IRA and *Chips Act,* which was enacted in 2022, there is already a decline in electronic and machinery exports to the US from China and ASEAN. There would probably be more impact if we looked at the green industrial policy.

All these trends are as the Minister also described very well, that there is a redefining of the supply chain based on resilience, based on security, and not just on economics.

Let me now close with the after. So, what does this all mean? What are the implications of all this? I don't know the answers as we are facing an evolving situation, one in flux. So, I am just going to pose questions and try to offer some answers. I believe that there will be two types of responses. Some of it is already happening. One, you will see a diversification of the supply chain, where you try to reduce the role of China within the supply chain. It would not be possible in the short term, or even in the longer term, to decouple totally from China. The other response is to develop a totally new supply chain or a different supply chain that doesn't include China in it at all. So, you would have two supply chains: one supply chain that would involve the region and non-US and non-EU markets, where the participation of China is not an issue; another supply chain for exporting to the US or the EU, where you reduce or attempt to eliminate the involvement with China.

These two trends are not mutually exclusive, and the question is, what does this mean, and how should we be navigating this? I will close with my own take, my own view based on my experience, which may be wrong or overtly optimistic.

First, what should be the national response? Obviously, whether it's SEA or India, you would want to be part of those diversified supply chains. Diversification is the best response to address risk and resilience and have trusted supply chains. Given the geopolitics, for the US, and to some extent for the EU, diversification means deconcentrating from China. This is the reality, and to attract investments that are part of the diversification and reshaping of value chains, countries need to have the enabling environment to attract investments. This is old wine in new bottles, as was mentioned in the concept note by Vikram Nehru.

In other words, the usual policies of good investment climate, infrastructure, and human capital still apply if you are trying to attract investments. But you need to learn from the lessons that we just talked about in "the before".

As for Southeast Asia, another challenge is the premature deindustrialisation that took place in Southeast Asia, with the exception of Singapore. That is, a number of the SEA countries didn't progress to higher value-added—to more technology- or capital-intensive, or skill-intensive—industries after the labour-intensive export-oriented industrialisation. There were various reasons, including resource-rich countries with resource booms.

Therefore, this time round, if countries want to deepen supply chains, develop complementary and component industries, then industrial policies need to be designed not just for certain sectors but for building the ecosystem, institutions, and a forward-looking process of continued development and upgrading. Furthermore, recalling the pushback against globalisation, complementary policies are needed to ensure the benefits of globalisation are distributed.

This conference is about the resurgence of industrial policies that advanced and developing countries are enacting to attract certain sectors. We are seeing Japan's industrial policy in attracting Taiwanese and US companies in the semiconductors industry. We also just heard the Minister share the Indian experience in implementing industrial policy in India. The US and EU are also conducting industrial policy to develop the semiconductor and low-carbon technologies. Many developing countries, including in Southeast Asia, are also following suit.

In the "before", there has been a pushback against industrial policy, especially by advanced countries at the time. The reality is that now we see a resurgence of industrial policies in many countries, then we need to be realistic, and that, politically, we will see countries, political leaders, and policymakers implementing some form of industrial policy. Therefore, what is important is to recall the lessons from "before". That is, there has to be transparency, performance requirements, sunset clauses, and that it is about building the ecosystem and institutions. Industrial

policy for a certain sector does not stand on its own. Otherwise, one could end up with a semiconductor industry, but it is limited to packaging and not necessarily going upstream to develop the chips, for instance. Similarly, you may have the crucial critical minerals for EV batteries, but to advance from refining to processing and manufacturing of EV batteries and vehicles will need the development of the ecosystem.

Deepening your industrial supply chain will require innovation, investment in infrastructure, and investment in human capital. This needs to be part of industrial policy so the ecosystem develops. One should also beware of the risks and that supply chains are not about making everything in your country. The only way the supply chains can really work—in the past, now, and in the future—is if they are globally competitive. That means scale. This leads me to my next point.

In the context of India in Asia engagement, I would hope that we can develop regional supply chains based on the regional and bilateral trade agreements and existing value chains that already exist, in which you may not be able to totally decouple from China but could reduce the role of China. You can think about regional supply chains that involve critical minerals, EV batteries, EV vehicles, semiconductors, and also low-carbon technologies. Such a regional approach is better than the beggar-thy-neighbour, crowding out type of industrial policy that President Tharman mentioned in his remarks. A regional value chain will also lead to the spread of competitiveness and innovation across the participating countries, companies, suppliers, and human capital who are involved.

Let me now close with what can and should be done at the regional and global levels.

Southeast Asia does not want to get caught up between China and the US, and the intention is to navigate the geopolitical tensions, continue to be able to engage with the US and China, and deepen our regional integration because it would mean that ASEAN and the wider East Asia region can play a key role in the reshaping of the global value chains, remain competitive, and ride the waves of geopolitics and geoeconomics. ASEAN should take the lead to strengthen regional economic integration, such as strengthening the East Asia Regional Comprehensive Economic Partnership (RCEP), as well as consider a more comprehensive regional security approach.

India is in a similar situation, where you don't want to be caught having to take sides, and, actually, I would like to compliment India, as she has been very good at managing and benefiting from all these tensions so far. However, in line with the theme of this conference around India's engagement with Asia, I would like to advocate that we should enact what Prime Minister Modi calls "Act East". For instance, we could make the review of the ASEAN–India FTA in line with the development of a regional value chain and make the FTA more ambitious and simpler to implement. An even better outcome if India could reconsider joining the RCEP. Whilst we recognise this is a difficult issue for India, I still believe that this is the way forward if we are to have a strengthened Asia region, which benefits from and realises the opportunities of the reshaping of the global value chain in the geopolitical reality that is unlikely to change any time soon.

Another forum, which is not an FTA, is the IPEF (Indo-Pacific Economic Framework). Its importance is that it is a forum that involves the US, Australia, Japan, Republic of Korea, India, and six ASEAN countries, besides Fiji and New Zealand. IPEF has a focus on trade and resilient supply chains and, whilst it is not an FTA, can still provide a forum for discussing principles and cooperation, especially since it is being driven by the US.

There are also bilateral FTAs that a number of Asian countries have with the US, EU, and Japan. Given that "friend-shoring" and "allies" are being defined as those countries having FTAs with the US, those countries that have bilateral FTAs with the US and that are also part of the regional agreements can be part of the strategy for regional resilient supply chains. Another example of a bilateral agreement is the limited minerals agreements with the US to access the subsidies from the IRA, which Japan was able to get agreement from the US. Indonesia and the Philippines have requested to negotiate a similar limited agreement with the US, but so far, there has not been a positive response.

Finally, what should be the role of Asia in the global forum? Can ASEAN and other (non-China) Asian countries, as a meaningful middle power, play the agency role to shape the global agenda, as President Tharman has called for? There is the opportunity to do so. For instance, when Indonesia chaired the G20 in 2022, it was possible to have a communiqué despite tensions around Russia's invasion of Ukraine and the pandemic. Despite tensions between the US and China, the pandemic fund was launched that year, where both of these countries, along with the EU and many other countries, contributed to the fund. During India's presidency, there was a G20 task force to reform the MDBs, of which Montek (Singh Ahluwalia) was a member, and its recommendations are being adopted by the MDBs.

There are other areas where we can shape the agenda, such as the WTO. Unfortunately, there is not much traction around the WTO, and there is not much news on the WTO Ministerial Meeting that is happening right now, and there appears to be an underappreciation of how important the WTO is. I believe it remains important because the multilateral trading system is still the anchor to a rules-based and fair-trading system. Asia and ASEAN can play a role firstly in ensuring that there is continued momentum in whatever progress can be made currently in the WTO, such as the two or three things under negotiations right now: the e-commerce agreement, which speaks to the point raised earlier by the Minister about building rules, norms, and trust in the digital economy framework; another area is the investment facilitation agreement, which is just like the trade facilitation agreement, which can shape the policies and kinds of standards and norms that are needed to facilitate trade and investments and is very much related to the point made earlier regarding national policies being able to attract the investments.

Asia and ASEAN can also play a role by playing a leading role in the longer-term agenda of completing other key negotiations in the WTO, such as the agriculture negotiations, and the reforms of the

WTO, such as addressing subsidies, the dispute settlement process, addressing new issues to ensure the continued relevance of the WTO, and institutional aspects related to its processes.

In other words, what is being advocated here is a multiprong strategy—a collective approach on the bilateral, regional, and global front. This is what I call constructive incrementalism, and as long as we are doing it as a collective approach, this should enhance the positioning of the Asian region and help deepen our regional supply chains for the benefit of our own region, as well as access external markets, especially the US and Europe.

So, my main point is really very much what Prime Minister Modi said: we need to cooperate to find solutions that benefit us and with an Asian mindset. We have the agencies to shape the solutions.

There are different channels through which that can be done. The best way to face this very hostile external environment is to make this strategy actually more, not less, advanced and prudent.

A final point, as part of what I would call this collective and constructive incrementalism, is the role of non-G-G interactions and dialogues, such as this conference organised by CSEP, track two, and track 1.5 processes. These kinds of processes are crucial in a world that has become more complex, in a state of flux, and filled with uncertainties, as well as countries like ours in Asia being pulled in different directions by the major powers. The better solution for us is to act collectively rather than beggar-thy-neighbour or nationalist industrial policies.

President Tharman also reminded us about the importance of having enough discussion based on evidence and good thinking, which speaks to the importance of forums such as this conference and track two discussions between think tanks and civil society—perhaps in north, southeast, and south Asia, and, of course, India. The hope is that the ideas that emerge can shape the solutions, which, in turn, can influence the ongoing national, regional, and global architecture or processes as they develop.

I myself come from decades of track two processes before I became a policymaker. I must say that what I learnt in the track two helped me as a policymaker. I see many friends and colleagues in the room who have been on this journey together with me in various processes, whether it is ASEAN, Asia-Pacific Economic Cooperation (APEC), and ASEAN Regional Forum (ARF) on security and peace, which have influenced the official processes.

Let me close with a call for us to strengthen the ASEAN and the Asia–India track two processes. We are in this very challenging world, and there is opportunity where we can shape the solutions and influence the processes. We hopefully can have a dialogue with the policymakers and understand their national political constraints as well as the geo-economic and geopolitical constraints. Let me close there with a big thanks. I would hope that what I have been able to say or share today—may not be visionary, but it is reflecting on my perspective, the Asian perspective—on what we could do more of between India and Asia. Thank you very much.

Opening Session

CONFERENCE THEME

Danny Quah

We have talked about all these issues, and it's absolutely critical that we do because that sets the background for what we—as a group of scholars and practitioners—come together to solve: the challenges that we need to solve. First, I want to say that when we invited Mari Pangestu and yourself, Your Excellency, to give these speeches, we knew that you would ignite the audience. We knew that this audience was passionate about the issues that we had come together to talk about. But we didn't know that this audience would be so excitable that we ended up exposing both of you to defending your nations' practices of international democracy, the international agencies you joined, the invisibility and visibility of the actions you take, your non-alignment credentials—all of which have now been fully exposed and discussed. For that, we are very grateful. But we also hope that doesn't mean that you will feel a certain animosity towards us when we invite you to come in again next year.

Talking about these issues, of course, brings us back to why we are here. And I thought that there were two dimensions to the conversation about why we are here. It came out both in President Tharman's speech and in Your Excellency and Mari's conversation. One is why India in Asia. The second is why industrial policies at this point.

Why India in Asia has been, of course, challenged by several people in the audience. But I thought that the reason we come together in meetings like this is precisely to hash out how a group of nations, all of whom need to look out for their own self-interest, can nonetheless come together and still produce an outcome—a collaborative kind of outcome of the kind that President Tharman described. How do we get nations to collaborate when they, at first, superficially, seem at odds with each other, or at least are not minded to cooperate?

So, I think about this as an exercise in inadvertent cooperation. We are trying to design conversations, mechanisms, discussions, and meetings like this to bring about inadvertent cooperation. Nations that don't seem to naturally find common cause, but nonetheless will behave in such a way that produce that kind of collaboration that we need when we meet great global challenges of the world. I don't think it's a pipe dream to do that because, after all, many people have pointed out it is not the benevolence of the butcher, baker, or brewer that makes them put dinner on our tables, but their self-interest. And that's the kind of self-interest—that inadvertent cooperation—we are trying to bring about through conversations like this one.

How do we do that? It will emerge over the next two days but also over the coming years. So, the question of why India in Asia, or why all of us coming together, needs to be addressed against that kind of background.

Let me conclude on why industrial policy. For some people, thinking about how the world has gone entirely mad over industrial policy is a mistake of the highest order. I am thinking about how two wrongs—first in industrial policy, and then second in responding—can make a right. And we are here to think through how these two paradoxical wrongs making a right might be correct. It might actually be the right thing to do. We are trying to work through the contours of how that happens. I know that many of you are excited to do that. Taka already made his presentation for Sunday, just a few minutes ago. So, we are here to try and work out those passions and enthusiasms against the background of, I think, committed realism that Your Excellency, Mari, Tharman has laid out for us to follow accordingly. I am so glad that all of you are here. I am so looking forward to the conversations we are going to have.

Opening Session

CONFERENCE THEME

Rakesh Mohan

A warm welcome to all of you. First, to the new delegates—thank you very much for accepting our invitation. Second, to those who are coming for the second time: we are grateful to our Honourable External Affairs Minister, Dr Jaishankar, for gracing this occasion. I hope that this means that he will start looking more East than he has been, even though, of course, he spent the good part of his career—certainly more than me—in the east as High Commissioner in Singapore, as Ambassador to China and other countries. It is indeed very kind of him to come and be with us. If you read the media and the newspapers, you will know how busy he is. So, for him to make this road journey from Delhi and spend an evening and a night with us is something exceptional. Thank you very much, Minister. And, of course, Mrs Kyoko Jaishankar has also come to be with us. A very warm welcome to you. I'll tell you a secret: the reason he is here is that she had said she had never been to Neemrana. And so, she wanted to come. That's the weapon I used to get him here.

We are most honoured to receive a message for the conference from Prime Minister Mr Modi for the second time. He was gracious enough to send us a message at the first conference last year, and now at the second conference, and I hope he keeps up this performance. Second, we are also really honoured to receive a message from President Tharman Shanmugaratnam, President of Singapore. He honoured us by giving the inaugural address last year. This year, he sent a message. I'm proud of getting a message from him. These are notes on how we are making progress in closer relations.

I am also very grateful to Mari Pangestu, former minister from Indonesia, who is also a former Managing Director of the World Bank, who will give the keynote address this evening.

Hon' Minister, Mari, Danny, Vikram—we are very grateful for you to be here.

Dr Jaishankar, the address you gave—even more, the answers to the questions—I think have really enlightened us and have given a fantastic start to this conference. I should also add, I was a member of the first National Security Advisory Board, which your father designed and ran. So, I am grateful that you are here.

I had mentioned in my background note that the global economy's centre of gravity is moving from the North Atlantic to the Indo-Pacific, after about 250 years or so. So, we are living through a major epochal change in the world. That is why we thought of having this meeting last year, this year, hopefully another 19 years. We need to be aware that between China, South Asia, ASEAN, plus other Asian countries, we are about four billion people. Our per capita incomes range from around US$1,250 per capita to US$12,000. I am excluding Korea and Japan from that range. So, if these four billion people—whose average income today I think is coming to around US$4,000 or something—grow even 4% a year for the next 10, 15, 20 years, incremental growth in GDP and demand will outstrip the incremental demand that the West gave to Asia for the last 50 years for Asia to be able to grow. So, that is what got me to think about getting this gathering together so that we focus much more than we have in the past towards Asia to the East of us. I have nothing against doing business with everyone else. But just to make this important point: we are really living through very, very interesting times; it will become more interesting; and when

times are interesting, they become more difficult. I think the way you gave your speech and your responses tell us that we are really thinking about these difficulties in a very constructive manner.

As you said, we pulled out of RCEP for various reasons—I still feel we must open negotiations again as and when proper, but obviously protecting our national interest. That goes without saying. And if RCEP wants us, they must look at our interests. And so, I would still say, with due respect, that this is still worth thinking about because of the long-term issue, the future of the global economy—for no other reason; for *our* interest, not their interest.

I would like to, at this point, acknowledge and give tribute to President Tharman of Singapore. It was at the Kautilya Economic Conclave in September 2022 that I observed, "He is the only kind of person in his rank who replies to emails personally, within a few hours." So, when I heard that he was coming to the Kautilya Economic Conclave, I wrote to him and said, "If you are coming to this, I would like 30 to 45 minutes with you." He said, "Sure", and fixed it up. I had an hour with him. And he was so encouraging about this. I said, "In which case, you must come for the first one." And he did. So, I just wanted to mention this here because it has really been a great encouragement from him.

Just to come to the theme of the conference... I won't say much. I think Danny has put it very well. I do want to say to all—and admit—that it was Danny's idea of the theme, not mine. I would like to claim it as mine, but it is his. So, thank you for that.

We have all admired the tigerish, dragonish growth of Southeast Asia, East Asia, China, etc. There has been a long-standing controversy in economics and in the economic strategy used by this region to foster high economic growth. There are those who say that such growth and development was achieved because of the industrial policies adopted; and there are others who say this was because of the open economy framework, which opened up trade, etc. So, this controversy has been going on, and it has never been fully answered well—and never will.

Again, the reason for choosing this theme from my point of view is: The West lectured us consistently for being stupid to have industrial policy; now *they* are doing exactly what they told us not to do. I am not saying they are wrong from their point of view today; I don't know. But they are doing exactly what they told us not to do. Therefore, I do feel that, for us in Asia, we need to get together much more to figure out what to do in the future. Not tit for tat, but we should see how we respond to this. That's what this is all about.

So, the question I would like us to address is, in some sense, what kind of cooperation we can think of coming into the future. And that has been addressed in some of the questions addressed by Mari, by yourself as well, and by Tharman. That's one question. Second, how much governmental cooperation and interaction and—as Mari, you said—how much on Track Two, Track Three, Track Four? How much on trade? Again, RCEP, CPTPP, etc., come to mind. How much on FDI among ourselves? Most of the time, everyone is thinking FDI has to do with the West. Much more comes from the East.

One thing that has not been talked about at all in the Asian integration is financial integration. So, the western financial institutions—the usual suspects: Morgan Stanley, Goldman Sachs, JP Morgan, etc.—still dominate here and all of Asia. Obviously, given the Chinese banking giants, I think among us—I have nothing against Chinese banking giants—this is an issue we are not discussing in this conference. But I think that it's also an interesting issue coming up.

In brief, what can be devised in terms of an Asian strategy in which India is an integral part on a cooperative basis? And how do we learn from each other?

We will appreciate ideas from you towards the end, on how we can take this activity forward for the next 19 years. Also, more cooperation from institutions. Danny agreed this year to be the co-chair. He said we should have a co-chair from another institute from another country every year—because I am very happy if *you* continued there. But I am just giving you his idea. So, that also is something to keep in mind.

Should we keep it here in this lovely location? The great thing about this is the lack of good connectivity. So, we can lock you up in the fort, and we will ply you with drink and food—and, of course, with great thought and wisdom, and so on. That's why I wanted to do this. Danny, we talked about having it in Singapore. I said, "No, there is no good place in Singapore, very boring." But if you can think of going to some place with less connectivity, that will be terrific. If you can think of these things, towards the end, we will come to some conclusion.

CSEP and Asia

Laveesh Bhandari

A warm welcome again. I stand here today to provide you with a background of what CSEP is all about, and how this translates to and can help articulate a vision for this conference. The history and transition of CSEP have already been shared with you by Vikram yesterday. We have grown fairly rapidly and are today amongst the largest multidisciplinary think tanks. A lot of this has happened when I was not around, but I have seen glimpses of it. I must acknowledge that it's not easy—and many of us here are from the think tank world—it's not easy to put together a think tank such as CSEP. It must have required a lot of effort, but more importantly, there is a certain vision that has gone into CSEP. There is a certain sincerity that has helped translate that vision. I must acknowledge Dr Mohan and, of course, Vikram Mehta, for having sustained and led the foundation for what we hope will be a great institution in the coming years.

CSEP, as I have already mentioned, has some characteristics that help it stand out within the world of think tanks. It is a multidisciplinary think tank with a focus on scholarship, conducted in an atmosphere of independence and integrity. We have scholars from across economics, foreign policy, engineering, law, people with experience in bureaucracy and technocracy, industry, and academia. That is what we are trying to do here—translate a very complex world with the help of a whole range of inputs coming in from different domains. Of course, it is impossible to have all the required expertise within CSEP. So, we look at partnerships, both at the organisation level and at the individual scholar level. This is helping facilitate a lot of our work in the last few years.

I must say that scholarship stands at the very core of what we are trying to do. The environment today is changing very rapidly, and in many areas, we really don't have much documented evidence to go by. So, how do you undertake evidence-backed independent research? It's an important challenge and a serious one for all of us. One way in which we can do so is to leverage our relationships and look at global experiences. Across not just the Global South, but globally, there have been a whole range of experiences that we need to access. And more so in Asia—like India, the whole of Asia is marked by significant diversity and heterogeneity. And like India, Asia has been able to manage that diversity and work together, bringing in a certain cooperative ethos which has helped it move forward. Can India, which has also done the same within itself, engage better? These are some of the questions that have been at the genesis of this conference.

I have already talked a little bit about the multi-disciplinarity. I won't talk much more about the work that we do here. I will just mention the three or four major areas, the larger pillars, around which we work. The largest group of scholars works in a domain that we refer to as energy, natural resources, and sustainability. They work on a whole range of areas from decarbonisation, the transition process, oil, gas, renewable energy, and increasingly they are looking not just within India but also the region. We are looking at issues of finance, looking at multilaterals and how they can access or enable the flow of finance to the developing world, among other areas including a whole range of issues related to the transition and sustainability.

A second group of scholars works on growth and development, which again covers a wide area. We have set up a health system research group about two years back. We have now recently

started a group on education, skills, and community development. We believe that this has been an important area in which India has not really performed as well as it should have, and there is much to learn, not just from within ourselves but across Asia and across the world. Some of our scholars also cover macroeconomics, growth, and finance as well. Their focus has been on economic growth, macroeconomic stability, financing, public finance, fiscal architecture, etc.

Finally, the third group of scholars works on foreign policy and security studies. We have, until recently, been working mostly on countries in the neighbourhood of India, but increasingly we are undertaking more and more scholarship on the region and not just around India. Our interest and scholarship now span Africa and all of Asia.

I could go on about the kind of work that is happening, but that would take too long. So, I would like to briefly share that it is really critical that Asia and India are able to engage, understand, know, share, and inform each other, and that essentially lies at the core of this conference. We have all heard the many different views yesterday, but there was a certain consensus: Trade is no longer just an economic issue. There are issues of technology, politics, and indeed, there are issues of international law and so on. It is only through multi-disciplinarity and working across borders that we believe we will be able to come up with the coherence that global and regional cooperative solutions require.

So, with that, I am confident that the interactions will animate these objectives and foster faster and deeper relationships. Thank you very much.


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New Industrial Policies: Asian Perspectives
SHIVSHANKAR MENON
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SESSION 1

Geopolitical Rivalry and Use of Industrial Policy as a Strategic Weapon

SESSION NOTE

Shivshankar Menon

Southeast and east Asian economies are perceived to have practised industrial policy and were criticised for it by economists and other policy makers and influencers in some major advanced economies. Today those same major economies have initiated 'new' and strategic industrial policies of their own. Subsidies, trade restrictions and the like are now the norm. And the motives are primarily political and strategic, often linked to national security, as are the consequences of their shift in policy.

Economic policy in advanced economies, including industrial policy, has never been so politicised or weaponised as it is today. While some international economic issues have always been dealt with politically — regulatory issues such as maritime security, negotiations on cybercrime, or regulation of the internet — it has not hitherto been common that industrial policy or broader economic policy is used as a geopolitical tool to produce political outcomes even at economic cost to oneself and one's allies and partners. The weightier hand of the state in the resurgence of industrial policy thus differs from earlier eras, and, as a result, has consequential geopolitical effect.

This is a two-way relationship: geopolitics now drives many industrial policy decisions; and industrial policy has wide-ranging geopolitical effects. This session will examine whether and how this is so, and whether this is sustainable.

Great power rivalry today drives decisions that 20 years ago would have been taken on primarily economic grounds. The curbs that the US and its allies have imposed on semiconductor chips and the equipment for their manufacture are the most obvious examples. So is the premium placed on on-shoring or friend-shoring global value and manufacturing chains to bring them under one's own political control in the name of supply chain resilience. This is resilience against political factors, not economic; the triumph of just-in-case over just-in-time.

Another such instance is the drive to control strategic materials and raw materials for critical industries to lessen reliance on geopolitical rivals, such as

the search for lithium and other 'green metals'. Indeed, the definition of what materials are strategic or critical has expanded with new considerations, like renewable energy and changing demand, prompting the search for politically safe sourcing. Currently, the United States and the European Union import 80 per cent and 98 per cent of their critical mineral needs, respectively, while Japan imports 90 per cent of its renewable energy transition-critical minerals.[1] The supply of these materials is concentrated in China, the leading processor of cobalt, copper, nickel, and lithium, even when they are produced elsewhere. Developed countries have introduced industrial policies such as re-shoring, friend-sourcing, subsidies, and so on. The European Union has proposed legislation – the Critical Raw Materials Act[2] – which requires members to reduce their dependence on China for critical minerals from 80 per cent to 65 per cent, with a target to increase supply from within the European Union to 10 per cent. Japan too has policies to relocate Japanese-owned facilities from China to southeast Asia, such as the 2022 Economic Security Promotion Act. In the last decade Japan has reduced her dependence on China for rare earths from over 90 per cent to around 60 per cent.

It remains to be seen whether these policies increase investment in producer countries in maritime Asia like Indonesia, Australia, and Malaysia, and relocate processing and refining capacity to them and their resource-poor neighbours. Indonesia has already taken legal steps to insist that certain critical raw materials produced in the country also be processed there. The record so far is inconclusive for both developing and developed countries seeking to move processing and refining to their own soil. In geopolitical terms, these trends further tighten the grip of advanced economies on commodity and mineral markets critical to the survival of producer economies, and accentuate the concentration of economic power in the hands of those actors who are militarily and politically dominant.

A Mixture of Geopolitics and Economics

Great power rivalry—particularly that between China and the US, but also the security dilemmas between China and many of her neighbours like Japan and India—is putting politics in command of economics in maritime Asia. The balance of power and politics in maritime Asia has been considerably affected by China's 'dual circulation' and 'common prosperity' policies (designed to increase others' dependencies on China while reducing China's dependencies on the world). So have US restrictions on trading with, investing in, and transferring technology to China and China-related entities. The US Inflation Reduction Act incentivises and seeks to build US manufacturing in new and renewable energy. The effects on others, quite apart from the damage that China and the US have inflicted on each other, include shifts in DFI flows, trading patterns and, to a lesser extent, changes in GVCs. In other words, the economic prospects for maritime Asia and India are murkier and harder to predict now that they also depend on the erratic trajectory of political relationships at a time of great power rivalry.

The Russian invasion of Ukraine, and subsequent Western financial sanctions on Russia and expropriation of Russian assets, has strengthened trends towards financial fragmentation and a search for alternatives to the US-led international financial system and architecture. While there is little prospect of an immediate replacement for the US dollar as a store of value, the fragmenting effect on payment systems is already apparent. Use of the Chinese RMB by Russia for crude oil payments, the setting up by China of Yuan payment arrangements with developing country banks as in Pakistan, and other alternatives are yet to make a significant dent in the use of the US dollar but are likely to grow.

As a side effect, distrust of the US-led financial system has increased the leverage of regional players and middle powers upon those in their ambit as we see in central, south and west Asia. While Sri Lanka awaited IMF and Chinese agreement on assistance after her default in April 2022, she turned to India for the credits, loans and supplies that the international community could not provide for over a year. Middle powers have used great power rivalry to carve out geopolitical space for manoeuvre for themselves. Industrial policy is one tool, often a preferred one, used by these powers to build spheres of influence of their own.

The domestic political impulse behind newly resurgent industrial policy actions in major economies is largely the self-interest of populist new authoritarian leaders who rely on nationalism for their legitimacy. Politics is increasingly local and nationalist interests or practice of exceptionality by the major powers. Today, domestic politics in the US, China, India, and other countries works against the globalising effects of technology and economic logic. It also complicates foreign and security policy decisions, limiting options and constraining action.

Together these changes in economic policy approaches accelerate existing geopolitical trends. We are not in a Cold War, with capital letters, but possibly in a cold war in small letters—a contest across all domains short of outright direct war between the two most powerful nations. Unlike the original Cold War there is no real contest of ideologies or of two different orders, with both China and the US part of the same economic system and dependent on each other. China and the US are unable to decouple without doing major damage to themselves. Most other states resist being corralled into blocs again. But the resulting polarisation within and between regions, and much fiercer contention for political influence and military advantage, elevate geopolitical risk in this time of great power rivalry in a world between orders.

For over a decade now, that great power rivalry has also made the multilateral system including the UN, MDBs and more recently the WTO ineffective, as evident from their inaction on transnational issues of development, climate change, pandemics, and peace and security. The world apart from the major

1 https://asiatimes.com/2023/08/industrial-policy-wrong-way-to-secure-critical-minerals/
2 https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw- materials/critical-raw-materials-act_en

powers outside the West (sometimes inaccurately called the Global South) seeks alternatives to an international system that has failed their development and economic aspirations and offers no solutions to their issues of climate change, migration, terrorism, debt and economic exploitation. Over 40 countries have sought to be associated with the BRICS, not because it offers an alternative to the globalised world economy and the MDBs of the Western-led economy, but in search of other options.

The alternatives to industrial policy driven by politics promise even worse geopolitical consequences for those who do not wish to be victims of great power rivalry. The costs of Western sanctions on Russia after her February 2022 invasion of the Ukraine have been borne primarily by the global south and Europe, not by the US. Maritime Asia has been affected by second-order economic effects such as rising food, fertiliser, and energy costs and the downside risks brought by the Israel-Hamas war.

Consider also the differing US and EU approaches to climate change. The US IRA, an industrial policy approach, at least offers other economies the creation of a new market and an opportunity, albeit limited, to compete in the US renewable energy sector. The EU suggestion of a carbon border tax is both protectionist and likely to exclude others while affecting European competitiveness in the longer term. In this case, industrial policy is preferable both economically and geopolitically to the alternatives for southeast Asian countries and economies like India.

Three Issues

The question therefore arises how the amalgam of political and economic motives that has brought industrial policy to its new avatar can impact the strategic and geopolitical interests of countries in South, Southeast, and East Asia. How will the transnational issues of the day— great power rivalry, the risks of broader conflict, climate change, development, developing country debt and so on, be addressed in Asia? If so, what foreign and security policies might be successful in so doing? Are there collective security or other approaches which might create a sense of security in maritime Asia that would enable a return to a more open and economically driven set of policies?

Second, has maritime Asia's phenomenal economic growth only resulted in collecting the kindling for conflict, likely involving the great powers? In the last three decades, Asia, led by China, has seen the greatest arms race in history. The accumulation of arms, weapons of mass destruction, and disputes across maritime Asia have heightened the risk of conflict to a level unknown since the Cold War. How serious is the risk of great power conflict in Asia. Or is it proxy war and other forms of conflict that threaten an Asia which has known unprecedented peace for over three decades—a peace that has enabled today's prosperity. What needs to be done?

Third, will this marriage of politics with economics lead to new security and other arrangements in Asia? What new alignments can emerge?

Chairperson's Remarks

Thitinan Pongsudhirak

I want to just start this session with three issues that we discussed last night. First, what is happening in geo-economics and industrial policy in the context of what is happening in the global economy. Second, we heard a lot about 'tit-for-tat'. I want to pick up on that a little bit. Then third, chicken and egg.

To be sure, what is happening is not unprecedented. We kind of think that what's happening in the present is most and more important, that it has not happened before, and that it's most consequential because we have a self-interested timeline with a bias towards the 'here and now'. What's happening, in fact, is what we have seen before. Industrial policy, as we will hear more, revolves around and centres on the role of the state. The heavy industrial policy would be, in the extreme sense, mercantilism, or neo-mercantilism in popular parlance. But, if you look at industrial policy in terms of the state's direction and guidance in managing and planning growth and development, we have seen this before for centuries.

In centuries past, tit-for-tat was rooted in classical mercantilism. In the last century, we have seen mercantilism leading up to the First World War and then more mercantilism in the interwar period culminating with the Second World War. Then we had a long stretch of post-war order – the so-called liberal international order – ushering in a long period of liberalisation, peace and prosperity. But we are going back in time again with the so-called deglobalisation, decoupling, and de-risking.

I will bring up just two examples of how it's happened before. We have had decoupling before – a systemic decoupling. It was between the US and the Soviet Union. In that decoupled world, we had two distinctly separate political and economic systems between the US-led West and Soviet-led communist bloc. In the end, the US prevailed because the Soviets could not keep up with the West's capitalist-fuelled prosperity and security maintenance from an arms build-up. In the 1980s, there was literature about 'Who's Bashing Whom?'. The US and Japan were in a tussle over strategic trade policy. The US accused Japan of neo-mercantilist trade practices and responded with protectionism. Ultimately, the US prevailed because Japan conceded, owing in no small part to the Japan-US treaty alliance which came with a nuclear security guarantee.

Now, we have come to another confrontation where the US is locking horns with China. And we can see that we have had tensions and conflicts over trade and technology. This is now a geo-economic war between the US and China. It's also a different kind of superpower confrontation. The conflict between the US and the Soviet Union was military in orientation. It was military rather than economic conflict, fought in proxy wars in countries in the Third World. It was a direct, head-to-head confrontation but fought indirectly partly due to mutually assured nuclear deterrence. In the US-China conflict, the confrontation is direct, however, it is not military but economic in nature.

So now we have gathered here at the beautiful Neemrana Fort for a conference pivoting on industrial policies because of our concerns about a tit-for-tat escalation and spiral beyond our control. Personally, it is neither a good sign nor a good omen that our conference theme is about industrial policies. Indeed, we are going in the wrong direction. Unless something changes fundamentally and drastically, we may be seeing a recurrent past coming back to haunt us with trade wars and protectionism, perhaps leading to military conflict. And finally, we heard from the foreign minister about politics and economics–which one comes first? Which one is paramount and has supremacy? Here we have geo-politics and geo-economics–which one comes first, chicken or egg? I think we talk about geo-politics a lot but perhaps it is the geo-economic underpinnings and drivers that have led to this geo-political tension, confrontation and conflict.


ANOOP SINGH

PAPER 1

The Risk of Conflict in Asia

Bilahari Kausikan

I was tasked with assessing the risk of conflict in Asia. The use or the threat of the use of force is an inherent characteristic of international relations among sovereign states. Therefore, we can never say that there is no risk of conflict in Asia or anywhere else.

Almost 70 years ago, Karl W. Deutsch introduced the idea of a 'security community' into the study of international relations. He defined 'security community' as a group of states that had become integrated to the point that there was real assurance that members of that community would not fight each other physically but would settle disputes by other means.[1]

By Deutsch's definition, the only security community is still the one he identified close to 70 years ago – the North Atlantic Area. Even here, the periphery of the North Atlantic – the Balkans and East Central Europe, Africa, and the Middle East (or West Asia) – has seen endemic violence that has had significant destabilising effects on the core, even if it is – so far – short of war or other forms of inter-state conflict.

Of course, states have often cooperated too. Conflict and cooperation coexist in international relations. But their coexistence is more often than not uneasy. The deepest and most stable form of cooperation – alliances, and other means of cooperation to maintain a balance of power – derives from the reality that force or its threat continually lurks not far below the surface civilities of international relations. By contrast, cooperation for the common good, whether that good is the environment, or proliferation, or trade, is often fragile.

Certainly, there is no 'security community' anywhere in Asia or any of its sub-regions. Yet with only few exceptions, Asian countries have made remarkable progress in almost all metrics of development. Setting aside North America and Europe, Asia is the continent where the most progress has been made in lifting hundreds of millions out of poverty. This apparent contradiction – the continual possibility of conflict coexisting with real material advancement – underscores the imperative of seeing specific conflicts or potential conflicts in perspective, avoiding either overly sanguine or overly dramatic assessments.

We should also bear in mind that many – perhaps most – international issues do not lend themselves to definitive solutions. Even when solutions are possible, the solutions themselves may lead to new sets of problems. Problems can, however, be managed. The management of problems, the mitigation of the risks of conflict inherent in international relations, is one of the most crucial functions of day-to-day diplomacy.

With this as background, let me state my conclusions up front. In Asia, with the exception of West Asia, the risk of conflict by design – war or conflict used as an instrument of policy such as the current wars in Ukraine and Gaza – is low, almost negligible. The real risk is conflict by miscalculation or an accident getting out of hand. This latter risk is not negligible, although, with the exception of Taiwan, not unduly high.

These conclusions are based on two main factors. First, nuclear deterrence. Since 1945 the prospect of mutually assured destruction has kept the peace between nuclear-weapon armed states, with wars fought only between their proxies, the sole exception being the 1999 Kargil war which did not escalate despite Pakistan's defeat, and is thus confirmation of the stability of nuclear deterrence. Second, the most crucial priorities of all Asian states are domestic – by which I mean political as well as economic and in the cases of China and North Korea, the two states from which most Asian threats emanate, re-

1 Karl W. Deutsch, *Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience*, Princeton University Press, 1957.

gime survival which is their most vital interest and foremost priority – and not in the foreign policy domain.[2] While this does not guarantee that they will eschew external violence, I think they do recognise that such actions are more often than not counter-productive with regard to their most important priorities and vital interests and will not be undertaken lightly.

I will illustrate my conclusions by briefly analysing three issues: North Korea, the maritime disputes in the East and South China Seas, and Taiwan.[3]

North Korea

The prospect of North Korea giving up its nuclear weapon or missile development programmes is zero. Pyongyang's most vital interest is regime survival. This is an existential issue and Pyongyang sees these programmes as indispensable to this goal. There is thus no incentive that can be offered to, or cost that can be imposed on, Pyongyang that can persuade or compel it to give up these programmes because to do so is tantamount to regime change.

China-North Korea relations are infused with deep mutual distrust. Beijing is not enamored with North Korea's nuclear weapon and missile programmes. But North Korea and China are two of only five existing Leninist systems in the world and Beijing's most vital interest is to preserve CCP rule. On this issue, Beijing is completely risk-adverse; indeed, continually insecure. Beijing will not be complicit, however indirectly, in regime change in North Korea because that may give the Chinese people inconvenient ideas about their own system. Tolerating North Korea's nuclear and missile programmes is the lesser evil. To expect Beijing to persuade or compel North Korea to give up these programmes is a delusion.

North Korea is, however, rational and can be dealt with in the same way as we deal with all nuclear-weapon states: by deterrence and diplomacy. Despite the regime's habitually inflammatory rhetoric, it is highly improbable that it will again start a war to reunify the Korean Peninsula as it did in 1950 because such a war will almost certainly draw in the US and its allies and would put its most vital interest – regime survival – in jeopardy. The risk is that inflammatory rhetoric about reunification by war may spark a dynamic of escalation that both sides may find difficult to check without grievous political costs. But we should not assume that Kim Jong Un's declaration in January this year that he was renouncing peaceful reunification as a policy goal – symbolised by the destruction of the 'Reunification Arch' – is necessarily an indication that he intends to fight a war of reunification. More likely it is a recognition of the reality of two Koreas and the beginning of a healthy move out of the deep shadows of his father's and grandfather's legacies.

We tend to focus on North Korea's military programmes but Kim Jong Un's assent to power was marked by the announcement of his 'Byungjin' policy, which placed equal emphasis on both military and economic development unlike his father's 'Songun' or military-first policy. When I last visited Pyongyang in 2013 two years after Kim Jong Un came to power, there were tangible signs of development, undoubtedly more symbolic than anything else, but nonetheless real. In late February 2024, the North Korean media reported that Kim Jong Un had said he was "ashamed and sorry" for neglecting economic development outside Pyongyang and called for a "rural industrial revolution", acknowledging that achieving this "won't be easy" along with military spending on nuclear weapons.[4] This may of course be mere lip-service. Still, any sort of 'apology' from any North Korean leader is a rare event and not to be dismissed. Only time will tell whether having made what he considers sufficient progress in his nuclear weapon and missile programmes, Kim Jong Un will return to economics.

Neither North nor South Korea is really interested in reunification. To reduce the risk of miscalculation, it is better that they acknowledge and deal with each other as separate sovereignties and that the US and Japan also recognise North Korea *de jure* and not just *de facto* and conclude a peace treaty with it.[5] This will require South Korea (and Japan) to acquire their own nuclear-weapon capabilities within the American alliance system. The logic of their circumstances has already set them on such a trajectory which will eventually lead to a six-way (US, China, Russia, DPRK, ROK, and Japan) nuclear balance of power in Northeast Asia. Although the pathway to such an outcome will certainly be fraught, the end-result will be stable. Although denuclearisation in any definition of that ambiguous term is not possible, when such a balance is established and North Korea's second-strike capability has developed to the point when Pyongyang is confident that regime survival is no longer in jeopardy, agreements on non-proliferation and arms control may become possible.

2 There is also a strong propensity to see all Asian conflicts or potential conflicts, as a function of US-China strategic competition and Asia only as an arena for their rivalries, as if the countries of the region have no other way of defining their interests. This is understandable. Clearly, US-China rivalry can never be ignored. But the degree to which US-China rivalry is a factor matters more than is commonly acknowledged and requires nuanced assessments. To give an example from Southeast Asia, we commonly assess Laotian and Cambodian relations with China within the framework of US-China competition. But arguably, the relations of both these countries with Vietnam and Thailand are more important, or at least more immediate, considerations for Vientiane and Phnom Penh. Their relations with China and the US are not necessarily independent variables but dependent on their relations with Hanoi and Bangkok.

3 An Indian audience may find it strange that I am not going to talk about the Sino-Indian border disputes that led to war in 1962 and the regular episodes of violence in the last decade, or the Indo-Pakistan disputes that have led to four major wars in 1947, 1965, 1971, and 1999 and many smaller- scale skirmishes. The reason for these omissions is simple. This audience has forgotten more about these conflicts than I ever will know, and there is nothing I can usefully say about them. Rather than expose my profound ignorance, I look forward to being educated on them by you during discussion time. However, my guess is that the two factors I mentioned earlier – nuclear deterrence and domestic priorities – will probably also hold in these cases, particularly the first.

4 https://www.nknews.org/2024/02/kim-jong-un-says-hes-ashamed-and-sorry-for-neglecting-economy/

5 I have often heard the argument that for the US or Japan to formally recognise North Korea and conclude a peace treaty is to reward and thus encourage bad behaviour. I do not find such arguments convincing. First of all, rewarding bad behaviour is hardly unknown in international relations generally and on North Korea specifically – what else was the KEDO agreement of 1995? Of course, KEDO did not work as expected but without getting into futile debates about responsibility for its failure – which is more complicated than generally acknowledged – North Korea then had no nuclear-weapons capability. In my view, its development of such a capability, however rudimentary, will fundamentally change its calculations of interests, particularly when it develops a credible second-strike capability vis-à-vis the US, boosting its confidence in regime survival.

Maritime Disputes

China's extravagant and legally questionable claims in the East and South China Seas serve both strategic and domestic political goals. Strategically, until recently Chinese nuclear submarines had to navigate through the two island chains into the Pacific Ocean for their SLBMs to reach the US, making them vulnerable to interception. The credibility of the most survivable of China's nuclear forces, and hence of its second-strike capability, thus depended on access through the island-chains from the East and South China Seas. China is now reported to have deployed a new generation of SLBMs capable of reaching the US without running the island-chain gauntlet. What ultimate impact this will have on the strategic importance of the East and South China Seas to China's second-strike capability is still unclear. The wartime military utility of the features over which China lays claim, and in the South China Sea has artificially and illegally enhanced, has in any case always been questionable. What is certain is that the political significance of Chinese maritime claims in these waters will be undiminished; that the political significance of the claims is as important as their strategic purpose; and that their political significance may well increase over time.

Politically, these claims put flesh on the bare-bones of the strongly nationalist narrative of humiliation, rejuvenation and realising the China Dream by which the CCP justifies its monopoly of power as the vanguard party. Since the end of the Qing Dynasty, the legitimacy of every Chinese government has rested on its ability to protect China's sovereignty and territorial integrity. The CCP has always relied on this narrative, but after Deng Xiaoping's reforms and opening up, and in particular after the admission of businessmen to the Party in 2001, the orthodox ideological justification of class struggle lost credibility and the CCP was left with no other legitimating narrative. Xi Jinping has used it more insistently than any of his predecessors.

The political importance of this historical narrative to the CCP cannot be overstated. The recovery of territory lost during the period of China's weakness is the central – crucial – element of it. The inconvenient fact is, however, that the most extensive territorial losses were to Imperial Russia and its successor states. Those are beyond even the pretense of recovery. What is left to impress the Chinese people with the CCP's resolve and success in defending China's sovereignty and territorial integrity are Taiwan – which I will deal with separately – and the tiny islands, atolls, shoals and reefs of the East and South China Seas.

The narrative injects a strong element of entitlement into Chinese behaviour and makes diplomatic compromise difficult except as a purely tactical expedient. It is well-nigh impossible for China to significantly modify its behaviour for example by stopping or scaling back its naval and coast-guard deployments in disputed waters. After all, if I am only recovering what is rightfully mine, why should I compromise? Why should I not operate my assets in what is mine? How can I compromise or stop doing so without looking weak to my own people? The CCP is a prisoner of its own narrative which it both uses and fears. Herein lies the risk of an accident getting out of hand. This risk may increase over time. For well-known reasons, China faces a future of uninspiring growth. China is in no danger of collapse or the CCP of losing power. But there is at least a strong possibility that as growth slows and domestic uncertainties raise the CCP's insecurities, it will act out this narrative even more strongly, at least in relation to the weakest claimants as we have already seen in the case of the Philippines.

This does not mean that China will be reckless. These maritime claims are the closest analogue – thankfully so-far non-kinetic – to the proxy conflicts of US-Soviet Cold War competition. War with the US would place at serious risk China's key interest: CCP rule. It is perhaps the very insignificance of these specks in the water that make them attractive means to advance Beijing's domestic political goals as war over them would be absurd. Still, at a time of domestic uncertainty, China must balance its interest in using these maritime claims for domestic political purposes with its interest in mitigating the risks of competition with the US by stabilising relations and setting parameters for competition.

Biden and Xi met at the San Francisco APEC summit in November 2023. Preceding and following their meeting, there has been a resumption of US-China high-level contacts and dialogues in various domains. This is all to the good. In particular, military-to-military dialogues reduce the risks of accidents escalating through miscommunication or miscalculation, even if they cannot entirely eliminate such risks. From the perspective of US-China competition, the overall situation in the East and South China Seas is a stalemate. China will not significantly modify its behaviour but cannot deter the US and its allies from operating in, through and over these waters or coerce even weak states from giving up their claims. Dangerous incidents have reportedly become less frequent since Xi and Biden met. But what calm as currently exists is still fragile.

Taiwan

Taiwan presents a paradox. The prospect of peaceful – i.e. voluntary – reunification is zero or close to it. Hong Kong's fate has destroyed the credibility of the 'one country, two systems' formula as a model for Taiwan, while geopolitical tensions with the US, China's structural problems, and Xi's efforts to assert CCP control over businesses, has reduced the attractiveness of China's economy. But Taiwan is also the issue which is most central to the CCP's legitimating narrative; Xi Jinping has on several occasions said that the China Dream cannot be achieved without reunification, and he has set an implicit deadline for realising the China Dream – the 100th anniversary of the founding of the PRC in 2049. Yet, despite some well-publicised but alarmist and irresponsible statements, including by senior US military leaders, a war of reunification is not imminent, not inevitable, and, at least in in my judgement, unlikely.

Beijing will, of course, never renounce the military option. Xi has instructed the PLA to acquire the capability to exercise it by 2027. But we should not mistake capability for intention and I do not think the military option is China's preferred option. There are several reasons for this. Most fundamentally, the PLA simply does not have the capability or the war-fighting experience to exercise it

with confidence of success even when it acquires the capability.

The last war the PLA fought was in 1979 against Vietnam, and while its sheer weight ultimately prevailed, it was very much a Pyrrhic victory. Given the systemic corruption in, and continuing purges of, the PLA leadership including in its rocket forces, whether the PLA can acquire the capability by 2027 or even 2049 is an open question. The disruptions to the rocket force are particularly significant because the indispensable precondition for a successful operation against Taiwan must be the ability to deter direct intervention by the US and its allies as Putin has done in Ukraine.

Equally important, to capture Taiwan by force will require an amphibious operation – the most difficult of all military operations to carry out successfully – on the scale of the Normandy landings during the Second World War. No one has ever done anything like this since then. It will be an immense gamble and one that the CCP cannot afford to lose. No Chinese leader can survive a bungled operation against Taiwan. Given Taiwan's central place in the CCP's legitimating narrative, a failed operation will even shake the roots of CCP rule. The PLA can easily destroy Taiwan. But what is the use of taking over a smoldering rock? Neither is it clear that, much as they may support reunification, the Chinese people will swallow the large-scale massacre of people they have for decades had drummed into them are their brothers and sisters.

However, there are two scenarios in which China must fight even if it knows it may lose because no Chinese leader can survive not fighting under these scenarios and CCP rule will be undermined if it does not fight.

The first is a low-probability, high-impact scenario in which Taiwan revives its ambition of acquiring an independent nuclear deterrent. Taipei harbored such ambitions in the 1970s and was advancing them with the help of Israel until the US found out and put an end to its programme. Still, there is reason to believe that the ambition has never entirely gone away. Given recent developments in US politics, it is not to be taken for granted that the US will necessarily react in the same way if Taiwan revives those ambitions. A nuclear-weapon armed Taiwan, or even Taiwan as a threshold state, means an end to reunification even as a distant aspiration. China must fight.

The second scenario is if Taiwanese domestic politics takes an untoward turn that crosses Chinese red-lines. Unfortunately, this is not a low-probability scenario. The issue is not that some Taiwanese politician will unilaterally declare independence. It is unlikely that even the most reckless of politicians will do so because there is no political advantage in doing so. Many polls have shown that there is very little (and declining) public support for the two extremes of independence and reunification. Most Taiwanese want the status quo to continue. At the same time, however, polls also show a growing sense of a Taiwanese Chinese identity that is increasingly detached from the mainland Chinese identity. This is draining 'One China,' and the 1992 Consensus on it, of any substantive political meaning. The KMT and DPP are converging in this respect.

The collorary to this growing sense of a Taiwanese identity are pressures on both the KMT and DPP to defend Taiwan's *de facto* 'sovereignty'. Beijing must react to their actions. The PRC coastguard boarding and inspecting a Taiwanese cruise ship after the Taiwanese coastguard caused an accident that killed two PRC nationals on a boat that had intruded into waters near Taiwan-controlled Kinmen Island is a recent case in point. An escalatory dynamic could easily be set in motion that raises the risk of miscalculations or misunderstandings or crossing yet undefined red-lines, because Beijing itself may not know what its own red-lines are until incidents occur.

The increase in the frequency of PLA air force and navy patrols and exercises around Taiwan must increase the statistical probability of accidents, particularly if China steps up grey-zone operations around Taiwan or against features off the Chinese coast or in the South China Sea occupied by Taiwan. Given the sensitivity of the Taiwan issue and the emotions it arouses among Chinese netizens, accidents will be difficult to contain.

The risks of an escalatory dynamic being set in motion by Taiwanese domestic politics are amplified by two trends that have steadily grown in prominence since the end of martial law and the evolution of democratic politics in Taiwan. The first is a decline in the Taiwanese will to defend itself which I do not think the shock of the Ukraine war has reversed. The second is a concurrent rise in Taiwan's sense of entitlement that, because it is the only Chinese democracy, the world – or at least that part of it represented by the US and its allies – must come to Taiwan's defense. The interaction of these two trends in the context of Taiwanese domestic politics is troubling, particularly when Taiwanese domestic politics becomes entangled in US domestic politics.

None of any of this, however, is intended to imply that war by design is inevitable. The Taiwan issue may never be resolved but can be managed. Successful management depends on keeping the myth of eventual reunification credibly alive so that China need not feel that it has no option but to use force. This will require tacit collaboration between Beijing, Taipei, and Washington. This will be difficult but not impossible. Xi Jinping's implicit deadline of 2049 for achieving the China Dream is a complication but not an insurmountable one. Xi will be 71 this June. In 25 years' time, he will in all probability be dead or at least not in power, and his deadline can be quietly forgotten by a new generation of Chinese leaders. The key is to buy time and prevent the Taiwan issue coming to a head.

The X factor – the unknown and potentially disruptive factor – is the domestic politics of these three countries, particularly in the US. That will in fact be the single most crucial influence on all three issues that I have discussed both in the immediate – this year's presidential election – and over the intermediate and long term.

Discussant Comments

Rudra Chaudhuri

This is a thought-provoking paper.

Broad Arguments

If there was one 'big' argument in the paper – across the three sets of scenarios that have been outlined by Bilahari – it is this: The risks of 'war by design' is low but the risks of 'war by miscalculation is high.' Broadly, this claim is premised on two factors: (i) nuclear deterrence provides for stability; and (ii) most Asian states are more focussed on domestic priorities and economic imperatives than war or 'kinetic action,' as Bilahari points out. (The two are not the same, but this is just semantics.)

In a set of footnotes, he makes clear that not everything in Asia is or ought to be considered through the lens of US-China rivalry. Modestly, he leaves the India-China question to others in the room.

In the case of North Korea, he argues, deterrence and diplomacy minimises the opportunity for war. It is unlikely, he makes clear, that Kim Jong Un will fight a war of reunification. To be clear, he seems to make the case that nuclearisation of North East Asia can serve to stabilise relations.

As far as competing maritime territorial claims are concerned, he suggests that while war is unlikely, downwards trends in the Chinese economy could trigger confrontations (not war pe se) with countries like the Philippines.

In the case of Taiwan, he makes two claims with regards to the risk of war: (i) Taiwan acquiring nuclear weapons or close to doing so, like the 1970s; and (ii) an open call for independence. The author claims that China's capability build-up should not be given to mean that there is an intent to forcefully reunify Taiwan. I however detected a third rationale tucked in the narrative, miscalculations arising as a result of 'undefined red lines'.

Whilst I find myself in broad agreement across the many lines of argument highlighted by Bilahari, a few reflections:

On nuclear weapons: There is a tacit acceptance that nuclear weapons and broader nuclearisation = stability. This is a typical Waltzian analysis of war and peace. Yet, the case of Iran, Israel, and indeed Pakistan (only mentioned in passing, and perhaps for good reason) make clear that the so-called stability-instability paradox mooted by realist thinkers, and that clearly shape Bilahari's own approach, cannot be accepted as a given. Stability at the top of the conflict ladder can and has encouraged instability at the bottom. In the ultimate analysis, deterrence may dissuade outright force-on-force clashes, but it also provides the umbrella under which kinetic activity can be sustained. Think of India's own experiences in dealing with the Pakistan-backed insurgency, and the escalations to war and near-war scenarios apparent in its own recent history. This is not to say that North Korea may use instability the way Pakistan had done and continues to do, but it cannot be ruled out. The essential point is that the nuclear deterrence debate cuts in at least two ways: stability and instability. There is enough evidence of the latter, luckily nothing since 1945, to dispel the realist truths in the case of the former.

There is a general contradiction in Bilahari's argument with regards to China's declining economic fortunes, which, in his assessment may push the CCP and Xi Jinping to focus efforts on "stronger narratives" and the position that conflict is less likely in Asia. As US industrial actions (CHIPS Acts, etc.) and European export control measures continue to target niche sectors of the Chinese innovation ecosystem; and if China's factor markets continue to slide, and growth continues to dip, will China only look to nibble in the Commons, as Bilahari suggests, to distract from its domestic-economic woes? Niu Jung, a long time ago made the argument that China's leftward turn in the late 1950s could, to an extent, explain the outbreak of conflict with both India and Vietnam. Is it really true, as Bilahari underlines on the first page of his paper, that in Asia countries focus more on domestic imperatives and less on kinetic imperatives? What about territorial expansionism – as is evident on India's long and contested boundary? Albeit, with regards to the latter, the author makes way for others in this room to judge the perils of war. But, it would seem to me that dislocating the domestic from the foreign may present false binaries for analysing the risks of conflict, in Asia or elsewhere.

Lastly, in the case of Taiwan, the argument that Xi will be long gone by 2049 is unlikely to provide a pause to military planners, who by necessity look at both intent and capabilities – hence potentially "crossing undefined red lines" that the author himself makes space for in his excellent paper. This may just trigger exactly the kinds of actions that are least expected. To this end, and as the so-called Long Peace has taught us, the only real way to avoid crossing trip wires is to keep engaging the other side.


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INDIA IN ASIA
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PAPER 2

Industrial Policy and Geopolitical Rivalry: The Semiconductor Industry at a Crossroads

Keisuke Iida

Once criticised as obsolete, industrial policy is lately enjoying a renaissance in many parts of the world. East Asia has a long history of industrial policies. However, it is no longer limited to East Asia; the United States (US), which was the base of neoliberalism and free-market ideology, now experiments with industrial policy. Moreover, the US, Europe, and China recently account for the vast majority of industrial policy measures.[1] In the 2010s, the number of industrial policy measures doubled.[2]

Thus, what accounts for this renaissance of industrial policy? Undoubtedly, there are multiple factors, but the consensus seems to be that renewed geopolitical rivalry has something to do with it. According to Evenett *et al.*, geopolitical concerns and national security accounted for 19.7 per cent of measures that governments introduced since the beginning of 2023.[3]

Therefore, the purpose of this study is to examine the extent to which this hypothesis is correct. This is just the first cut because a thorough test would take more time than what was available to me while I was writing this paper.

What is industrial policy? There are several definitions of industrial policy with minor differences.[4] In the contemporary era, classical definitions of industrial policy are too narrow. The broadest definition offered thus far is that of Rodrik, which states that industrial policies are "those government politics

that explicitly target the transformation of the structure of economic activity in pursuit of some public goal."[5] This definition fits the contemporary age if and only if "economic activity" refers to the entire gamut of activities along supply chains. Today, economies and firms are connected through global supply chains; hence, governments are trying not only to promote industries within their own borders, but also to transform entire supply chains. Furthermore, governments are not limited to old-fashioned fiscal measures, such as subsidies and tax incentives. Industrial policy now encompasses trade and investment measures such as import restrictions, export controls, inward investment screening, and even restrictions on outward investments.[6] Moreover, the antimonopoly law is involved.

Semiconductors as a Case Study

Every nation wants its own semiconductor industry. In particular, China, Germany, India, Japan, and the US compete to locate semiconductor manufacturing at home. It is well known that the history of semiconductors is littered with the motive to foster technology that helps win geopolitical rivalries.[7] Therefore, it is natural to hypothesise that the recent mad rush to entice chip-making into one's own territory is a result of geopolitical/geoeconomic competition. Thus, this paper focuses on the 2020–24 period in which countries diligently tried to transform the global supply chains of the semiconductor industry to increase their own strategic autonomy and economic security. This study will focus on the US and Japan because they are not

1 According to Evenett *et al.*, 2024, p. 7, China, the European Union (EU) and the United States (US) account for 48 per cent of measures that total over 2,500 new industrial policy measures introduced worldwide. Germany tops the list of measures in the 2010s (Juhász, Lane and Rodrik, 2023, p. 17).
2 Juhász, Lane and Rodrik, 2023, p. 3.
3 Evenett, *et al.*, 2024. p. 19.
4 See Aiginger and Rodrik, 2020, pp. 204-05 for various definitions.
5 Juhász, Lane and Rodrik, 2023, p. 4.
6 On August 19, 2023, the Biden administration said that it would restrict US investment in China in three areas: AI, quantum technologies, and semiconductors.
7 Miller, 2022.

only very explicit about their security motives, but we will also end with a discussion of how China is coping with the US strategy.

The US: CHIPS and Science Act

The industrial policy measure that best fits the geopolitical rivalry hypothesis is the CHIPS and Science Act, which was signed into law in August 2022. The origin of this Act traces back to the CHIPS for America Act, which, in turn, is part (Sections 9901–9908) of the National Defense Authorization Act of 2021 that came into effect under the Trump Administration. The CHIPS for America Act states that the Commerce Department would provide financial incentives to promote investment in manufacturing and R&D in semiconductors. The CHIPS and Science Act realised this goal by providing USD 280 billion for R&D and manufacturing incentives over the next five years. Of the USD 280 billion, USD 52.7 billion would be allocated to strengthening semiconductor manufacturing capacity in the US. The fact that this financial assistance was part of the defense spending authorisation indicates that this programme is integrally tied to national security objectives.

The CHIPS programme that the Department of Commerce announced in February 2023 sets forth the goal of creating two large industrial clusters for the production of advanced logic semiconductors. There are several conditions that applicants for the programme have to satisfy, and the most stringent is what is known as'national security guardrails', to the effect that the beneficiaries of the financial assistance would be put under strict restrictions over investment in the countries of concern—namely, China, Iran, North Korea, and Russia—for the next ten years. This fact alone indicates that geopolitical rivalry figures prominently in the programme's structure. This implies that Japanese and Korean companies face a dilemma as to whether to prioritise investment in the US or China. However, Chris Miller believes that these guardrail conditions are not obstacles for US companies.[8]

The recent phase of the US semiconductor policy originated in heightened concern about the influence of Huawei. In the US, Huawei, even though it is a private company, is suspected of being heavily influenced by the Chinese government, and the rapid inroads it was making in selling its products in emerging 5G networks globally were looked at with concern. The US placed Huawei on the Entity List in May 2019 as part of the Trump administration's trade war with China; however, there was not much pressure because Huawei could still buy chips from third countries such as Taiwan and Korea. Thus, finally, in 2020, the Trump administration applied what is known as the (amended) Foreign Direct Product Rule (FDPR), which could bar foreign companies producing outside US territories from exporting their products if they were using US equipment or US technology. This was announced in May 2020, and soon after, the Taiwan Semiconductor Manufacturing Company (TSMC) announced its plan to produce semiconductors in the US.

The US Congress passed the National Defense Authorization Act in January 2021, establishing a fund for R&D in semiconductors. In February 2021, the federal government announced an investment of USD 37 billion for improving semiconductor production at home.

The COVID-19-related semiconductor shortage also hit the US around that time, and the Biden administration held online meetings with Intel and TSMC to address the lack of semiconductors. President Joe Biden also included USD 50 billion for the production and R&D of semiconductors in its infrastructure plan announced at the end of March 2021.

On June 8, 2021, the Senate passed a bill to invest USD 52 billion in subsidies to fund the production and R&D of semiconductors as part of the National Defense Authorization Act passed in January 2021. On July 28, 2022, the House passed a bill to provide USD 52.7 billion for the production and R&D of semiconductors in the US. President Biden issued a statement saying that the bill "will strengthen our national security by making us less dependent on foreign sources of semiconductors."[9] According to the CHIPS and Science Act, which was passed in August 2022 providing USD 52.7 billion for semiconductors, recipients will be prohibited from investing in their own facilities in China over the next decade.

Japan: Hosting TSMC

Japan is attempting to boost the production of semiconductors in a major way. According to the Ministry of Economy, Trade, and Industry (METI), the national plan is to triple the sales of made-in-Japan semiconductors from JPY 5 trillion in 2020 to JPY 15 trillion by 2030. On June 4, 2021, METI announced a 'Semiconductor and Digital Strategy' to improve the supply chain of semiconductors in Japan. Four months later, TSMC announced that it would build a manufacturing factory in Kumamoto, starting work in 2022 and production in 2024. Since then, the Japanese government has provided massive subsidies to Japanese and foreign companies producing in Japan to boost their production or establish new facilities. Currently, Japan provides incentives to Rapidus, Japan Advanced Semiconductor Manufacturing (JASM), a TSMC subsidiary that invests in industrial clusters in Kumamoto, Micron Technology (US), and Kioxia (formerly Toshiba Memory). It also invests in next-generation technologies such as photoelectric fusion technology. Recently, another Taiwanese player joined the game. On October 31, 2023, the Strategic Business Innovator Group (SBI) Holdings announced that it would build a new semiconductor factory in Miyagi Prefecture, together with Taiwan's Powerchip Semiconductor Manufacturing Corporation (PSMC).

Japan embarked on this round of industrial policies for semiconductors for the simple reason of COVID-19. The pandemic led to a huge spike in demand for personal computers as people stopped commuting and started working from home, which in turn led to a huge spike in demand for semiconductors; moreover, this newly found demand for computer chips diverted semiconductors to computers and data

8 Kazuki Kataoka, "Shido shihajimeta CHIPS Program, Sapurai Chein ni Ateru eikyo ha" JETRO, May 8, 2023.
9 https://www.whitehouse.gov/briefing-room/statements-releases/2022/07/28/statement-from-president-biden-on-house-passage-of-chips-and-science-act-to-lower-costs-create-good-pay-jobs-and-strengthen-our-national-security/

centers at the expense of auto production. Japanese automotive companies began to experience this pinch as early as January 2021.[10] The fire at a major factory in March 2021 did not help matters.[11] The peak of the semiconductor shortage occurred from spring to summer 2022. Thus, car companies began complaining to the government, which had to respond quickly. The Japanese government begged TSMC to produce in Japan instead of shipping greater amounts from Taiwan to Japan.

The fact that TSMC is going to produce (at least in its first factory in Kumamoto) only older-generation chips of 28-nm line width is a testament to this factor of car production: automobiles need only these legacy chips, which are not state of the art.

However, geopolitics and national security matter to some extent. First, there was favouritism toward companies of some nationalities at the expense of others. Toshiba—one of the most successful Japanese electronics companies—lost money in the nuclear power business in the late-2010s and was trying to split off some business sectors. Therefore, when Toshiba Memory—a profitable semiconductor business in the Toshiba group—went on sale in 2017, the government started considering stopping the sales of Toshiba Memory for security concerns, if the buyer was a Chinese or Taiwanese maker based on the Foreign Exchange and Foreign Trade Law. Finally, the product was sold to a Japanese-American-Korean consortium.

Another security-related or geopolitical aspect of Japanese industrial policy toward semiconductors is 'friend-shoring'. As part of the concerted drive among the Group of Seven (G7) industrialised countries to increase supply chain resilience, Japan is also participating in various alliances to source components, materials, and other processes of chip-making from friendly countries and not from countries of concern. It is said to have joined the Chip 4 Alliance, led by the US, to increase cooperation in semiconductor supply chain resilience among Japan, Korea, Taiwan, and the US. Japan and India signed a Semiconductor Supply Chain Partnership in July 2023. Rapidus, which is heavily subsidised by the Japanese government, is a new European-Japanese joint venture planning to produce advanced semiconductors.

A third way in which Japanese semiconductor policy is geopolitically but negatively motivated is through Japan's cooperation with the US regarding export controls toward China. On October 7, 2022, Washington announced a plan to strengthen its export controls on semiconductor exports to China, and simultaneously asked Japan and the Netherlands to help; some companies from these two countries produced chip-making equipment that was indispensable for military-use spec chips. On January 13, 2023, Japanese Prime Minister Fumio Kishida and US President Biden met in Washington, and the latter asked Kishida to cooperate on semiconductor export controls for China. President Biden also met Prime Minister Mark Rutte of the Netherlands and discussed semiconductor issues. Soon afterwards, the two countries announced that they would comply with the US wishes.

China: Industrial Policy Turning Into Geopolitical Rivalry

China's industrial policy dates back to the early 2000s. The 10th Five-Year Plan prioritised the development of a domestic integrated circuit (IC) foundry industry. Foundries such as Semiconductor Manufacturing International Corporation (SMIC) and Grace were founded in 2000, while XMC was founded in 2006.[12] The next three Five-Year Plans continued to emphasise state assistance in nurturing the IC industry. The National Development and Reform Commission stated that the sale of Chinese-made chips in 2015 more than doubled from 2010 to 361 billion yuan.[13] However, China has become the world's largest consumer of semiconductors. In 2021, the worldwide market for IC was USD 441.5 billion (JPY 48.4 trillion), while in 2020, China imported IC to the total amount of 2.4 trillion yuan (JPY 40.1 trillion).

To nurture the semiconductor industry, China established a government-sponsored semiconductor fund called the China Integrated Circuit Industry Investment Fund (ICF). The first fund ('Big Fund I') launched in 2014 raised 138.7 billion yuan (USD 21.8 billion), while the second fund ('Big Fund II'), which was launched in 2019, raised 204.0 billion yuan (USD 29.08 billion). The fund received a blow from a corruption investigation in 2022 and a new head was named in March 2023. A third fund is under preparation.

The most important goal of China's industrial policy regarding semiconductors is to achieve self-sufficiency in semiconductor manufacturing. Raising the rate of self-sufficiency was embedded in the Made in China 2025 programme: according to the programme, which was announced in 2015, the self-sufficiency rate for semiconductors would be raised to 40 per cent by 2020, but it has remained 15.9 per cent.

Overall, it is clear that China's industrial policy on semiconductors was motivated by similar goals in other areas: raising China's level of technological prowess so that it does not have to be at the West's beck and call in high-tech fields. This logic is geoeconomic but not necessarily geopolitical. However, in the midst of the US-China conflict, China's semiconductor policy began to partake of a geopolitical nature.

First, China has been affected by increasing export restrictions from the US and its allies. After the US announced renewed export controls on semiconductor exports to China on October 7, 2022, Japan and the Netherlands joined the US to restrict exports of chip-making equipment produced by Tokyo Electron, ASML, an EUV lithography equipment manufacturer, and others.

However, Huawei surprised the world in the summer of 2023 with its introduction of a new model. It released at the end

10 Toyota suspended some production lines in China; Honda reduced production in China and North America; Nissan has decided to reduce the production on 'Note'; and Subaru and Suzuki were considering the same.
11 On March 21, 2021, Renesas Electronics said that there was a fire in its production facilities in Naka Kojo (Hitachinaka, Ibaraki).
12 Mejerowicz and de Medeiros, 2018, p. 19.
13 JETRO, 2022, p. 1.

of August 2023 'Mate 60 Pro'. Canadian Tech Insights found that it included 7 nm chips produced by SMIC. SMIC may have exploited loopholes in US export controls by the US.

Second, China is also trying to stymie the semiconductor industry in the West by restricting the supply of critical inputs for chip making. On October 17, 2020, China legislated an Export Control Law approved by the Standing Committee of the People's Congress. In September, China had announced the list of 'Unreliable Entities', a list akin to the Entity List of the US. In July 2023, the Ministry of Commerce announced that, starting on August 1, 2023, China would increase export controls on rare metals, such as gallium and germanium, which are essential materials used for semiconductors. China is also trying to weaken US chip companies with import controls. For example, China has banned the import of Micron products for national security reasons.

Finally, China is trying to stymie the growth of the Western semiconductor industry by blocking M&A deals that Western companies are trying to implement. For example, in 2016, Qualcomm attempted to take over Dutch NXP Semiconductors with USD 47 billion. However, two years later, China barred Qualcomm from taking over NXP. In 2021, Applied Materials tried to buy the Hitachi-related KOKUSAI ELECTRIC but could not obtain Chinese approval for antimonopoly reasons.

Conclusions

Today, nations are rushing to revive industrial policy by targeting a few selected items for industry promotion, the most popular of which are artificial intelligence (AI), electric vehicles (EVs), and semiconductors. This study focuses on semiconductors because they are integrally connected to security owing to their dual-use nature. Hence, they are most susceptible to geopolitical rivalry.

It is evident that the US and Japan are trying to transform their supply chains in semiconductor manufacturing such that they are less dependent on China. However, they are also attempting to stymie the growth of China's semiconductor industry, which will eventually weaken the People's Liberation Army (PLA). However, the chains of causation are so long that no one can be sure if this will happen in reality.

Appendix

The following is a summary of the policies pursued by other major players. Owing to a lack of space, we shall not delve into the motives behind each of these policies.

The EU/Germany

In April 2023, the EU enacted a legal instrument that would provide € 43 billion (public and private combined) with the goal of doubling its market share. A year and a half earlier, on September 15, 2021, Ursula von der Leyen, head of the European Commission, announced in her policy speech that the EU intended to legislate a European Chips Act to strengthen supply chains from R&D to production. The EU's world market share is only 10 per cent which the EU wants to increase to 20 per cent. The EU agreed on April 18, 2023 on the European Chips Act, which would invest € 43 billion (public and private investment combined) with the aim of raising the EU's market share to 20 per cent from the current 10 per cent.

Enticed by these subsidies, companies are pouring money into Germany. On June 19, 2023, Intel said that it would build a new factory in Magdeburg in Germany to produce cutting-edge semiconductors. The *Handelsblatt* said that subsidies would increase to € 9.9 billion from the originally planned amount of € 6.8 billion. In Germany, Infineon Technologies built a semiconductor factory in Dresden. Of the € 5-billion investment, € 1 billion will come from the European Chips Act of the EU. On August 8, 2023, TSMC said that it would build a new factory in Germany to produce 12–16 nm and 22–28 nm chips. This is the first time that TSMC will produce chips in Europe. The plant would be in Dresden. The total investment would be € 10 billion, of which € 5 billion would come from the German government. Germany plans to spend € 20 billion on semiconductors over the next few years. Additionally, Intel plans to construct semiconductor assembly plants in southwestern Poland.

India

India has a low production capacity for semiconductors. However, the national government will provide up to 50 per cent (and the local government will provide an additional 10–25 per cent) of the building costs for new manufacturing facilities. Thus, companies can build new capacity using only a small outlay of their own capital. On June 22, 2023, plans to build facilities for manufacturing semiconductors in India were announced. It is planned to complete construction by the end of 2024. Micron will pay only one-third of the investment, and the rest will be shouldered by the national government of India and the state of Gujarat.

Korea

Korea announced the K-Semiconductor Strategy in 2021 with the goal of establishing the K-Chip Belt—the world's largest semiconductor supply chain—by 2030. In mid-May 2021, the Korean government announced the K-Semiconductor Strategy with 510 trillion won in investment plans from private companies over the next decade.

The new Yoon government continues and goes beyond this policy; it announced on July 21, 2022, a "strategy for becoming a semiconductor superpower" and made upward revisions in the amounts for corporate funding goals and human resource development goals.[14] The Yoon administration passed the K-Chips Act in January 2023 to achieve these goals.

In line with this plan, Korea is helping the US increase its production of semiconductors. Coinciding with the US-Korea summit on May 21, 2021, Samsung announced a plan to invest USD 17 billion in manufacturing semiconductors in the US. On November 24, 2021, Samsung announced that it would build a factory in Taylor, TX, worth USD 17 billion. They would produce system semiconductors for 5G and AI.

14 Makoto Abe, "ROK's new Yoon Suk-Yeol administration rushes to strengthen semiconductor industry amid intensifying US-China confrontation, 'Research Report'," JIIA. 2023. https://www.jiia.or.jp/en/column/2023/02/korean-peninsula-fy2022-04.html

Taiwan

Around 2021, TSMC's business plans became global, starting with the construction of factories in the US. On April 1, 2021, the company announced that it would invest USD 100 billion over the next three years. It would build factories in Arizona and Taiwan. Part of the reason was that the Chinese market in its business plan had to be abandoned, and the company had to find an alternative market, because it was no longer permitted to supply chips to Huawei from 2020 on.

However, its implementation in the US has been delayed. In the summer of 2023, the company announced that the completion of the first plant in Arizona would be delayed to 2025, pushing back the date by one year owing to the lack of human resources. At a meeting in January 2024, TSMC's chairman Mark Liu announced that construction of the second plant in Arizona will be completed in 2027 or 2028, later than the original plan of 2026.

Taiwan's policy on semiconductors began to have geopolitical implications, particularly after Pelosi's visit in 2022. After Speaker of the House of Representatives Nancy Pelosi's visit to Taiwan, China on August 3, 2022, stopped the export of natural sand to Taiwan. It was feared that this might affect Taiwan's semiconductor industry. However, it was later found that natural sand was rarely used in semiconductor manufacturing. Pelosi met President Tsai Ing-wen and Vice President Lai Ching-te in the Presidential residence on August 3, 2022. Chinese military drills continued throughout Taiwan.

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Discussant Comments

Nitin Pai

The US is going after the Chinese semiconductor industry with a ferocity that has very few precedents. Driven by a national security doctrine aimed at denying China the ability to exploit American technology to threaten America's interests, Washington has been tightening the screws on its own industry and that of its allies since the summer of 2022. In addition to export restrictions and employment controls, the US government has been pushing Taiwan, the Netherlands, Japan, South Korea, and Germany to squeeze the sale of manufacturing equipment, critical parts, raw materials and on-going service contracts with mainland Chinese companies. Wang Yi, China's foreign minister recently called the sanctions "reaching bewildering levels of unfathomable absurdity."

No one likes the prospect of cutting themselves off from the Chinese market—which used to purchase half the world's chip production—and Washington's policy is unpopular, painful, and costly. Yet the US is doubling down on what it calls the "small yard, high fences" strategy.

Why has geopolitics become obsessed with semiconductors? It is because chips are the most important physical manifestation of the currency of power in the Information Age. Data, algorithms and intellectual property are abstract, only hardware and people are palpable. Computers, networks, vehicles, equipment, and armaments are also physical manifestations, but chips are in everything and everything depends on chips. They are zero-sum goods in a massively non-zero sum economy, so controlling them is seen as a way to remain powerful in this era. Whereas power once came from controlling land, sea routes, gunpowder, factories, and nuclear weapons, it now comes from chips. At least in the eyes of world leaders and top policymakers.

To what extent are chips the source of geopolitical power? When launching the crackdown on China's semiconductor industry, the US national security adviser said that "these restrictions are premised on straightforward national security concerns. These technologies are used to develop and field advanced military systems, including weapons of mass destruction, hypersonic missiles, autonomous systems, and mass surveillance." Yes, there is a military dimension but it is a narrow one. Having access to the most advanced chips allows the US to dominate the global economy. In denying such chips to China, Washington is not merely limiting a military rival, it is containing a strategic geopolitical competitor. At least for a while.

Washington's actions set China back at least five but potentially more than ten years. Although Huawei has demonstrated 7nm microprocessors and GPUs in recent months, made with pre-sanctions Western equipment, the Chinese industry will at best be capable of 14nm chips this year, when the US is at 2nm and about four generations ahead. China will also have to build its own domestic eco-system and external supply chains. A spokesman for China's parliament declared that, "For any technology known to man, the US cannot choke China's development. It is merely a matter of time before we prevail". Some of this is bravado, but it is not beyond reasonable imagination. What you can do with a chip depends not only how fast the chip is but also on how you do it. Innovations in computational methods, processing algorithms and applications can offer alternative paths to development.

But it will cost the Chinese government hundreds of billions of dollars over the next few years. Beijing reckons it has the money, and a new vice-premier has been put in charge of the mission after the previous team was put behind bars for corruption.

We should expect the global semiconductor industry to split into two competing eco-systems over the next decade. They will intersect at some levels but sharply diverge at the cutting edge. In other words, while the leading manufacturers will be compelled to isolate themselves from each other, a large number of global suppliers at the middle and lower levels of the value chain will be able to work with both Western and Chinese technologies if they choose to and their governments permit. As you might have noticed by now, the tech industry will operate in a world of intensifying political and policy risks. Even open-source technologies have become risky, as Washington's unwise moves against the RISC-V ecosystem indicate.

India's public support for building basic semiconductor manufacturing capability is well-considered. No country has done so without massive government support. Similarly, no country—including China before Xi Jinping—did so by being on the wrong side of the US. India is in a good position but New Delhi must figure out how to take greater advantage of East Asian supply chains. One of the conclusions in my colleague Pranay Kotasthane's book on semiconductor geopolitics is that "dependence on East Asia is unlikely to go away over the next two decades despite the massive investments happening across geographies".

The massive opportunity costs and weaker network effects are not the only price the world is paying for this fight over chips. To the extent that the turmoil in the semiconductor sector affects the pace of energy transition, the damage to global climate might be more significant.

(These comments were subsequently published in Mint)


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SESSION 2

New Industrial Policies: How Are They Different From Those That Promoted Growth in Asia?

SESSION NOTE

Sanjay Kathuria

Introduction

We can define industrial policies as a set of policies that creates an industrial structure different from what it would have been under a free market, minimal government environment.

The development success of the countries of East and Southeast Asia (ESEA) owes much – according to the dominant view – to the respective governments adopting a very proactive stance to promote rapid industrial development deemed critical for overall growth and technological progress. The Asian 'tiger economies' of Korea, Taiwan, and Singapore (Hong Kong had a more laissez-faire approach), have all graduated to high-income status; Japan did the same earlier; and China went from low to upper middle-income status in record time; as may Vietnam in coming years. They are said to have followed the flying geese pattern, starting from low-technology, labour-intensive, export-oriented sectors to gradually going up the technology scale. This has been done through the use of active industrial policy, along with an open trade orientation. Emphasis on skill and technology-intensive sectors, the direction of FDI into particular areas, a focus on export orientation, and support of local R&D and investment in human capital, all constituted the broad elements of their industrial policy. Much of this support was mediated through a performance lens. Subsequent Asian success stories, especially China and more recently Vietnam, also emphasised export orientation and high investment rates.

The global context now is very different from the time when the Asian tigers were achieving their success. Earlier, successful industrial policies were aimed primarily at structural transformation and export orientation to achieve rapid economic growth and development. Today,

the industrial policy goals of advanced economies (AEs) appear to be more defensive, including the use of large-scale subsidies that, by design, discriminate against foreign production, and the prospective use of controversial carbon taxes on EU imports, among others. They address issues related to the climate-related transition, post-COVID-related doubts about resilience in supply chains including onshoring and nearshoring, the quality of jobs, geo-economic fragmentation and trade wars, strategic autonomy, and national security, among others. They are also being made in reaction to the challenges being posed by the emergence of industrial and technology competitiveness being exhibited by China, and the consequent perceived threats to the national security of AEs. Hence there is renewed interest in policy and academic circles around industrial policy, and perhaps attaching a new respectability to it.

The US is the most prominent representative of the new industrial policies, as seen in the Inflation Reduction Act's $369 billion support of investments in energy security and climate change, and $52 billion investment support for semiconductor manufacturing and research under the CHIPS Act. There is also a European CHIPS Act that provides over €43 billion to strengthen the digital and green transition, and Japan's programme to onshore investment through subsidies up to a maximum of $140 million per company. Other Asian countries such as China, India, and Indonesia have also been implementing their versions of 'make at home' policies. Saudi Arabia and the UAE are also very active.

Recent research by Juhasz et al (2023) shows that industrial policy is on the rise, more so in rich countries. Looking at data for the G20 countries, they find that, over 2010-22, the number of industrial policy interventions has risen, with significant upticks in 2018 and 2021. Higher-income countries are major users of industrial policy interventions, and there is a clear correlation between income per capita and the number of interventions.

The Old and The New

How are the new and old industrial policies different? Compared to older industrial policies, new industrial policies appear to have the following stylised characteristics:

1. Broader policy goals that include social and environmental objectives
2. Wider array of included sectors, reflecting a more complex international environment and multiplicity of goals
3. Greater use of fiscal tools such as subsidies and taxes, raising concerns on protection and wasteful expenditure
4. More expansive use of demand-side interventions, especially to address environmental sustainability goals

New Industrial Policies Include Social and Environmental Goals

The primary focus of Asian industrial policies was economic growth and international competitiveness. While these policies often resulted in significant social benefits, such as employment and technological advancements, they were not typically designed around broader social or environmental goals.

The new industrial policies explicitly incorporate social welfare, inclusion, and environmental goals as part of their objectives. In the modern world, digital infrastructure is a critical part of an inclusion strategy, and includes public support for broadband connectivity, digital literacy, affordable access, etc. Such programmes can be seen across the world, in the US, Europe, India, and Brazil, to name just a few. Support for semiconductors, the upstream investment for all things digital, is part of this strategy. Another social objective sought to be addressed is the declining quality of jobs as evidenced, for example, in the growing presence of gig workers across the globe. For example, the IRA, along with the Infrastructure Investment and Jobs Act of 2021 and the CHIPS Act, seeks to "create good-paying union jobs" through investments in domestic manufacturing and clean energy, and the CHIPS Act also aims to support workforce development. Many countries, including Germany, Canada, the UK and the Nordic economies, are supporting skill development and/or active labour market policies to help enhance worker productivity and remuneration. Regional dispersion of investment is another goal that has gained traction in the light of increasing regional inequalities within countries. Such 'place-based industrial policy' has been implemented in the UK, US, and even across the EU, where its regional funds seek to reduce regional disparities among member countries.

Environmental sustainability provides the most powerful case for new industrial policies, and are central to the rich world's policy interventions. The European Green Deal is a prominent example of a comprehensive set of environmental policies that seek to "...combine the reduction of emissions, with measures to preserve nature, and to put jobs and social balance at the heart of this transformation" (European Commission, 2021). Part of this package is the controversial Carbon Border Adjustment Mechanism, which, starting in 2026, will impose a tariff on carbon-intensive products like steel and cement on trading partners that do not impose a price on carbon. The US Inflation Reduction Act is also aimed at the climate transition, and there is likely to be growing competition (and therefore a subsidy race) between the US and Europe for attracting investment relating to green technology and innovation. China, a major provider of industrial subsidies, has been supporting electric vehicle manufacturing for over a decade, and one estimate says that it will have 69 per cent of global battery manufacturing capacity by 2030.

New Industrial Policies Target a Much Wider Array of Sectors

Earlier, Asian countries focused their industrial policies on selected sectors, although they were pragmatic about the choice of sectors over time, learnt from their past mistakes, and their choices led, in most instances, to 'market-conforming'[1] outcomes. In the 1950s, after the Korean war, Japan promoted steel, shipbuilding, automobiles, and aluminium refining. In the 1970s, it promoted knowledge-intensive sectors like electronics and semiconductors. South Korea made a concerted effort to push heavy and chemical industries in 1973, but the 1979 recession led it to abandon this policy; it began supporting high-technology exports in the 1980s.

1 World Bank (1993), p. 21. See World Bank (1993) and Hernandez (2004).

In Taiwan, the favoured sectors were, until the early 1970s, plastics, apparel, consumer electronics, and home appliances. In the 1980s, it shifted towards information technology and biotechnology. Compared to Japan and South Korea, the economies of Malaysia, Singapore, Taiwan, and even Hong Kong supported their chosen sectors – which were often high- technology industries – with more moderate incentives.

The new industrial policies are tasked with a much larger set of issues to deal with, including climate change, post-COVID recovery and resilience, the challenge of good jobs, dealing with the rise of China, etc. Moreover, modern economic competitiveness requires a wider array of capabilities, including, for example, services and digital expertise. The new policies therefore extend beyond traditional manufacturing into high-tech, green energy, digital infrastructure, services, and even social sectors.[2]

New Industrial Policies Appear to be more Protectionist, and do not Employ Yardsticks, Such as Export Performance, for Providing Incentives

Most East Asian policies had, in one way or another, a strong export orientation focused on manufacturing, even though their instruments differed. While import protection was quite common in the initial years of industrialisation, except for Hong Kong and Singapore, it was combined with export incentives and export-facilitating exchange rate policies, followed by trade liberalisation. Taiwan began its export-oriented policies in 1958; South Korea in the mid-1960s; and Indonesia, Thailand, Malaysia, and China in the 1980s. In most cases, except for South Korea, these export-oriented policies were accompanied by the promotion of FDI. These policies were reflected in a remarkable upsurge in the share of manufacturing in total merchandise exports of ESEA.[3]

A distinct feature of ESEA policies, which contrasts with policies that were employed to initiate industrialisation in India, was the discipline in incentive-provision intermediated via the market or through contests.[4] South Korea was a prime example, linking export performance – a particularly good yardstick for competitiveness – to government support. Japan and South Korea also used deliberation councils to establish contests among firms for access to incentives. Such discipline helped to avoid excessively wasteful incentives.

ESEA policies were also pragmatic, adapting to changing global contexts and institutions and to experiences of neighbours and predecessors.[5] Initial protection, for example, was pragmatic, and gave way to liberalisation in most cases. In South Korea, even during its most interventionist period, effective protection was declining. Japan liberalised during the 1960s as it joined the GATT, and went further once it became an OECD member in the 1970s.

The new industrial policies, by contrast, are often protectionist and create inefficiencies. But protection has taken on a different form. With the exception of tit-for-tat tariffs between the US and China, the impending and controversial tariffs under the EU's Carbon Border Adjustment Mechanism, and the recent rise in tariffs in India, discrimination against foreign production mostly takes the form of widespread subsidies and tax breaks for onshore production. Compared to tariffs, such protection is far less transparent and can be more wasteful, and certainly presents a big challenge to the WTO's effectiveness.[6]

'Friend-shoring' policies can also be protectionist, even if their intent is risk mitigation rather than protection, to the extent that they discriminate against those countries outside the circle of friends. Their impact can be considered to be equivalent to sector-specific free trade agreements with a limited group of countries.

Pushing domestic production to replace foreign production has inherent inefficiencies. With a goal of creating resilient supply chains, the new policies seek to substitute foreign (usually Chinese) suppliers by encouraging domestic capacity in critical products and materials, especially via subsidies and tax concessions. The awards of incentives under such policies are linked – to take one example – to additional or new production of high-technology products such as semiconductors, without any significant attention to costs or competitiveness, as seen in recent awards under the US CHIPS Act.[7] There are similar concerns about Europe's CHIPS Act.

Concerns about such inefficiency and protection are not confined to the US and Europe. There are a slew of emerging market countries seeking to encourage high-tech manufacturing, attract investment relating to the green transition, become logistics hubs, and so on. Prominent among these are India, Saudi Arabia, China, Indonesia, UAE, and many more.[8] The vast scale of these efforts, being implemented with increasing vigour over the last few years, combined with the dubious history of such ambition, means that more than a few are likely to fail and impose immense economic and social costs on their respective populations.

Finally, the scale, speed and lack of cross-country coordination of these policies would likely mean very expensive excess capacities, implying potentially enormous global welfare costs. For example, every major grouping/country wants to scale or set up (very expensive) semiconductor production. Even geopolitical allies such as the US and Europe are not effectively coordinating their efforts in such areas. Batteries for electric vehicles are heading for major overcapacity, based on projections for China, Europe and the US. China's battery capacity could be four times its needs by 2027.[9] In turn, such overcapacity could lead to dumping and trade retaliatory measures. Even though the

2 See OECD (2022) and Juhasz et al (2023).
3 See Hernandez (2004) for details.
4 World Bank (1993).
5 Juhasz et al (2023).
6 https://www.piie.com/sites/default/files/2023-12/wp23-15.pdf
7 Swanson (2024), New York Times.
8 *The Economist* (2024).
9 Dempsey and White (2023).

era of old industrial policies was not bereft of such concerns, the embrace of new industrial policies in all large countries/groupings could turn out to be more worrisome.

It is unlikely that countries pursuing new industrial policies are unaware of concerns about protection and inefficiency, even though their rhetoric might indicate otherwise. Instead, they might view such outcomes as acceptable costs of pursuing strategic autonomy and creating critical capacities.

New Industrial Policies Make Effective Use of Demand-Side Interventions

A distinct instrument used in the new policies is demand-side intervention, which target domestic consumption, such as subsidies to consumers for purchase of electric vehicles, lower taxes on such products, regulatory standards, and market creation strategies (e.g., charging infrastructure). Similar interventions are also being used for renewable energy. While such policies have been used in older industrial policies (such as higher taxes and tariffs for luxury products), the new demand-side interventions appear to have a wider appeal across rich and emerging markets. China is a very successful example of steering electric vehicle demand[10] through tax breaks and charging infrastructure, making it the world's biggest market for electric vehicles.

Conclusion

Policy makers are navigating a more complex, fragmented and crisis-ridden world compared to the time when industrial policies were helping East and South East Asian countries to enjoy accelerated growth and rapid gains in per capita income. Now, one crisis follows another – including the 2008 financial crisis, the US-China trade war, the pandemic, the Russia-Ukraine war and deepening of global fissures, and the Israel-Palestine conflict, along with the longstanding climate crisis. Policy makers have therefore taken on a wide range of tasks, including addressing climate-related transition, supply chain resilience, job quality, and social inclusion, among others. Many have also taken on objectives that are related to the economic and technological rise of China (and reactions thereof, especially from the advanced economies), including the pursuit of strategic autonomy and strengthening of national security. Overall, there is renewed interest in policy and academic circles around industrial policy, with the societal goals – which have necessarily to be addressed by every responsible government – helping to attach a new respectability to it.

Using large-scale subsidies and taxes to discriminate against foreign production, the new industrial policies raise significant concerns about protectionism. In addition, the breadth, continued geographical spread, and lack of coordination in implementation of these new policies could exacerbate societal waste and compound the excess capacity malaise, in turn leading to more protectionism.

Issues for Discussion

- South Korea was a distinct and successful example of older industrial policies. What is its approach to new industrial policies, how are these different from the past, and what are the different factors that have played a role in shaping these?
- China has always provided significant (and not very transparent) subsidies to industry as part of its approach to industrial policy. In that sense, it has foreshadowed a critical element of the new industrial policy exemplified by the US approach. How are China's more recent industrial policies different from its approach over the 1980-2008 period? It has also been a leader in demand-side interventions over the last decade, as seen in its steering of the electric vehicle market. What were the core elements of those interventions?
- Japan and India are two distinct examples of past Asian industrial policies. Japan's policies proved successful, India's less so. What changes have Japan and India made to adapt to the new industrial policy approach? What have been the critical elements that have influenced this new approach?

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RAKESH MOHAN

CHAIRPERSON'S REMARKS

Industrial Policy Now Has Two Faces

Jomo Kwame Sundaram

Allow me to make some opening remarks in my capacity as chair. But first, I want to record my appreciation to Rakesh for kindly inviting me to this conference. It is not often one gets an invitation after not seeing someone for 53 years. I last saw him in 1971. 1971 now seems like a long time ago, but it was a very important year, and we were both in Berkeley College, where the master was the pre-eminent international monetary economist of those times named Robert Triffin. 1971 saw the end of the Bretton Woods system with President Richard Nixon's withdrawal of the US from its obligations. Triffin characterised the outcome as a 'non-system', recognising the anarchy of the world economy, especially the international monetary system, and some of its implications.

I also want to emphasise that modern India's engagement with Asia goes back at least to 1947. Some of you are old enough to remember the meeting which Haksar organised in 1987 on the 40th anniversary of the Asian Relations Conference hosted by India just before it got independence. This was an important commitment by Nehru and the Congress leadership at that time. This view of post-colonial engagement was important as an alternative statement about Asia, different from that of Japanese militarism during World War Two, of a Greater East Asian Co-Prosperity Sphere.

Industrial policy is often seen as beginning with Friedrich List. But List was inspired by Alexander Hamilton. In many ways, the protectionist Boston Tea Party and Hamilton captured the spirit of the American Revolution, of creating the conditions for post-colonial national development.

List developed the major ideas in his *Principles of the National Economy* after reading Hamilton's writings from the late-18th century, although the title was deceptively similar to his earlier book, *Principles of the Natural Economy.*

Around the same time, 1868 was also the year of the Meiji Restoration, after a quarter of a millennium of Tokugawa shogun military rule. This transition was more than a palace coup, involving industrial policy to catch up with the industrialising West.

Meanwhile, public intellectuals like Dadabhai Naoroji and Sayyid Jamaluddin al-Afghani were developing their critical analyses of imperialism. These included how economies of the global South today were transformed by imperialism.

These contrast, for example, with economists like Harvard's Josef Schumpeter. The Austrian economist insisted that imperialism was a pre-capitalist atavism which would be wiped out by the rise, spread and ascendance of capitalism.

Today's Cold War geopolitics has seen an almost novel interest in industrial policy as a weapon. This was first articulated by President Joe Biden's National Security Adviser Jake Sullivan, who

recommended it as an economic weapon in the geopolitics of the new Cold War.

This contrasts significantly with long-standing interest in the global South over several decades. Investment and technology policy tools to accelerate economic growth and structural transformation in developing countries have a different purpose although some similarities and parallels undoubtedly exist.

For Asians, especially in East and South Asia, industrial policy has long been seen as a post-colonial development policy tool. For the Global South, it would be an analytical and policy mistake to conflate these two discourses, although lessons may well be learnt.

But in developing countries, there has long been interest in developmental industrial policy although this has long been frowned upon by neoliberal economists and the many institutions they control. The question of selectivity of industrial policy becomes quite different from, say, Verdoorn and Kaldor.

Industrial policy is much more than trade policy, involving a range of policy instruments. It is important to recognise the variegated aspects, dimensions, and tools of industrial policy. Besides investment, finance and technology, human resource development has been important.

The development of the Indian Institutes of Technology was an important initiative to support the development of industry. It probably contributed more to developing Silicon Valley and other industries in the US and elsewhere, reflecting the challenges posed by planning in mixed economies under globalisation.

For years, economists working on India have criticised its industrial policy, usually referring to Nehruvian industrial policy experiences. But rushing to such a conclusion, with sole reference to that experience, is tantamount to cherry-picking evidence.

India's pharmaceutical policy has been crucial to the health and wellbeing of the mass of its population. The availability of relatively affordable, often generic medicines in India has been crucial to its public health outcomes.

Bangladesh utilised its special dispensation as a least developed country (LDC) to export affordable generic medicines to many other poor countries.

But the Indian-South African initiative to suspend patent royalties to address the COVID-19 pandemic for its duration was blocked by the West. Effectively, the West reneged on its earlier agreement to the Public Health Exception crucial to restarting World Trade Organization negotiations after the African walk-out at the 1999 Seattle ministerial.

If not for India and Bangladesh, we would have much higher costs of medicines and much more ill health in the world today. I think it is also important for us to recognise this because it might not be reflected in terms of profitability and so on.

In the world today, a world of rival populisms, often coalitions, it is crucial to build coalitions to create the conditions for sustainable industrial policies to achieve the desperately needed acceleration of growth and structural transformation to achieve sustainable development in the face of stagnation and debt distress in the Global South.

This is an edited transcript of opening remarks by session chair.

PAPER 1

Japan's Industrial Policies: Past and Present

Shujiro Urata

I. Introduction

The world is witnessing a resurgence of industrial policies. In the past, industrial policies were primarily implemented by developing countries or those in the developmental stage, notably in East Asia, and were often criticised for being unfair. However, the landscape has changed significantly in recent years, with many developed countries now adopting industrial policies. It was the Global Financial Crisis (GFC) in 2007-08 that changed the attitude toward industrial policies in developed countries. Many countries including those in Europe and America implemented industrial policies such as corporate bailouts and injection of funds in the financial sector. In the 2010s demands for industrial policies did not diminish. One important factor was increased geopolitical and geo-economic tensions between the US and China, resulting in concerns over supply-chain disruptions and heightened competition in advanced technology. Another factor is the realisation of the importance of decarbonisation in response to climate change. These factors contributed to an increased need for government involvement in the form of industrial policies to deal with the problems/challenges. The expected role of the government through industrial policies was further heightened by the emergence of the COVID-19 pandemic, as it amplified the importance of industrial policy roles, starting from securing and producing essential goods such as pharmaceuticals to providing economic support for industries affected by lockdown measures.

In light of these observations, I review Japan's industrial policies in the past, covering the 1950-2020 period, and then discuss those being contemplated by the Japanese government at present. There seems to be no agreed-upon definition of industry policies. I interpret them broadly following Juhasz, Lane, and Rodrik (2023), which defines industrial policies as those government policies that explicitly target the transformation of the structure of economic activities in pursuit of some public goal. They assert that the goal is typically to stimulate innovation, productivity, and economic growth. They further point out that the coverage and tools of industrial policies are diverse. As for coverage, industrial policies deal with sectoral and regional, as well as different types of firms such as small and medium-sized enterprises (SMEs); for the tools, industrial policies cover fiscal, financial, as well as technical measures.

In the remainder of this paper, I review past industrial policies implemented by the Japanese government in section II, while section III analyses the industrial policies being discussed by the Japanese government, focussing on the discussions at Japan's Ministry of Economy, Trade and Industry (METI). Section IV provides some concluding remarks.

II. Japan's Past Industrial Policies[1]

I review Japan's past industrial policies by dividing the period into five sub-periods: late 1940s–1960s, 1970s–mid- 1980s, mid-1980s–late 2000s, late 2000s–early 2010s, and early 2010s–early 2020s.

The first period is the post-World War II reconstruction period (late 1940s to 1960s), during which, while effectively utilising trade protection, the fostering of heavy and chemical industries with economies of scale was pursued through a 'targeting policy.' This targeting policy aimed to shift surplus labour from declining industries to new industries, promote capital accumulation in specific industries, and achieve industrial upgrading through measures such as infant industry protection and disposal of excess facilities (rationalisation cartels). Basically, two criteria were used to select targeted industries. They

1 This section draws on Anbashi (2022), Odaka (2013), and Sumiya (2000).

were 'high income elasticity' and 'high productivity growth'. During this period in Japan, in order to compete against Western companies and industries, economically viable heavy and chemical industries were selectively nurtured, and measures were taken to prevent excessive competition through the restructuring of domestic industries. Additionally, in order to deal with declining and structurally depressed industries, 'industrial adjustment policies', such as the suppression of overproduction and investment and support for industrial transformation, were also implemented in industries such as textiles and coal.

Behind the implementation of industrial adjustment policy was increasing external competitive pressure in two different forms. One was trade friction and the other was changing status in international organisations. Trade friction in textiles with the US resulted in the implementation of textile agreements, which limited export volume, necessitating adjustment in production. Japan pursued trade liberalisation in various stages to meet the requirements since its joining the International Monetary Fund (IMF) in 1952 and the General Agreement in Tariffs and Trade (GATT) in 1955. Japan further liberalised its trade regime as it became a GATT Article 11 country in 1963 and IMF Article 8 country in 1964.[2] In addition, joining the Organization for Economic Co-operation and Development (OECD) in 1964 contributed to the opening of the Japanese market to foreign products. Johnson (1982) analyses the role played by the Ministry of International Trade and Industry (MITI) in post-war reconstruction and subsequent high growth, largely corresponding to this era.

The second period is characterised by stable growth and international trade friction (1970s to mid-1980s). Japan experienced two oil shocks, in 1973 and 1979, shifting from rapid growth to stable growth. In addition to pursuing energy security and policies for energy conservation and alternative energy sources, there was a demand for addressing serious pollution issues such as Minamata disease. Furthermore, increasing regional imbalance in terms of economic development within Japan became a serious issue. In this context, a new industrial policy for stable growth necessitated structural transformation towards knowledge-intensive industries. This, combined with regional revitalisation policies, led to initiatives such as the 'Technopolis Plan' (1983) to promote specific agglomeration, contributing to the advanced development of regional industries.

During this period, trade friction with the US and Europe arose basically in two different forms.[3] One was the rapid expansion of Japanese exports, causing adjustment problems such as unemployment in importing countries. The targeted products changed from textiles, colour TVs, and steel, and to automobiles. These problems were dealt with by 'voluntary' export restraints and building a production base in the importing countries through foreign direct investment by Japanese producers. The other cause of trade friction was the closed nature of the Japanese market, allegedly making it difficult for foreign firms to export to Japan. These trade issues resulted in a series of dialogues between Japan and the US as well as European countries. Regarding industrial policies in this period, measures for industrial adjustment continued to be implemented, responding to downturns such as the oil shocks.

The third period is the era of structural reform (mid-1980s to late 2000s). Under the Nakasone administration, the so-called 'Maekawa Report' was published in 1986. It set the goals of economic policy as resolving imbalances in the current account and improving the quality of life for citizens, with domestic demand expansion and market liberalisation being pursued as the means to achieve these goals. Deregulation, liberalisation, and privatisation were carried out in the fields of public utilities such as aviation, railways, telecommunications, and postal services. The distribution sector, which was criticised for its closed-ness by the US, was deregulated. Under the slogan 'from big government to small government', the focus shifted from supporting specific industries through industrial policy to actively pursuing structural reform aimed at enhancing competition and market functioning. In the financial sector, financial liberalisation, also known as the 'Financial Big Bang,' was implemented in the late 1990s. Additionally, Japan came to be recognised globally as an 'economic superpower,' and external pressure for economic structural reform was exerted through Japan-US structural negotiations, contributing to such policy shifts.

In the 1990s and beyond, traditional industrial adjustment policies were phased out, and a market-oriented industrial revitalisation policy was adopted. Implementation of a market-oriented, industrial adjustment/revitalisation policy was strongly influenced by a neo-liberal trend in policy formulation, which was spreading in the world in the name of the Washington Consensus. Policy makers and business people were hoping that the adaptation of a market-oriented policy would revitalise the Japanese economy, which was suffering from a long recession after the burst of the bubble economy in the early 1990s. It should be noted that the reorganisation of government ministries and agencies was carried out to improve the effectiveness and efficiency of the bureaucracy, by getting rid of silo-based systems. As a result of this reorganisation, MITI was transformed into the Ministry of Economy, Trade and Industry (METI) as its policy coverage expanded to include overall economic policies including science and technology, labour and welfare, etc., in addition to industry and international trade.

The fourth period (late 2000s to early 2010s) was characterised by emergency measures taken in response to economic crises. Japan faced significant economic difficulties stemming from the Global Financial Crisis (GFC) in 2007-08, as well as the unprecedented disaster of the Great Eastern Japan Earthquake in March 2011. To prevent companies from falling into a crisis due to abrupt external demand shocks, domestic demand expansion measures such as eco-car subsidies were implemented,

2 GATT11 prohibits the use of quantity restriction of imports, while IMF8 prohibits the use of exchange rate policies for balance of payments reasons.

3 The characteristics of trade friction may be classified into the following two types – macroeconomic and microeconomic. The macroeconomic type addresses the overall trade balance between two countries, while the microeconomic type addresses trade problems, exports and/or imports, in specific products and industries.

along with corporate financial policies for small and medium-sized enterprises (e.g., the Small and Medium-sized Enterprise Financing Facilitation Act). Concerns about rapid increases in unemployment also led to the introduction of employment adjustment subsidies, which provided partial subsidies for benefits such as leave allowances when companies aimed to maintain employment for workers. Thus, during this period, industrial policy focused more on emergency responses rather than industrial promotion or structural adjustment. The fact that the GFC originated in the US, the centre of neo-liberalism, led to a decline in confidence in market-oriented policy and raised an interest in the role of the government in economic activities in many countries in the world, including Japan.

The fifth period corresponds to the era of 'Abenomics' implemented during the second Abe administration (early 2010s to early 2020s). Economic policies aimed at breaking free from long-term deflation, and expanding wealth were pursued. Specifically, the 'three arrows' strategy consisting of bold monetary policy, flexible fiscal policy, and a growth strategy aimed at stimulating private investment was implemented. The goal was to achieve a positive economic cycle where improved corporate performance would lead to increased employment and income, further driving up consumption. The basic policy stance behind the growth strategy was deregulation and liberalisation, in order to revitalise the economy by promoting industrial adjustment and innovation. Industrial policy under Abenomics was also implemented as part of growth strategies such as promoting the Fourth Industrial Revolution (artificial intelligence, Internet of Things, big data, etc.) and advancing 'Society 5.0'.

One of Japan's important industrial policies that has not been discussed explicitly yet is for small and medium-sized enterprises (SMEs). SMEs have been an important target of Japan's industrial policies for several reasons. Many SMEs support large manufacturing firms by supplying parts and components to them. Typical cases are found in the automobile and electronics sectors, where an extensive subcontracting system has been arranged. Developing competitive SMEs is crucial for the production of competitive products. Another reason for the importance of assisting SMEs, particularly start-up SMEs, is to realise their dynamism, thereby contributing to economic revitalisation and growth. One of the characteristics of SMEs is their lack of resources, such as financial and human resources, which are necessary to achieve successful development. Industrial policies can fill this gap. There are social and political factors that have supported industrial policies toward SMES. SMEs have an important position in the Japanese economy and society, as their shares in the total number of firms and workers are large, more than 99 per cent and 70 per cent, respectively. As such, the stable development of SMEs would contribute to social stability, and provision of economic assistance to them would generate political support from employers as well as employees of SMEs. These observations indicate that industrial policies for SMEs have two different characteristics, promotion and protection. The first two factors or motives may be characterised as promotion, while the third factor as mostly protection.

So far, I have discussed Japan's industrial policies, which have been applied mostly in manufacturing and, to a lesser extent, in services. Although it may not be considered an industrial policy, it should be pointed out that the agriculture sector has been heavily protected for a long time, mainly in the form of import protection and production subsidy.

Coming back to the discussion on Japan's industrial policies applied in manufacturing and service sectors, it is important to understand that MITI's and METI's industrial policies were formulated through close communication with the private sector, informally as well as formally, via the Industrial Structure Council, which has been set up by MITI and METI. Having noted this, the leadership role of MITI and METI in the discussions of industrial policies declined over time, as the private sector achieved successful growth. The major instruments used for the implementation of industrial policy are fiscal and financial measures. Fiscal measures include taxes and subsidies, while financial measures are mostly preferential loans, such as no-collateral and/or low-interest loans. Beside these formal policy measures, the announcement of the industrial policies has a signalling effect on Japanese businesses, by indicating the future direction of the economy and industry envisaged by the government and representatives of Japanese businesses, as industrial policies are formulated through discussions involving business, academia, and policy makers at the Industrial Structure Council, as noted earlier.

An important issue is to examine if the industrial policies were effective in achieving their goals. Empirical analyses of this subject in East Asian countries have been performed extensively, as industrial policies in East Asia have attracted substantial attention. Earlier econometric studies tend to examine the relationship between industrial policies and economic performance, such as productivity, using sectoral data, while more recent studies try to examine their impact using firm or plant-level micro data. The former type of studies tends to suffer from various problems such as endogeneity between industrial policies and economic performance. In other words, these studies only examine correlation, not causality. The latter micro data studies address this issue and conduct more rigourous analysis.[4] Another problem facing both types of studies is the difficulty in discerning the time lag between the implementation of policies and their impacts.

One well-known study of the former type on Japan's industrial policies is Beason and Weinstein (1996), which examined the impact of targeting policies in Japan from 1955 to 1990s by focusing on 13 industries. They examined if policy support (loans, subsidies, tariffs/quotas, taxation) increased total factor productivity (TFP) in targeted industries. Their analysis revealed that Japan's targetting policies were concentrated on industries experiencing diminishing returns to scale or low growth. They also found that targetting policies did not increase TFP. Based on these findings, they concluded that targetting policies

4 See Juhasz, Lane, and Rodrik (2023) for the problems in conducting econometric analysis.

did not achieve the expected outcome.[5] This finding, which is contrary to a more common view such as Johnson (1982) was challenged by Diewert et al. (2011). In their detailed study of three industries, textiles, paper and pulp, and electrical machinery using plant-level data covering 1964-88, Diewert et al. found that MITI's policies, both the promotion and adjustment policies, were successful in raising TFP. It should be noted that their evaluation of MITI's policies was based on casual observation and not based on statistical analysis or econometric analysis, unlike Beacon and Weinstein's study.

An increasing number of studies began to be conducted to examine the impact of industrial policies in Japan by applying rigourous statistical methods. These studies analyse specific programmes such as the subsidy for R&D and deregulation in specific sectors using firm or plant-level data.[6] These studies find mixed results, that is, in some cases the expected impacts were observed, but not in all cases.

III. Japan's Industrial Policies: Present

Japan's new industrial policies are currently under formulation. METI's Industrial Structure Council, whose members consist of representatives from the private and public sectors as well as academics, has been given the task. METI's Industrial Structure Policy Division plays a secretariat role. I would like to note that my discussion in this section is based on publicly available materials, which are obtained from the website of the Council.[7] As the final version of the industrial policies has not been decided, my discussion should be treated accordingly.

Before discussing the possible contents of the industrial policies, it is important to understand the background of the new industrial policies, that is, the situation that the Japanese economy is faced with at present. We can divide the discussion of the background into two aspects, internal and external. Internally, the Japanese economy has been experiencing low economic growth since the burst of the bubble economy in the early 1990s, frequently referred to as the lost three decades. The Japanese economy grew at an average annual rate of 4.5 per cent from 1980 to the 1990s, and then it declined to register 0.7 per cent growth from 1991 to 2022.

The Japanese economy and society are faced with a demographic challenge, which makes it difficult for Japan to promote economic growth. Japan's population continued to decline after reaching a peak at 128 million in 2008, to 125 million in 2022. If the trend continues, Japan's population is projected to decline to 63 million in 2100, half the population of 2022. Behind the trend lies the declining birth rate. The birth rate declined from 9.5 per 1,000 in 2000 to 6.8 in 2020. The declining population and birth rate, coupled with long life expectancy, result in an aging population. The proportion of people aged over 65 in the total population increased from 17.4 per cent in 2000 to 29.0 per cent in 2022, and is projected to rise to 41.2 per cent by 2100. By contrast, the proportion of working-age population (people aged between 15 and 64), declined from 68.1 per cent in 2000 to 59.4 per cent in 2022, and is projected to decline to 51.1 per cent in 2100. A declining and aging population leads to a shortage of labour and an increase in government expenditure in the form of social security, lowering economic growth. Another challenge is the declining competitiveness of the Japanese economy. According to the IMD's competitiveness report, Japan's ranking fell from 17 in 1997 to 35 in 2023, among 64 countries. Among the different categories, productivity and efficiency, and management practices are ranked low at 54 and 62, respectively.[8] These observations indicate pessimistic economic prospects for the Japanese economy.

Turning to the external environment that Japan is faced with, we observe increased uncertainty and risks in the geopolitical and geo-economic environment as well as in economic development. Intensified geopolitical tensions can be found in several cases, most notably the US-China trade and technology rivalry, Russia's military invasion of Ukraine, and the military conflicts in the Middle East. The problems due to climate change have become more serious. Faced with these problems and challenges, many countries, especially advanced countries, have opted to increase the involvement of the government in economic activities, mainly in the form of industrial policies. For example, the US government enacted the CHIPS (Creating Helpful Incentives to Produce Semiconductors for America) and Science Act and the Inflation Reduction Act (IRA) in 2022, while the EU announced the Green Deal Industrial Plan in 2023.

Against the backdrop of pessimistic future prospects for the Japanese economy and increasingly uncertain geopolitical and geo-economic prospects for the world economy, the Japanese government is preparing its economic and industrial policies. Considering these observations, the main objective of Japan's new industrial policies is to achieve sustainable and continuous economic growth by creating a virtuous cycle of domestic investment, innovation, and income growth. Specifically, the government is eager to generate optimistic expectation towards future economic prospects in the private sector, as the government sees a sign of favourable development such as increasing investment and start-ups, and does not want to miss the opportunity to push and strengthen the new trend.

In order to achieve the objective, the government is contemplating 'mission-oriented' industrial policies, with a focus on achieving or establishing the following eight societies/sectors/regions with some selected specific targets:

1. Carbon-neutral society (GX): 150+ trillion yen public-private investment over the next 10 years, with 20 trillion yen of government support
2. Digital society (DX): Create demand for new services through digitalisation and increased capital

5 Noland (2007) reports a similar result.
6 See Ambashi (2022) and Morikawa (2020).
7 Ministry of Economy, Trade and Industry (2023)
8 https://worldcompetitiveness.imd.org/countryprofile/JP/wcy

investment including software; for example, expected sales of over 15 trillion yen by companies manufacturing semiconductors (approximately 5 trillion yen in 2020)

3. Economically secure society (economic security): Increase autonomy, ensure superiority and indispensability, and maintain international order

4. New health society: Increase healthcare industry market sales outside of public insurance from 24 trillion yen in 2020 to 77 trillion yen in 2050

5. Disaster-resilient society: Expand sales of products contributing to mitigation and adaption to the negative impacts of climate change

6. Bio-manufacturing sector: Increase sales in bio-related markets from 60 trillion yen in 2018 to 92 trillion yen in 2030

7. Resource-autonomous circular economy: Increase resource recycling market sales to reach 80 trillion yen in 2030 and 120 trillion yen in 2050

8. Inclusive growth in the region: Contribute to coping with a declining birth rate and to developing small and medium-sized enterprises (SMEs).

Several important elements may be identified about the new industrial policies from the METI's interim report. First, the new industrial policies cover a wide range of sectors including digital industry, bio-manufacturing, and others. This reflects the fact that the Japanese economy is faced with a variety of challenges and problems. Second, the Japanese government realises the need for proactive industrial policies to overcome the pessimistic mood of Japanese society and businesses, in order to achieve sustainable and continuous economic growth. The realisation of this view is due to the long period of low economic growth since the early 1990s, during which the involvement of the government in economic activities was reduced through deregulation and liberalisation policies. Third, despite the increased role of the government, it realises the important and major role of the private sector in determining the level of economic activity or achieving economic growth. As such, the government is trying to play the role of catalyst and work closely with the private sector in formulating and implementing industrial policies.

IV. Conclusions

The Japanese government formulated and implemented various types of industrial policies in order to deal with the problems and challenges of the time. Industry-targeting industrial policies were adopted in the early post-WWII period to develop heavy and chemical industries, which were considered crucial in achieving economic growth. Rationalisation policies were implemented to avoid excess supply situations and to enable competitive firms to exploit the benefit from economies of scale. Industrial-adjustment policies were implemented to shift resources from declining to rising industries, mainly in response to external pressure imposed by the US and Europe. Energy and environmental policies began to be adopted in the early 1970s and continued until today. The importance of regional revitalisation policies increased as economic activities in rural regions declined. Despite a variety of industrial policies being implemented by the Japanese government, the role of industrial policies in Japan appeared to be diminished, except for the period of urgency or crisis, as deregulation, privatisation, and liberalisation became the norm in economic policy in Japan and the world. I would hasten to add that the results of empirical studies on the impact of industrial policies on economic growth/productivity are mixed, and thus there is a need to conduct further research on the subject.

The situation changed recently. The role of the government began to rise in many countries, especially many developed countries in the world, because the countries are faced with problems and challenges such as geopolitical and environmental problems, which are difficult to be dealt with by market mechanisms or the private sector alone. Against this background, the Japanese government has begun to formulate new industrial policies, which increase the involvement of the government in economic activities. For Japan, in addition to the changing external environment noted above, prolonged economic recession or low economic growth made the government realise the need to adopt a new industrial policy, because a growth strategy relying on the private sector did not achieve the expected outcome. Having noted the increasing importance of the government, it needs to be understood that the government plays the role of a catalyst and jump-starts growth dynamism, which needs to be driven by the private sector.

Before closing I would like to make two points. First, once the new industrial policies are formulated and implemented, they need to be monitored at appropriate intervals to see if the expected outcomes are achieved. If the policies are found to be not effective, necessary adjustments have to be made without delay. Indeed, a study by the World Bank (1993) considers flexibility in policy application a factor for successful industrial policy in East Asia. Second, close communication with like-minded countries or friends regarding industrial policies is important to make industrial policies effective in achieving the objectives. This is because the Japanese economy, like other economies, is closely intertwined with foreign countries. As such, the expected effect cannot be obtained unless there is close coordination with foreign countries. In this regard, it is important to discuss or explain Japan's industrial policies with like-minded countries before finalising them.

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Discussant Comments

Ong Kian Ming

I am putting on my hat as a former Deputy Minister of International Trade and Industry (MITI), someone who was part of the taskforce for the New Industrial Masterplan 2030 that was announced on September 1, 2023, which proposed a 'mission-based' approach to industrial policy to replace the sector-based approach in previous masterplans, as a board member of the Malaysian Investment Development Authority (MIDA), the oldest and most-established investment promotion agency in Malaysia.

Three Challenges (3 Ms)

1) The challenge of MEASURING what constitutes success or shortcomings in industrial policy

2) The challenge of MOBILISING effective assistance to SMEs as part of industrial policy

3) The challenge of MITIGATING the negative effects of the unintended consequences of industrial policy

Three Opportunities (3 Cs)

1) Areas of potential COOPERATION, especially in digitalisation and sustainability initiatives (National Digital IDs, carbon adjustment mechanisms)

2) Areas of potential CONVERGENCE, especially in social inclusion, labour protections, healthcare protection, environmental protection, and equitable growth (e.g., housing for workers in the manufacturing sector and industrial estates)

3) Areas of potential CREATIVITY, including the creation of 'sandboxes' for start-ups and entrepreneurial innovation, experimentation and learning (media and entertainment, VC and PE investments)

Three Action Items (3 Ss)

1) Small projects (to build trust and capacity)

2) Sustainable partnerships (to institutionalise initiatives, projects and dialogues)

3) Social media (to increase reach and influence)

PAPER 2

Industrial Policy at Different Stages of Development: The Korean Experience and Beyond

Keun Lee

Introduction

Since the rise in US-China tensions and the 2020 Pandemic, industrial policy has revived globally. An earlier work, by Johnson (1982) defined industrial policy as policies that improve the structure of domestic industry in order to enhance a country's international competitiveness. It is typical for many developing countries to suffer from capability failure (Lee 2013c). Then, industrial policy should go beyond correcting market failure, but aim at overcoming capability failure, as argued by Lee (2013c) in a chapter in a notable volume by Stiglitz and Lin (2013).

The view of market failure focuses on providing optimal incentives to correct externalities associated with public goods like R&D, with a hidden assumption that firms are already equipped with capabilities. However, in the absence of capabilities, providing incentives alone does not propel agents to make a move or start doing innovation, for example. In this sense, it is not picking winners but picking good students and allowing them time for learning and building capabilities, until they become able to compete with incumbent firms from developed countries.

In other words, this paper considers capability building (not the state-market dichotomy) as the essence of the Korean model of catch-up, and is of view that because Korea had built and enhanced the capabilities of private firms, it was able to sustain growth for several decades until it joined the club of high-income economies (Lee 2013b). If we consider industrial development as a long-term process that takes over 10 or 20 years, it is natural for the tools of policy to change over the course of economic growth. Such a dynamic view of industrial policy is warranted, because the capability levels of the beneficiaries of such interventions would change over time as well.

Specifically, this paper discusses the following tools of industrial policy which have been practiced in Korea at different stages of its development. First, tariffs to protect infant industry (Shin and Lee 2012). Second, technology imports by licensing to promote the building of absorptive capacity (Chung and Lee 2015). Third, entry controls which guaranteed rents to be paid for fixed and R&D investment (Jung and Lee 2010). Fourth, public-private joint R&D to break into higher-end products and sectors (Lee et al 2005; Lee 2013a: Ch. 6). While these tools look different in their concrete contents, they share the important commonality of allowing some rents for the targeted sectors or firms, so that such rents (extra profits) may be used to pay for building variants of capabilities, such as production capabilities in the case of tariffs or technology licensing in the 1970s, investment capabilities in entry control in the 1980s, and technological (R&D) capabilities in the case of public-private joint R&D in the 1990s.

Industrial Policies at Different Stages of Development

Technology Licensing for Absorptive Capacity

The concept of absorptive capacity (AC) was first introduced in by Cohen and Levinthal (1989) as the ability of a firm to identify, value, assimilate, and exploit knowledge from the environment. AC is also recognised as an important binding constraint in the development of latecomer economies. Relying heavily on Chung and Lee (2015), this section addresses the question of: what is the origin of AC in Korea? How can we tell whether this capacity is established in a firm? These questions are particularly relevant in the context of latecomer countries, in which firms are usually uncertain about conducting their own R&D and continue to rely on imported technology by specialising in assembly-type production.

As a latecomer economy, Korea has successfully transformed itself from a technology-importing to a technology-generating country. Korean firms only began to conduct in-house R&D in the mid-1980s after undergoing a period of learning, assimilating, and adapting foreign technologies (OECD, 1996; Lee, 2013b). Chung and Lee (2015) observed that the number of foreign technologies acquired by Korean firms increased from as early as the late-1960s, followed by an increasing trend towards private R&D two decades later. In other words, a significant increase in foreign technology inflow preceded local R&D efforts and innovation outcomes in Korea. Many researchers assert that access to exter-

nal knowledge is especially important in the development of latecomer firms (Lee, 1996; Park and Lee, 2006).

In 1960, the government addressed two objectives relating to foreign technology acquisition with the Foreign Exchange Control Act. The first was to ensure that foreign exchange, which became scarce after the Korean War, would only be used for critical technologies. Second, the government wanted to use acquired technology as a stepping stone on which Korean firms could build their own technological capabilities (Korea Development Bank, 1991). The scarcity of foreign exchange during the 1960s compelled Korean firms to seek government approval prior to signing a contract with a foreign counterpart. Licensing contracts to import foreign technologies took three forms: know-how-only acquisition, know-how-and-patent-rights acquisition, and patent-rights-only acquisition. Know-how-only acquisition typically consists of technical services and training that are bundled with relevant documents. Know-how-and-patent-rights transfer consists of technical services, training, and documentation protected by the patent system. Patent-rights only consists of patent-rights licensing. The finding by Chung and Lee (2015) from the analysis of this database is as follows.

First, they found that contracts for know-how licensing dominated in the early years, whereas contracts that involve patents followed later. This pattern may imply that those firms that successfully assimilated basic operation skills and elementary process technology through know-how acquisition advanced to the acquisition of technologies that involve patent rights at later stages. These contracts include not only printed information and blueprints, but also technical services and training information. Expatriate engineers usually come to Korea to ensure that the initial operation of new facilities goes according to plan. Various types of training, particularly overseas and on-site training, were arranged or provided by the firms' foreign suppliers of facilities and equipment.

For instance, after Hyundai entered into an agreement with Ford to assemble compact cars on a semi-knocked-down basis, Ford transferred 'packaged' technologies to Hyundai with an accompanying set of explicit knowledge, such as blueprints, technical specifications, and production manuals. Ford also provided tacit knowledge to Hyundai, sending ten Ford engineers to Hyundai and training Hyundai engineers at Ford sites in procurement planning, procurement coordination, production engineering, process engineering, production management, welding, painting, after-service, and marketing (Kim, 1998).

Finally, the econometric analysis in Chung and Lee (2015) shows that know-how licensing associated with imported capital led Korean firms to build AC and then to start in-house R&D, whereas patent-only licensing was not significantly related to being able to conduct R&D. Therefore, a substitution effect may be observed between the introduction of foreign patents and the initiation of own R&D activities at the early stages of development. A similar econometric exercise for the second step shows that conducting in-house R&D leads firms to generate innovations, in terms of either patent applications or increased productivity, during the later stages of their development.

Infant Industry Protection by Tariffs

One of the most traditional industrial policy tools come in the form of infant industry protection by tariffs. However, empirical studies report conflicting results on the effectiveness of tariffs. Lee (1996) found no impacts of tariffs on TFP (total factor productivity), such that nominal tariff was negative and significant to the growth rate of labor productivity and total factor productivity (TFP) at the sectoral level in Korean industries from 1963 to 1983. In contrast, Shin and Lee (2012), using the same period and sectoral data as Lee (2006), find that tariff protection, especially when combined with export market discipline, leads to the growth of export share and RCA (revealed comparative advantages). They also argue that the goal of such industrial policy was not productivity at the early stage – as in the 1970s – but output or market-share growth.

An example of success with tariffs would be the case of Hyundai Motors established in 1970. Hyundai's first own-brand car was Pony with 44 per cent market share in Korea in 1976. However, it was protected by as high as 82 per cent tariff rates on imported cars, such as Japanese cars. While its domestic market price was about USD 4,500, it was exported to the US market at the price of USD 1,850. In other words, without such dumping, Hyundai cars were not able to compete with other cars – this was possible owing to the extra profits associated with an oligopoly market situation based on tariffs; at that time, Japanese or German cars in the similar segment were sold at USD 2,300 in US markets. In other words, domestic profits compensated for the loss in foreign markets, and such guaranteed profits helped Hyundai to survive and pay for fixed and R&D investment for expansion.

Thus, it can be argued that if Korea had been opened up from the beginning without tariffs, the Korean economy would not have been as successful in promoting indigenous firms and sustaining their catch-up in market shares. A hidden assumption of trade liberalisation is that local firms are sufficiently competitive to potentially compete against foreign companies or imported goods. This assumption is not true in many cases. In such circumstances, naive trade liberalisation may lead to monopoly by foreign goods or the destruction of local industrial bases.

A smart or better opening strategy, as discussed in Shin and Lee (2012), is 'asymmetric opening' in which latecomer economies liberalise the import of capital goods for the production of final or consumer goods, while protecting their consumer goods industries by charging high tariffs on imported goods. Actually, Korea implemented an asymmetric tariff policy for its consumer and capital goods; for instance, extremely high tariffs for consumer goods (e.g., around 70% for household electrical appliances in the 1970s) which were promoted as export industries; but considerably lower tariffs for capital goods, such as machineries, which Korea had to import for its assembly industries, mostly in the consumer goods sector.

Entry Control for Effective Competition

Besides tariff-based protection, another form of industrial policy in Korea was entry control. The idea simply is, for instance, that five firms with profits in a

sector in effective competition is better than 10 firms with no profits in perfect competition. Such a practice of entry control has been one of the typically used tools of industrial policy in the past in Japan, and was copied in Korea too. In Korea, the tradition of implementing entry controls in many sectors has been regarded as a sort of industrial policy copied from Japanese practices (Johnson, 1982).

This practice also has the effect of yielding rates of return that are higher than the interest rates, which is good for boosting private investment into manufacturing, which would correspond to low rates of return with longer time horizons. This way, manufacturing sectors were able to earn 'rents' associated with entry control by the government. Industrial policy was to find out the 'optimal number of the firms' in each sector in consideration of the market size, so that the admitted firms are sort of guaranteed a minimum level of profits (rents), which can be a source of investment funds for the next period. Making the rate of return in certain industrial sectors higher than interest rates can be another means of industrial policy, especially in an economy facing high interest rates.

Of course, one can point out that the protection of local firms by tariffs and entry control will lead to an oligopolistic domestic market. However, a study by Jung and Lee (2010) demonstrates that monopoly rents can be used to fund R&D investments because firms are exposed to the discipline of world export markets, while their privileged protection from the government is not free but linked to their export performance. In other words, such a combination of rent-generating protection in the domestic market and discipline from the world markets is one of the most important aspects of industrial policy in Korea during the catching-up stage (the mid-1980s and 1990s).

Public-Private Joint R&D

Industrial policy at the final stage would be a public-private R&D consortium which can serve as an important vehicle to break into higher-end segments or sectors which require bigger amounts of capital and risk. One of the first examples would be the government-led R&D consortia in the telecommunication equipment industry, specifically the accompanying local development of telephone switches. This led to the successful localisation of telephone switches in the 1980s and 1990s in several latecomer countries, including China, Korea, India, and Brazil (Lee, Mani, & Mu, 2012). Starting with Brazil in the 1970s, followed by Korea and India in the mid-1980s, and finally by China toward the late 1980s, all of these countries crafted a state-led system of innovation in the telecommunication equipment industry, with a government research institute at the core. The research institute developed more or less 'indigenous' digital telephone switches that were then licensed to public and private domestic enterprises. In these four countries, a common pattern in the indigenous development of digital switches was the tripartite R&D consortium among the government research institutes (GRIs) in charge of R&D functions, state-owned enterprises (SOEs) or the ministry in charge of financing and coordination, and private companies in charge of manufacturing at the initial or later stages.

However, the subsequent waves of industry privatisation and market liberalisation in Brazil and India versus the consistent infant industry protection in Korea and China differentiated the trajectories of the industries in these four countries (Lee, Mani, & Mu, 2012). At one extreme, the indigenous manufacturers of China and Korea took over from the importers and MNCs. Their enhanced capabilities in wired telecommunication, which were accumulated over the preceding decades, led to the growth of indigenous capabilities in wireless telecommunication as well. At the other extreme, Brazil and India have increasingly become net importers of telecom equipment, and their industries are now dominated by affiliates of the MNCs.

While the above case of telephone switches relates to localising somewhat mature technologies, the same public and private joint R&D can be used to try leapfrogging into emerging technologies or products. A Korean example is digital TV development, which can be regarded as the decisive and final watershed that enabled Korea to begin taking over from Japan in the TV business. In light of the above, the success probability of leapfrogging may be higher when a new techno-economic paradigm or a new generation of technologies begins to emerge. Perez and Soete (1988) and Freeman and Soete (1997) observe that some latecomers may be able to leapfrog older versions of technology, bypass heavy investments in previous technology systems, and jump on new technologies to take over the market from the incumbent firms or countries. This leapfrogging strategy makes more sense at the time of a paradigm shift, because at that time, every country or firm is a beginner in using the new techno-economic paradigm, and the entry barriers tend to be low.

Korea's catch-up with Japan in the development of high-definition TVs (HDTVs) would not have been successful if Korean electronics companies, such as Samsung and LG, did not target the emerging digital technology-based products more aggressively than Japanese companies that opted to continue manufacturing the dominant analogue products. Leapfrogging is more likely to happen when there are more frequent changes in technologies or generation changes in products, and when there are certain technological sectors with such features. As argued, such features are closely linked with the length of the cycle time of technologies, as they indicate the speed with which technologies change or become obsolete over time, paving the way for the continued emergence of new technologies. We can reason that it is advantageous for qualified latecomers to target and specialise in such short-cycle technology-based sectors. Although this is considered a risky venture, it would prove to be a logical one because the latecomers do not have to rely substantially on the existing technologies dominated by the incumbents; moreover, there are always more growth opportunities associated with ever-emerging technologies.

Finally, we should note the importance of carefully handling the risks involved in opting to implement the leapfrogging strategy. As Lee et al. (2005) explains, one of the biggest risks is choosing the right technologies or standard in the ex-post sense. In the competition for standard setting and market creation, the role of the government is to facilitate the adoption of specific standards, thereby influencing the formation of markets at the right time.

Concluding Remarks

Given that structural change in an economy is a long-term process, the idea of adopting different policy tools over time is consistent with the reasoning that industrial policy should deal with the various dimensions of capabilities of firms and industries in the latecomer countries. Different tools are necessary, depending on whether the target involves simple operational or production capabilities, investment capabilities, or technological capabilities at the advanced level.

The Korean experience indicates a dynamic shift in the form of government activism from traditional industrial policy (tariffs and undervaluation) in the early stage of development, to technology policy (R&D subsidies and public-private R&D consortia) in the later stages. This dynamic shift is required for a developing country to evolve from a low-income to a middle-income status, and eventually move on up to a higher-income status. It can be argued that without such a shift, any country may be stuck in the so-called middle-income trap, in which it struggles to remain competitive as a site for low-cost, high-volume production (Lee, 2013a).

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Discussant Comments

Yang Yao

I am sorry that I cannot be at the conference in person. My passport was in the process of renewal, which got delayed, so I could not come in person this time. I hope next time I will have the opportunity to come in person. I am really happy to comment on Professor Keun Lee's presentation today. Professor Keun Lee is also a friend of mine, so I know his research quite well. In today's presentation, Keun provided a very comprehensive review of Korea's approach to technological catch up. To me, two things are very important in his presentation: one is the role of the government, the other is the role of industrial policy. There has been a huge debate about the success factors in Asia, and the role of the government has always taken central place. What Dr Keun Lee says is that the issue is not whether the government should play a role in economic catch-up, it is actually about how to approach the problem. The government should play a role in economic catch-up, particularly in the early stages, but how it should do so is the central issue.

What we can learn from Professor Keun Lee's presentation is that the best way for the government to play a role is not to replace the market, but to help the market formulate strategy for technological catch-up. The government can provide funds and guidance, but the private sector should play a central role in the process. I think that's a very important lesson for developing countries. At present, there are two extreme views. One is that the government has no role in economic catch-up. This has been proven wrong by the East Asian experience. The other extreme is that the government should do everything to replace the market, to establish state-owned enterprises, and state-owned research institutions. Professor Keun Lee's presentation tells us that these two extreme views should be abandoned. We should adopt a more pragmatic approach towards the role of the government. The second lesson we can learn from Keun Lee's presentation is that there needs to be an industrial policy. There are still debates about the merits of industrial policy. Keun tells us we should not doubt the role of industrial policy. What we should be concerned about is how we should conduct industrial policy. In his presentation, he emphasises knowledge-building and capacity-building as objectives of industrial policy. I think that's very important for other countries to follow.

In China even today there are debates about the roles of the government and of industrial policy. In terms of China's economic growth over the last 45 years, we have to say that it has been a result of the process of the government retreating and the market advancing. So, in general we can say market reform is at the centre of China's economic success. But the role of the government cannot be ignored. In China's reform, the government had to play a large role. In terms of industrial policy, China has had its failures and success: in the past industrial policy failed more. But in more recent times, industrial policy has been more successful. High-speed rail and the EV industry are important success stories. Professor Keun Lee's presentation also provides insights for India. India used to be like China. Adopting economic planning since 1992, India has moved to a market-based approach for economic growth, but it is probably time for India to rethink the roles of the government and industrial policy; maybe not to follow all the ways of economic planning but to rethink along the lines suggested by Professor Keun Lee. Let me stop here. Thank you.


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ANOOP SINGH
RADEN PARDEDE
SHYAMALA MENON
NOBUO TANAKA
BYUNG-IL CHOI
DANNY QUAH


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SESSION 3

New Industrial Policies and Geo-economic Fragmentation: Implications for Trade and Global Value Chains

SESSION NOTE

Amita Batra

Some advanced economies are exhibiting a growing appeal for inward-looking new industrial policies, retreat from multilateralism and concentration of trade and investment flows along geopolitical alignments. These developments have arisen from the challenge of climate change, emergence of US-China geopolitical, economic, trade and technology competition, economic after-effects of the Covid pandemic, combined with the ramifications of ongoing conflicts, and uneven distributional effects of trade. Increased and selective use of protectionist trade policies and cross-border trade restrictions, undermining the rules-based trade order, are also being made on the grounds of national security.

Global value chains (GVCs), driven by differential costs of labour and other inputs, have propelled trade and manufacturing specialisation, productivity, and efficiency enhancement well into the second decade of this century. This was evident in the predominant share of parts and components in total world goods trade over the last two decades. Reflecting the same trend was the observed increase in the contribution of GVC trade to about half of world trade over the same period. The trend of production fragmentation was supported by the ICT revolution, the WTO, and the evolution of deep trade agreements. Encompassing policy areas and disciplines like investment, competition policy and intellectual property rights that went beyond the traditional trade policy instruments and were not regulated by the WTO, the deeper preferential trade agreements (PTAs) have been instrumental in enabling developing country integration with GVCs. The depth of the agreements was observed to assist economies to integrate with industries with higher levels of value added.

Recent systemic shocks and geopolitical events have caused major disruptions in GVC operations with a consequent impact on the flow of goods, services and capital, essential commodities like food and medicines, inflation, and even national security. Preventing disruptions and ensuring supply chain resilience has therefore acquired primacy for most developed and developing nations and is being sought through strategies aimed at a reduction in single-source import dependency and moving production to trusted locations. The trend towards GVC reshoring and nearshoring was triggered by the North Atlantic financial crisis more than a decade ago. It is being reoriented along the lines of friend-shoring or ally-shoring. This includes diversification or relocation of investments by large corporations to trusted partners/countries with similar values and away from countries of concern, primarily China. This is also increasingly being driven

by an element of vulnerability arising from the concentration of production and processing/refining capacity in the critical minerals sector in China.

Along with corresponding policy measures in other countries, prominent examples of policy legislations in this regard are the Inflation Reduction Act and the CHIPS and Science Act in the US, which incentivise economic integration within North America and input sourcing from FTA partners, while discouraging any inputs from 'countries of concern' implying primarily China. These policies have focussed specifically on the semiconductor, critical minerals, and electric vehicles battery sectors. Similarly, the European CHIPS Act that entered into force in September 2023 encourages production in the semiconductor industry through partnerships with like-minded countries. Also, EU's "Important Projects of Common European Interest (IPCEI)" promotes supply chain cooperation among EU member economies. These are billion-dollar state-funded initiatives with the objective of giving a boost to domestic research and manufacturing in primarily semi-conductor production, strategic value chains, and green energy transition. Aimed at 'strategic autonomy', the legislation simultaneously incentivises deeper regional economic integration.

The use of other policy actions such as export restrictions on critical minerals is also increasingly evident. There has been a significant increase in such measures over the last decade and a half. While being driven by the objective of building resilient supply chains, these measures also derive importance from the imperative of green-energy transition. (Theme of Session 4). These include China-imposed restrictions on select critical minerals to several countries including the US and Japan. China is strongly positioned in critical mineral mining, the processing and production of lithium batteries, and electric vehicles (EVs). Indonesia and Philippines are among other countries imposing similar export restrictions in developing their EV supply chain ecosystems. Elsewhere in the world, other resource-holding countries like Mexico, Zimbabwe, and Chile have similarly restricted exports of critical raw minerals and/or increased state participation in the respective sectors. Disciplining such export restrictions through established global trade rules is problematic given the absence of a fully functional dispute settlement body at the WTO.

A worrying outcome of this trend is that the strategy of ally-shoring may compromise production efficiency and thereby impact global output. In addition, technological de-coupling and reduced diffusion of knowledge, as a consequence of trade protectionism and reconfiguration of GVCs, will further adversely impact productivity. This could hamper global growth prospects, particularly in emerging markets and developing economies (EMDEs). As estimated by the IMF, the cost of fragmentation of the global economy could be anywhere between 0.2 per cent to 7 per cent of global GDP.[1] As is already evident, a reorientation of production domestically and GVCs reshoring by developed and/or friend-shoring within 'ally' blocs, is getting reflected in reduced trade, especially of parts and components, from emerging market economies. Some early evidence, though in the limited country context of European nations integrated with European value chains, reveals that there are no evident benefits of friend-shoring. Relocation to friendly countries from erstwhile diversified trade partners will therefore require an assessment of the relative cost advantage and necessary knowledge transfers to maintain or increase productivity gains.

It may also be noted that, while ensuring diversification of input sources among trusted partners, localisation or regionalisation of input sources would also have the inevitable consequence of increased vulnerability to macroeconomic shocks. In addition, there are the efficiency costs of substituting imported inputs with locally produced inputs that may not be perfect substitutes. These costs, as in the above case, will need to be weighed against the anticipated benefits of insurance/resilience of supply chains through friend-shoring, ally-shoring, regionalisation, and localisation.

This rapidly developing trend of a policy-induced reversal of global economic integration or geo-economic fragmentation also raises some very profound questions for the Asian economies, particularly the Southeast and East Asian economies, which are among the most open economies in the world, with a high intensity of intra-regional and global trade linkages and deeply integrated with GVCs. High levels of global and regional economic integration in these economies were facilitated by their participation in both, the WTO agreements such as the ITA-1 and ITA-2[2] and regional trade agreements. East Asian economies were second only to the EU in the FTA expansion that was initiated in the early 2000s and which rapidly gathered momentum over the next decade. The ASEAN Trade in Goods Agreement (ATIGA), ASEAN+1s and, more recently, megaregional trade agreements like the RCEP, have been instrumental in facilitating deeper integration within these countries. They are increasing their attraction for foreign investment, easing their way into GVC/ RVC integration. The important question now would be on the ability of the region to use these trade agreements as vehicles for sustaining trade openness and a rules-based trade order.

RCEP and CPTPP remain as isolated instances of adherence to WTO principles, in contrast with trade agreements in other regions like the US and EU. In the latter, policies like the IRA and the CBAM, while promoting regionalism within are distinctly inequitable and discriminatory vis-a-vis non-members. Hence, they are in violation of the WTO principles. It would be pertinent, therefore, to reflect on the ability of RCEP, possibly in combination with the CPTPP, to provide the necessary platform towards such a goal. Both agreements leave the accession possibility open to new members. The CPTPP has six formal applicants already, and several others, including South Korea and Thailand, are keenly interested in acquiring membership. These are all positive signals of continued openness in a context that is increasingly getting defined by protectionism and trade distortions. The significant share of global trade of the

1 International Monetary Fund. "Geoeconomic Fragmentation and the Future of Multilateralism". IMF Staff Discussion Notes. Jan 15, 2023.
2 Information Technology Agreements 1 and 2.

two trade formulations together implies encouraging potential possibilities in this context.

Emerging trends on geo-economic fragmentation are also indicative of a reconfiguration of GVCs in Asia, and a re-orientation of trade and GVCs evident in countries benefitting the most from the 'China+1' strategy. Some of the regional economies, like Vietnam and Taiwan, have been among the major beneficiaries of trade and GVC diversification in large corporations' 'China+1' strategy. Recent literature brings forth the fact that the objective of reducing dependence on a single source for imported inputs seems to have led to only a shift of dependence among trade partners, without any significant diversification in the set of trade partners. So that while the US has reduced imports from China, alternative sources have now substituted for China as major countries of origin for US imports. There thus appears to have been no significant reduction in the concentration of imports from a single source.

Similarly, in GVC reconfiguration, large corporations are seeking alternative locations for investment in their diversification strategy away from China. Of note, however, is the fact that the alternative locations have shown increased intensity of supply chain integration with China. So, while there may be evident relocation away from China, indirect integration with China continues to prevail or even intensify. For the larger context of the Indo-Pacific too, it is observed that member economies have become more reliant on trade with China over the last decade. The critical placement of China as a major trade partner and at the centre of GVCs brings forth the formidable challenge of ensuring supply chain resilience and diversification to reduce single-source import dependence.

The other trend gaining ground in East Asia is the Japanese pivot towards ASEAN economies. Japan has announced subsidies for 'friend-shoring' production to ASEAN. Thailand, Vietnam and Indonesia are among the regional economies that have benefitted from increased Japanese investments. A similar trend of increased investments in ASEAN economies is also seen in the case of Korea. However, given the intensity of supply-chain linkages with China, Japanese and Korean investors also find it difficult to completely decouple from China. The ASEAN dependence on China which, as discussed above, has intensified in the wake of the 'China +1' strategy, especially for the beneficiary economies, and the heavy economic costs involved for Japanese investors to completely exit from China, highlight the evident contradictions in the geo-economic engendered supply chain reconfigurations and search for supply chain resilience.

The impact of geo-economic fragmentation, therefore, on the economic trends, strategies and regional trade architecture in East Asia, in particular, call for further and deeper reflection.

In addition, India, which has in the earlier period been relatively limited in its GVC integration, is now being considered as an attractive alternative in this trade and GVC reorientation process. New industrial policy instruments (such as subsidies under the PLI scheme) and participation in global supply chain resilience initiatives (the IPEF pillar 2, for example) are being actively pursued by India. It should be noted, however, that India remains relatively protectionist, in comparison with other competing emerging market economies, in terms of higher tariffs in some of the most trade dynamic and GVC-intensive sectors. Furthermore, while having accelerated its pace of negotiating FTAs, India, unlike comparator emerging market economies like Vietnam and Mexico, has yet to participate in deep trade agreements, especially with developed economies. India is also not a member of mega-regionals like the RCEP or CPTPP.

Finally, it may also be important to reflect upon the nature of the global trade architecture at this juncture. The WTO and its predecessor, the GATT, were outcomes of the post-World War II rationale of creating economic interdependence to foster increased peace and reduced global conflict. Multilateralism was envisioned to promote freer and fairer trade with the MFN principle as the cornerstone of global trade rules. With the dominant global trend towards geo-economic fragmentation that is policy-driven reversal of global economic integration, increasing violation of the MFN principle is being rationalised in the context of securing national interest and security. This has only added to the persistent erosion of the WTO as reflected in its inability to evolve consensus/agreement on major issues under the Doha Development Agenda (DDA), and more recently in the emaciated Appellate Body of the Dispute Settlement Mechanism (DSM). The issue assumes particular importance as EMDEs, that may often be at the receiving end of discriminatory unilateral trade policies implemented by the developed world, do not any more have the option of a registering their complaints and/or seeking redressal through the DSM. Hence, there is an urgent need to re-evaluate the multilateral system and make it more appropriate for the evolving global trade context.

In this context, the discussion/papers in this session will be focused on:

1. Evolving trends in geo-economic fragmentation arising from new industrial policies: regional concentration of trade and ally/friend-shoring of supply chains.
    a. Impact on trade in Asian economies
    b. Trade policy response in Asia
2. Benefits (among others, national security through reduced single-source import dependence and technological advantage, especially in critical sectors) and costs (macroeconomic vulnerabilities and efficiency costs) of regional concentration of trade and ally-shoring of GVCs.
3. Given the costs and difficulties of de-risking supply chains and reducing single-source import dependence, how large and significant is the risk of geo-economic fragmentation? What do the emerging trends show?
4. How much does preserving a well-functioning WTO system matter to Asian economies?
5. Impact of geo-economic fragmentation on regional trade architecture.
    a. Can the RCEP and CPTPP with open membership be potentially instrumental in reinforcing a rules-based trade order?

CHAIRPERSON'S REMARKS

The New Industrial Policy: Its Link to Geo-economic Fragmentation and the Cost of Fragmentation in Asia-Pacific

Krishna Srinivasan[1,2]

I. Introduction

A wave of Industrial Policies (IPs) has been steeply on the rise globally for over a decade. Departing from the inward-versus-outward orientation dichotomy that underpinned industrialisation efforts in 1950-80, new studies argue that the 'new' IP appears to recognise the relevance of trade openness and integration while also emphasising the strategic role of the state in tackling market failures and enhancing diversification, sophistication, and value-addition (Juhász et al, 2003[a]).

The new IP is a 'child of its time', often driven by multiple – and likely interlinked —considerations. The IP surge happens against a backdrop of complex challenges related to climate change, ageing, automation, and digitalisation, as well as rising geopolitical rivalry (IMF 2024[a]). As a result, and unlike the 'old' IP, the new IP is not exclusively driven by growth and development aspirations, but sometimes also by geopolitical and national security concerns, which may be linked to ongoing geo-economic fragmentation (GEF) processes.[3]

This paper documents patterns of new IP in Asia-Pacific and examines possible links to GEF. The analysis relies on two new datasets; the first dataset (Juhász et al, 2023[b]-[c]) allows us to look at broad IP trends over the last decade; the second, (Evenett et al, 2023), provides more granularity on the characteristics of the measures deployed through 2023. It provides a first snapshot of the deployment patterns of IP measures in the region and undertake a preliminary examination of the link between IP and GEF. The key findings are: (i) IP measures have surged both in advanced economies (AEs) and emerging economies (EMs) in Asia-Pacific, while they are driven largely by AEs in the rest of the world (ROW); (ii) IP in both Asia-Pacific and the ROW is largely trade-distorting and hence could be contributing to fragmentation; (iii) compared to the ROW, IP in Asia-Pacific relies more on explicit trade-tools, with a higher share of interventions targetted at sectors at the centre of GEF concerns, including advanced technology products (ATPs);

1 The views expressed herein are those of the author and should not be attributed to the IMF, its Executive Board, or its management. I would like to thank Rahul Giri, Maria Gonzalez-Miranda, Ashique Habib, Thomas Helbling, Daniel Jimenez, Alasdair Scott, Anne-Charlotte Paret and Zexi Sun for assistance in preparation of this paper.
2 I am thankful to Simon Evenett, Martin Fernando, Adam Jakubik, and Michelle Ruta for generously sharing their databases and codes, which immensely facilitated the production of this paper. I also thank Réka Juhász, Nathan Lane, E. Oehlsen, and V. C. Pérez for providing helpful inputs related to trends in Asia from their forthcoming database.
3 GEF is understood as a policy-driven reversal of integration, often guided by strategic considerations. It encompasses "reversals along any-and-all the different channels whereby countries engage with each other economically, including through trade, capital flows, labor, international payments, and multilateral cooperation to provide global public goods" (Aiyar et al, 2023).

(iv) both in Asia-Pacific and the ROW the likelihood of an IP intervention as well as the number of IP interventions is significantly higher for ATPs than other sectors.

Given the potentially large costs of GEF, the results underscore the need to carefully consider the implementation of IP and prevent an adverse feedback loop between IP and GEF. Welfare losses from GEF can be quite large in extreme scenarios; over the long term, trade fragmentation—i.e., adding restrictions on the trade in goods and services across countries—could reduce global GDP by up to 7 per cent, or 7.4 trillion in US dollars, the equivalent of the combined GDPs of France and Germany (Aiyar et al, 2023, Georgieva, 2023). Moreover, even in moderate GEF scenarios, the potential gains for individual countries in a fragmented world would be limited, although some countries may seem well-placed ex-ante to benefit from a trade and investment-orientation; the scant chance of individual gains is largely due to heightened uncertainty as fragmentation intensifies. The evidence presented in this paper linking IP and GEF underscores the need to prevent an adverse feedback loop between the two, i.e., new IP enacted as a defensive or adaptive measure being perceived by others as an escalation, inviting a counter-response. This calls for IP to be mindfully deployed; a too-rapid expansion of IP carries risks of design and increased opacity. Sound IP design should target well-identified market failures, be time-bound and cost-effective, and be anchored by cost-benefit analysis and strong governance to reduce rent-seeking and resource misallocation (Cherif et al, 2022). Horizontal structural reforms are usually needed to complement sound IP and may represent an alternative to IP. IP should also be consistent with countries' international obligations, including WTO rules (IMF 2024[a]-[b]).

The rest of this paper is organised as follows. Section II provides a background on IP; section III presents the data used in this paper and the initial evidence in Asia-Pacific. Section IV revisits the key takeaways of analysis on the economic costs of GEF. Section V discusses some of the policy implications and conclusions.

II. IP: Some Context

IP is notoriously hard to measure. Definitions vary, but by and large IP can be defined as "*targeted government interventions ("vertical policies") aimed at supporting specific domestic firms, industries, or economic activities to achieve certain national (economic or non-economic) objectives*" (IMF 2024[a]). Precisely identifying such interventions has proven quite challenging, because IP strategies tend to be complex: they are usually implemented through a battery of policy instruments that may be used for multiple ends (which may target one or more sectors, and even further policy goals unrelated to IP), with the set of instruments as well as their sequencing changing over time, and interventions being deployed over long horizons. This has resulted in a "paucity of systematic data" on IP that has largely restricted empirical work to event studies (Juhász et al, 2023[a]-[c]).

Amid analytical challenges, a decades-long debate on 'old IP' took hold, with Asia-Pacific at its centre. From the 1950s to the mid-1980s many Asian countries, in a post-independence self-reliance driven industrialisation effort, initially adopted import-substitution IP strategies to foster domestic industry. Though industries developed, they were often inefficient and uncompetitive, delivering weak economic outcomes (Krueger, 1985). Many countries transited into export-oriented policies. The *East Asian Miracles*[4] were the global early adopters of export-oriented IP; their remarkable growth episodes—and the speed of their transformation—fed a lively debate on the merits of the role of the state in industrialisation via IP. The justifications for IP included that there were market failures that created disincentives for private agents to risk investing in complementary goods and services necessary for the development of a given sector (Rodrick, 1995).[5] Some held the view that IP was at best ineffective and argued that the East Asian experience could be explained by rapid capital and skilled labour accumulation (Krugman, 1994). There were concerns about the harmful effects of a heavy government role—including given information asymmetries that would hamper government decisions when addressing market failures and 'picking winners', as well as capture and rent-seeking risks. Others held a more nuanced view and recognised the relevance of government intervention in imperfect markets and of IP as a development catalyst (Stiglitz, 1996). Empirical work was, however, far from conclusive: the approach was largely correlational, and weakened by a lack of data, as well as identification and endogeneity issues (Juhász et al, 2023[a]).

The global resurgence of IP has triggered a new generation of literature, which shines a light on the nature of the new IP. This new generation of work seeks to tackle some of the earlier gaps, including through developing more systematic data. In a survey of the latest generation of studies on IP, Juhász et al, 2003[a] conclude that the new IP represents an evolution from earlier approaches, recognising the relevance of trade openness and integration while also emphasising the strategic role of the state in tackling market failures and enhancing diversification, sophistication, and value-addition of domestic production. A separate study by Evenett et al, 2023 develops a new database (*New Industrial Policy Observatory*, NIPO) confirming that AEs have been driving the recent global trend in IP activity, with subsidy-like measures used as the primary instrument by most countries. The sectors with the most IP activity are those with military-civilian dual-use products and ATPs—e.g., semiconductors and low-carbon technologies—and their inputs, such as critical minerals (IMF 2024[a]).

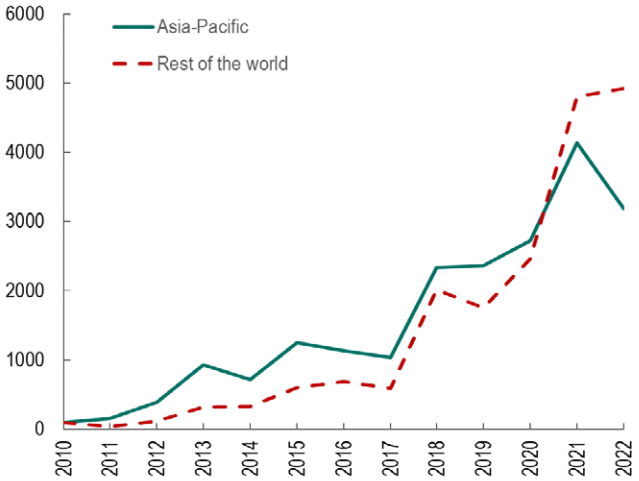
4 East Asian economies, collectively known as the 'East Asian Miracles,' gained international recognition for their remarkable achievements in economic development, industrialisation, and technological advancement within a relatively short span of time. While groupings vary in the literature, the first five 'miracles' often include Japan, South Korea, Singapore, Hong Kong, and Taiwan PoC. In addition, Malaysia, Thailand, and Indonesia are often listed in a broader group of eight 'miracles' (e.g., Stiglitz, 1996).

5 For example, the lack of shipping infrastructure to transport goods to export markets might prompt investment in that sector, which in turn would prompt vertical integration backwards (e.g., to steel production), and forwards (e.g., to insurance and financial services). Whether recent IP measures in the US, EU, and China in semiconductors, EVs, and renewable energy can be justified by missing markets is not clear, although the scale and scope of economic transformation envisaged implies a role for government to spur learning-by-doing externalities.

III. The New IP in Asia: Initial Evidence and Possible GEF Linkages

Using newly available data, this paper characterises the key features of the new IP in Asia-Pacific and examines its possible GEF linkages. To this end, the analysis leverages recent efforts to create global, systematic databases of IP measures. In particular, the paper relies both on the dataset developed by Juhász et al, 2023[b]-[c] ('JDB') and on the NIPO database by Evenett et al, 2023. Both databases are built from raw data published by the Global Trade Alert (GTA) database, and provide a *count* of the IP measures categorised by country/jurisdiction, sector, and economic tool.[6]

Fig. 1. IP Interventions – Asia-Pacific versus ROW
(Number of measures by year, 2010 = 100)



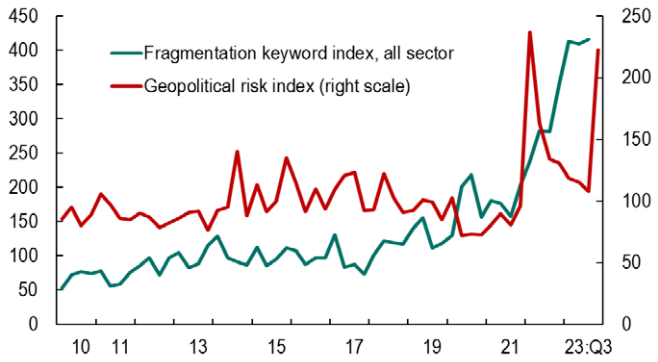
Source: Juhasz et al., 2023 dataset; IMF staff calculations.

The 'count' approach has inevitable caveats and calls for caution on interpretation, including because it is difficult to assess the economic impact of each measure (and hence all measures are counted equally, even if their economic relevance may actually differ).[7] This said, both databases provide a unique view that allows us to map IP implementation globally in a way that was not possible before, thus providing important new insights. The JDB comprises annual data for 175 jurisdictions (including 31 jurisdictions in the Asia-Pacific region), and allows for a long-term view (2009-22) of the evolution of IP versus non-IP measures. The NIPO database offers a monthly count for the period of January 2023-January 2024, and documents measures implemented by 75 jurisdictions (14 in the Asia-Pacific region), with details on targeted sectors, policy tools, and stated motives for implementing the IP measures.

The analysis delivers a few initial findings:[8]

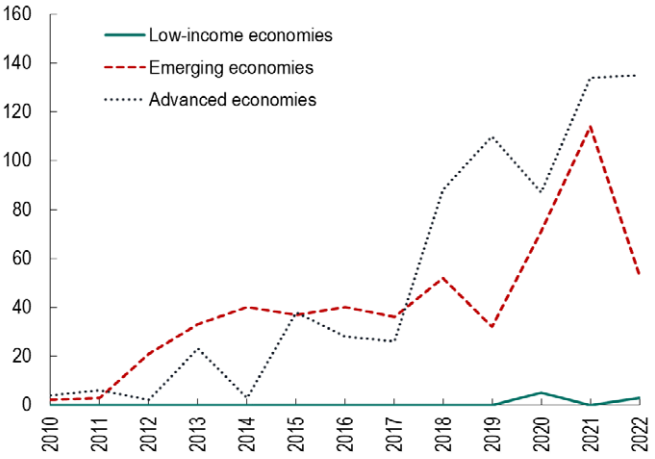
- ***First, IP in Asia-Pacific has surged as in the ROW, while risks of GEF have ramped up; both AEs and EMs are strongly active in deploying IP measures in Asia-Pacific.*** The number of IP measures deployed by Asia-Pacific follow the same trend as that of the ROW. The data suggests that 2017 was an inflection point after which the number of IP measures globally rose more sharply. This coincides with the timing of the sharp increase in indicators measuring fragmentation and geopolitical risk (Figures 1-2). Activity in Asia-Pacific has been led both by AEs and EMs – this contrasts with the rest of the world, where AEs have taken a clear lead (Juhász et al, 2023[b]-[c]). Over the last five years, AEs in Asia-Pacific have led the way in deploying measures, with the region's EMs following closely (Figure 3).

Fig. 2. Fragmentation Keywords in Earning Calls[1/]
(Index, 2013-15=100)



Source: Caldara and Iacoviello (2022); Hassan and others (2019); NL Analytics, Inc.; and IMF staff calculations.
1/ Fragmentation indices measure the average number of sentences, per thousand earnings calls, that mention at least one of the following keywords: deglobalization, reshoring, onshoring, nearshoring, friend-shoring, localization, regionalization. The geopolitical risk index is a measure of adverse geopolitical events and associated risks constructed through text-based analysis of major newspapers, with higher values indicating greater coverage of related topics. See Caldara and Iacoviello (2022) for technical details.

Fig. 3. IP Interventions in Asia-Pacific
(Number of measures deployed per year, by country income group)



Source: Juhasz et al., 2023 dataset, and IMF staff calculations.

6 Both databases extract information from the Global Trade Alert (GTA) database: https://www.globaltradealert.org/, which includes commercial policy interventions implemented unilaterally by public bodies. They use different approaches for the search, and rely on different taxonomies to identify IP interventions. Anchoring on the GTA implies that all measures in both databases are expected to impact trade. The GTA records actions as either 'distortive' to trade, or of a 'liberalising' nature. Distortive measures generally discriminate against foreign commercial interests by restricting market access or by altering the conditions in favour of local firms. Liberalising measures tend to enhance market access on a non-discriminatory (i.e., most favoured nation) basis or improve the transparency of a relevant policy.

7 Other caveats of the 'count' approach include that overlapping interventions may be missed (as several measures may be deployed as part of a single package that may not always be captured).

8 Giri et al, 2024 (forthcoming) provides a fuller discussion of stylised facts related to new IP in the Asia- Pacific region.

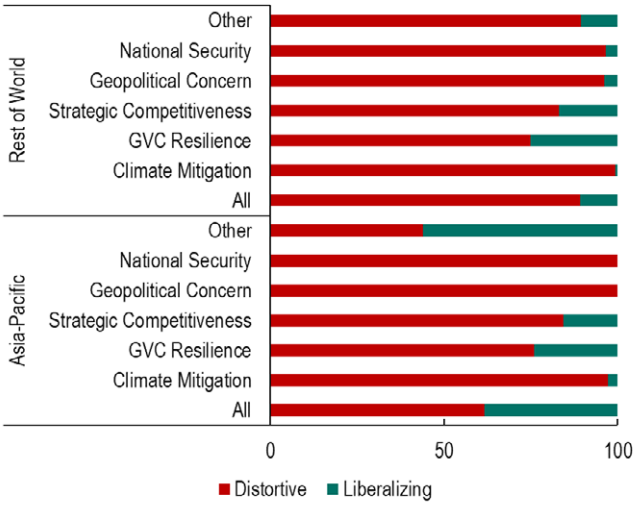
- ***Second, most IP measures recently deployed are likely to distort trade, and hence may contribute to fragmentation.*** This is true both in the region, and in the rest of the world (Figure 4). It is also true regardless of the motive stated for deploying the specific IP measure, as recorded in the NIPO database (when the authorities explicitly state one, which is not always the case). Some 63 per cent of all IP measures deployed in Asia-Pacific in 2023 have been assessed as trade-distortive, while those for the ROW are 89 per cent. Most of this difference between Asia-Pacific and the ROW is attributable to IP deployed under the motive 'Other' (of which 44 per cent are trade-distortive, compared to 89 per cent). Asia-Pacific and the ROW have similar shares on stated IP motives: strategic competitiveness (83 vs. 84 per cent), global value chain (GVC) resilience (75 vs.76 per cent) and climate change mitigation (97 vs. 99 per cent).

- ***Third, Asia-Pacific has relied relatively more on direct trade instruments to support IP than the ROW.*** The analysis confirms the regularity observed elsewhere (Juhász et al, 2023[a]-[c], Evenett et al, 2023 and IMF 2023[a]-[b]), that subsidy-type of measures (e.g., financial grants, state guarantees, loans, and aid) take the lion's share of IP interventions both in Asia-Pacific and the ROW (Figure 5). However, Asia-Pacific implements a much larger share of IP measures via traditional trade tools (trade tariffs and non-tariff barriers, including trade bans, quotas, licensing and localisation requirements) than the ROW. While all IP tools being deployed may affect trade flows, the explicit use of trade-based measures can be quite visible, and risks raising the perception of pro-fragmentation behaviour in Asia-Pacific.

- ***Fourth, IP measures in Asia-Pacific tend to target sectors seen as strategic in the GEF literature and these are deployed largely by EMs.*** Asia-Pacific has a stronger leaning than the ROW towards IP that fosters sectors such as critical minerals, semi-conductors, and ATPs (Figure 6). This set of products have been identified as strategic and tend to be directly related to GEF dynamics. ATPs are the most targeted products after military/civilian dual use and 'other' products in Asia-Pacific, and a close third in the ROW. ATPs account for about 15 per cent of all IP measures in Asia-Pacific, compared to a slightly lower 12 per cent in the ROW.

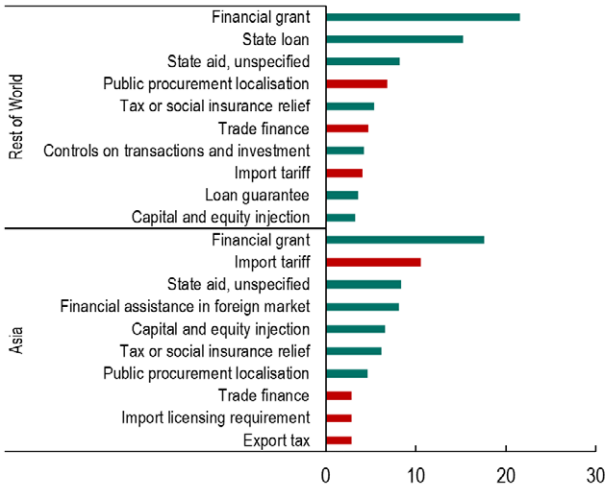
- ***Fifth, evidence suggests a strong link between IP targeting ATPs and GEF trends.*** Looking at ATPs through the lens of possible geo-political blocs (IMF, 2023[a]) shows that both an illustrative China bloc and a corresponding US bloc have an important share of IP measures targeting ATPs—18 and 12, respectively (Figure 7).[9] Globally, IP targets ATPs more intensely than other sectors. The likelihood of IP intervention as well as the number of IP measures implemented are significantly higher for ATPs than other sectors (22 per cent and 86 per cent, respectively) (Figure 8).

Fig. 4. Trade Restrictive and Liberalizing IP, by Motive, 2023
(Percent of IP measures for each stated objective)



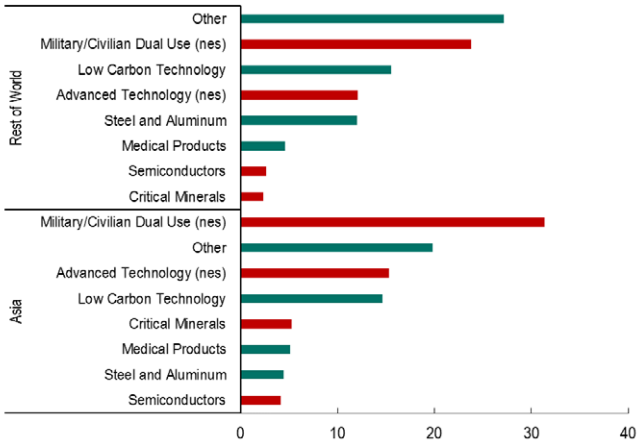
Source: IMF staff calculations based on Evenett et al., 2023 NIPO database.

Fig. 5. IP Tools in 2023
*(Percent of all measures by region)**



Source: IMF staff calculations based on Evenett et al., 2023 NIPO database.
*/ Direct trade tools colored in red.

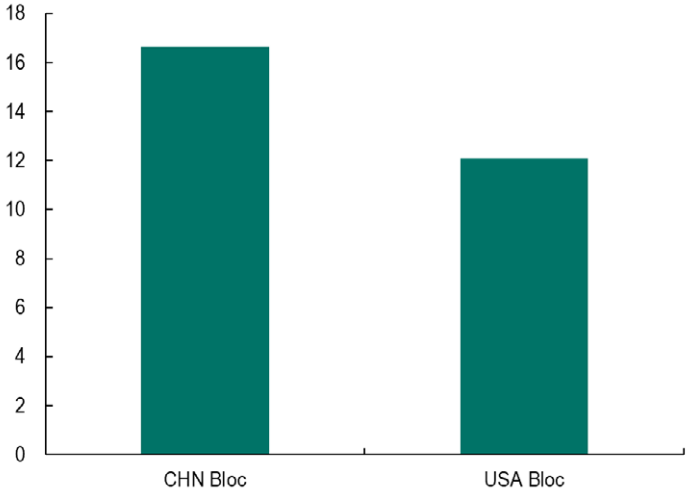
Fig. 6. IP by Targeted Sector in 2023
*(Percent of all measures by group)**



Source: IMF staff calculations based on Evenett et al., 2023 NIPO database.
*/ Strategic sectors marked in red.

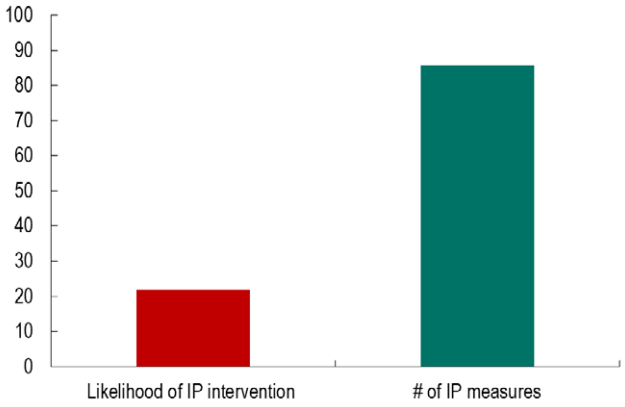
9 Assignment to the two blocs is based on the UN voting pattern, in line with IMF 2023[a].

Fig. 7. IP Targeting ATPs by Blocs in 2023
(Percent of all measures by blocs)



Source: IMF staff calculations based on Evenett et al., 2023 NIPO database.

Fig. 8. IP Interventions for ATP Sector relative to Other Sectors
(Percent increase in mean IP likelihood and mean IP measures)



Notes: IMF staff calculations. Chart shows percent increase in (i) average likelihood of IP intervention and (ii) average number of IP measures, in 2023 for ATPs. The regression specification controls for revealed comparative advantage of the country in sectors, number of measures by others in 2022, and country-sector fixed effects.
Data come from Evenett et al., 2023 NIPO database.

In sum, these findings suggest a reasonably strong link between IP in Asia-Pacific and GEF dynamics. Countries appear to be responding to the evolving global landscape with measures that seek to mitigate risks and/or gain from trade-diversion that could arise with fragmentation deepening. This compliments the analysis of Evenett, et al (2023), which finds some evidence for *tit-for-tat* dynamics, i.e., IP interventions in the previous year are positively correlated with interventions in the current year for a country-sector.

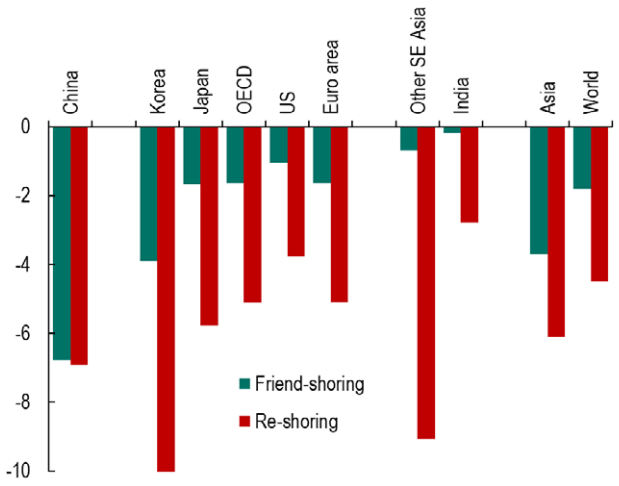
IV. Geo-economic Fragmentation – Its Implications for Asia

To provide a view on the possible implications of GEF, the key takeaways of recent analysis are revisited. The analysis shows that the potential costs of GEF could be high and propagate through multiple channels (IMF 2022; Aiyar et al (2023); IMF 2023[a]-[c]). Furthermore, the decline in international cooperation would undermine the provision of global public goods.

The main takeaways from the work on the costs of GEF can be summarised as follows:

- ***Fragmentation yields long-term losses, with costs varying with the extent of fragmentation.*** In an extreme scenario, over the long term, trade fragmentation—i.e., adding restrictions on the trade in goods and services across countries—could reduce global GDP by up to 7 per cent, or $7.4 trillion in US dollars, the equivalent of the combined GDPs of France and Germany in 2023; a further spread of GEF could generate technological decoupling, raising costs further to 12 per cent of global GDP; these would be unevenly distributed, with greater incidence on the vulnerable countries and social segments (Aiyar et al, 2023; Georgieva, 2023).[10] More moderate scenarios (IMF 2023[b]) point at global losses of about 4.5 per cent of GDP from reshoring, and nearly 2 per cent of GDP from friend-shoring (Figure 9). The costs would be relatively larger for Asia-Pacific: losses from *reshoring* could reach over 6 per cent of GDP, while the losses from *friend-shoring* would be over 3.5 per cent of GDP; *friend-shoring* policies also have (somewhat smaller) costs to those countries that are non-aligned, and fragmentation on FDI could also impair both bloc-members and non-aligned countries.

Fig. 9. GDP Losses from Friend-Shoring and Re-Shoring Scenarios
(percent GDP deviation from baseline)

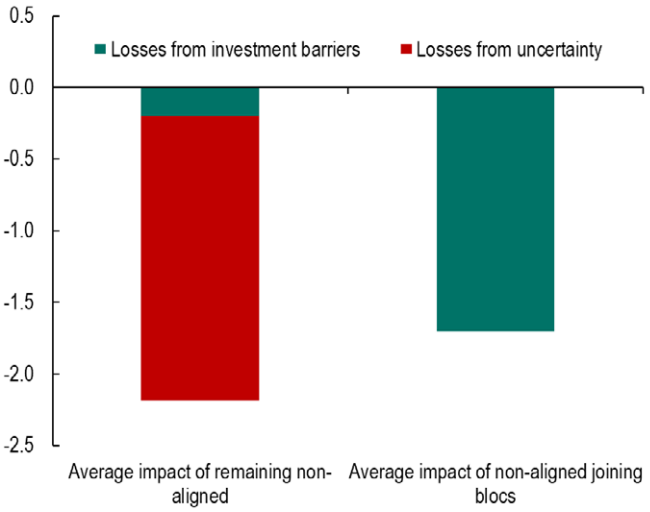


Source: EORA GVC, and IMF staff calculations

10 EMDEs—including many in Asia-Pacific—have strongly benefited from greater trade and GVC integration, and the fracturing of such linkages implies significant costs. Lower access to external capital and technological know-how could amplify losses for EMDEs (see IMF 2023[a]). Policies aimed at reducing trade in high-tech inputs and environmental goods, while reducing quality of inputs for all, would be particularly harmful for economies further behind the frontier (see IMF 2023[c]).

- ***Gains for individual countries due to trade diversion cannot be taken for granted; non-alignment need not be a safe option.*** Analysis shows (IMF 2023[a]) that gains from trade and investment diversion are possible for countries that remain non-aligned. However, such gains cannot be taken for granted, and will vary largely with the extent of GEF dynamics and to the extent a country's characteristics (e.g., institutions, infrastructure) make them an attractive destination for re-directing production and investment. In addition, heightened uncertainty regarding future alignment choices may hold back investment towards non-aligned countries—which could substantially amplify growth losses by hampering trade and financial flows (Figure 10).

Fig. 10. Impact of Alignment Uncertainty
(percent GDP deviation from no-fragmentation scenario)



Source: IMF staff calculations.
Note: Non-aligned economies are not targeted by investment barriers but are impacted through diversion of investment flows and general equilibrium impact on global activity.

V. Final Remarks: Preventing Adverse Feedback Loops Between IP and GEF

The results underscore the need to carefully consider the implementation of IP to ensure it is sound and well-justified, and to help avoid feeding into GEF trends. The current rapid expansion of IP in Asia-Pacific and elsewhere calls for caution on several fronts.

There is a need for thoughtful deployment of IP measures, considering the potential costs of these policies. Evidence shows a very rapid increase in the number of IP interventions, raising questions about the underlying processes for design and implementation of IP. As has been argued elsewhere (e.g., Stiglitz 1996; IMF 2024[a]-[b]; Cherif et al, 2019 and 2022), sound IP design must target well-identified market failures, be time-bound and cost-effective, and be anchored by cost-benefit analysis and strong governance to reduce rent-seeking and minimise resource misallocation. In many cases, IP should be accompanied by complementary horizontal structural reforms; in some cases, horizontal reforms may obviate the need for IP. A rapid pace of IP interventions overlapping several sectors, goals, and policy tools, risks increasing opacity and distortions while making the cost-benefit assessment of IP more complex.

Another reason to proceed carefully relates to the likely feedback loop between IP and GEF risks. The findings suggest a reasonably strong link between the implementation of IP and GEF both globally and in Asia-Pacific, with evidence of disproportionate targetting of ATPs and possible 'tit-for-tat' dynamics, thereby creating an adverse feedback loop.

It is important to help prevent a GEF/protectionist race to the bottom. So, if IP must be used, then ensuring its soundness and consistency with countries' international obligations, including WTO rules (IMF 2024[a]-[b]) will be critical to help prevent IP from feeding into GEF trends.

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INDIA IN ASIA
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PAPER 1

From Free Trade to Industrial Policy: Assessing Policy Shifts in Major Developed Countries and the Implications for Developing Asia

Kristy Hsu

Introduction

The world has seen a return of industrial policy embraced by major developed countries in the past several years. The increasing popularity of the current industrial policy, sometimes categorised as new or modern industrial policy, emerged from rising global geopolitical tensions stemming from these countries' strategic response to Chinese dominance in critical goods, and reinforced by supply chain disruption and bottlenecks during the COVID-19 pandemic, the Ukraine war and other potential conflicts. Major developed countries, including the US, the EU and Japan, have made significant policy shifts from free trade or pro-trade policy to industrial policy, justified arguably by their concerns of national security and economic resilience.

This trend in the return of industrial policy, prominently led by the Biden Administration of the US, and largely different from the traditional industrial policy of the 1970s or 1980s, has broad implications for global trade and investment flows. It also has particular consequences for developing countries in Asia, where comprehensive global supply chains are located.

This paper aims to discuss the industrial policies announced/adopted by the US and the EU and their changing characteristics compared to the traditional versions. It then explores how these policies or measures may affect international trade and investment flows, and have impacted or will impact developing Asian countries, particularly Southeast Asia and Taiwan. The paper finally concludes and suggests further study to understand and evaluate the trends, as well as greater communication between these developed countries and Southeast Asia and Taiwan.

From Free Trade and Pro-Trade to Industrial Policy

It is not a complete coincidence that major developed countries, having long embraced free trade or pro-trade policy since the 1990s,[1] are attempting a policy shift to industrial policy in the past several years.

Behind these countries turning to government intervention are multiple reasons and motivations. Most notably is the lost (or low) confidence in free trade and concerns about a more aggressive China dominating in global supply chains from manufactured industrial goods to raw materials and critical minerals.

The former US president Donald Trump was the first national leader of a major developed country to explicitly call for 'fair trade' to replace the free trade principle long embraced by the Western countries, and urge allies to collectively fight against economic aggression. The changing notion was written in the National Security Strategy Report (NSS) released in December 2017. The report clearly stated "economic security is national security".[2]

These new industrial strategies/policies adopted by major countries take different forms and have more diverse policy tools when compared with the 'traditional versions' of the last century.[3]

Firstly, traditional industrial policy, often adopted by developing countries, was aimed at developing or protecting certain infant industries to build more value-added manufacturing and often export-oriented sectors. Some examples are the sector-specific policies adopted by Taiwan and South Korea since the

1 The World Trade Organization (WTO) was established in 1995 and launched the Doha Trade Negotiations in 2001 to promote multilateral trade liberalisation.
2 See "A New National Security Strategy for a New Era, National Security Strategy of the United States of America," the White House, December 18, 2017, https://trumpwhitehouse.archives.gov/articles/new-national-security-strategy-new-era/
3 For example, some of the most commonly used strategies include trade financing, state loans, financial grants, financial assistance to expand foreign markets, local sourcing, loan guarantees, and import tariffs.

late 1970s to develop the electronics (including semiconductors) and shipbuilding industries, respectively. More recent examples are the 2025 Made in China Initiative adopted by China[4] and the Make in India initiative adopted by Prime Minister Narendra Modi in 2014 when he began his first term as India's Prime Minister.

In contrast, industrial policy announced or implemented by major developed countries in recent years is, on the one hand, to respond to counter China's growing economic dominance and influence, and on the other hand, to re-focus or re-shore manufacturing activities back home after decades of deindustrialisation or off-shoring to other countries. In order to raise self-sufficiency and local production requirements, developed countries provide generous state subsidies in production and R&D, coupled with import restrictions, export controls, and FDI screening in some countries.[5]

As a result, industrial policy nowadays seems to cover all major economic policies, ranging from production localisation and job creation to strategic autonomy and economic security. For example, the industrial policy announced by the Biden Administration covers almost all major components in his national economic agenda. To achieve this broad set of strategic goals, the policy thus needs to develop various policy tools beyond trade measures and tariffs. It also has broader and deeper implications for multilateral trade rules and on foreign countries than traditional industrial policy.

Secondly, whether current industrial policy adopted by developed countries is compliant with the World Trade Organization (WTO) also raises increasing concerns. Some critics say that government subsidies provided in the name of industrial policy should be subject to the rules of the WTO/GATT, as all the major developed countries are WTO members. If a WTO member adopts a new policy which violates WTO rules, other WTO members may challenge the policy and bring it to the dispute settlement procedures of the WTO.[6]

For example, the primary WTO laws regulating government subsidies are the Subsidies and Countervailing Measures Agreement (SCM Agreement). The Agreement defines a subsidy broadly as a financial contribution by a government or any public body within the territory of a Member which confers a benefit.[7]

Under the WTO definition, many countries believe that some provisions of the Inflation Reduction Act (IRA) of the US may violate the SCM agreement. The IRA was signed into law by President Biden in August 2022. Its purpose is to "create opportunities to build projects, hire workers, and manufacture equipment needed to strengthen domestic supply chains, lower household energy costs while reducing greenhouse gas emissions, and pay good wages for those efforts".[8] Some scholars question whether the domestic content requirements of some IRA programmes likely amount to prohibited subsidies.[9]

WTO members should also adhere to the most-favoured-nation (MFN) principle and the National Treatment (NT) principle to provide non-discrimination among all foreign goods, as well as between foreign and domestically produced goods. Some countries intend, either directly or indirectly, to provide preferential market access or differential treatment to diplomatic allies or certain 'like-minded' countries under some measures of industrial policies, and hence may also violate the MFN or NT principle under the WTO.

The US and EU Responding to the Chinese Dominance in Global Supply Chains

The Biden Administration in the US – Leading the New Trend

The Biden Administration announced a twenty-first century US industrial strategy in June 2021 after he took office. It is described as "a strategy to strengthen the U.S. supply chains and rebuild its industrial base, across sectors, technologies, and regions".[10]

Biden's industrial policy was announced at a time the US and the whole world were suffering from supply chains shocks caused by the COVID-19 pandemic which threatened the economy and national security. The policy aimed to reverse the long-term hollowing out of the US industrial base, by bringing back and strengthening supply chains in the US.

Different from President Trump who prioritised a trade agenda and made frequent use of tariffs and other trade measures to affect imports and reduce the US trade deficit, Biden's strategy is built on five core pillars: supply chain resilience at the centre, with the other pillars being targeted public investment,

4 Beijing announced the 'Made in China 2025' plan in 2015 which is a key industrial policy for Chinese economic development under the leadership of President Xi Jinping. The plan has sparked heated debates around the world and led to the US and other countries in re-considering national industrial policies to counter long-term performance and sustainability of China's economic growth model.

5 Other countries calling for reshoring include France, Germany, Australia, Japan, and South Korea. The Taiwanese government also put forward a scheme in the late 1990s to encourage Taiwanese companies investing in China to 'return home.'

6 Bown, Chad P. 2023. *Modern Industrial Policy and the WTO.* Peterson Institute for International Economics. PIIE Working Paper 23-15. Washington: Peterson Institute for International Economics. https://www.piie.com/publications/working-papers/how-trade-cooperation-united-states-european-union-and-china-can-fight.

7 The SCM Agreement prohibits subsidies contingent on exports and local content. The Agreement divides subsidies into two categories: prohibited and actionable. Prohibited subsidies are not permitted under WTO rules and therefore require withdrawal by the offending nation. All other subsidies fall into the actionable category, meaning while subsidies are broadly permitted by the WTO, a complaining party has recourse to address injuries caused by subsidies through countervailing measures.

8 See Press Release, US Department of the Treasury, November 2023, https://home.treasury.gov/policy-issues/inflation-reduction-act

9 The IRA uses the Production Tax Credit (PTC), Investment Tax Credit (ITC), and electric vehicle tax credits subject to domestic content requirements. "The Inflation Reduction Act's Climate Provisions Face Likely Incompatibility with WTO Rules," *Columbia Journal of Transnational Law.* 2023, https://www.jtl.columbia.edu/bulletin-blog/xkyps10lipetdq4aaom6faycw5xz9b

10 See the National Economic Council Director Brian Deese's speech on US industrial policy as prepared for delivery at the Atlantic Council on June 23, 2021. "The Biden White House plan for a new US industrial policy," Atlantic Council, https://www.atlanticcouncil.org/commentary/transcript/the-biden-white-house-plan-for-a-new-us-industrial-policy/ Also see Fact Sheet: "Biden-Harris Administration Delivers on Made in America Commitments" | The White House

public procurement, climate resilience, and equity. In June 2021, the White House released the report of the one-hundred-day supply chain resilience review. The report identified critical sectors, including semiconductors, advanced batteries, critical minerals and materials, and listed actions the Administration will take to strengthen supply chain resilience and promote economic security, national security, and good-paying, union jobs in the US.

The IRA also marks an important policy shift in US history. Most notable in the report are semiconductors, extremely critical to economic recovery post the COVID-19 pandemic, green transition, and technological advancement. To increase the share of the US in global semiconductor production, which fell from almost 40 per cent to just over 10 per cent in the last 40 years,[11] the Biden Administration particularly prioritised advanced semiconductor manufacturing and Assembly, Testing and Packaging (ATP). In August 2022, Biden signed into law the CHIPS (Creating Helpful Incentives to Produce Semiconductors) and Science Act. The Act will provide $52.7 billion to manufacturers in the semiconductor industry located in the US and an income tax credit of 25 per cent.

Furthermore, the Act is regarded as the largest effort to addressing climate change in US history. It subsidises purchase of electric vehicles assembled in or containing battery components from the US or its free trade partners through a reduction in sales taxes. The opposition party criticised the Act, as a radical departure from previous US policy.[12] US major trading partners also raised concerns about its measures, including the local content requirements (LCRs) for cars and batteries,[13] as countries that are not a US FTA partner are denied such benefits. The EU, for example, considered it damaging to US-EU bilateral trade relations and a possible diversion of foreign direct investments. The LCRs will also weaken the free trade order of the WTO.

The EU – Adopting a New Industrial Policy Amidst Internal Criticism

Industrial policy is not new to the EU. As stipulated in the Treaty on the Functioning of the European Union (TFEU),[14] EU industrial policy aims to make European industry more competitive, so that it can maintain its role as a driver of sustainable growth and employment in Europe. In October 2005, the Commission's document, 'Implementing the Community Lisbon Programme: A policy framework to strengthen EU manufacturing – towards a more integrated approach for industrial policy' set out the EU's first-ever integrated approach to industrial policy in the 21st century.[15]

In March 2020, the Commission presented 'A New Industrial Strategy for Europe' (COM(2020)0102) to help Europe's industry lead the twin transitions towards climate neutrality and digital leadership, and to strengthen Europe's competitiveness and strategic autonomy, which was later updated as the European Industrial Strategy (COM(2021)0350) in May 2021.[16] The updated version focuses on the resilience of the EU single market, the EU's dependency in key strategic areas, among others. The EU also has passed a large number of policies, programmes, and initiatives to contribute to EU industrial policy.[17]

The EU experienced a similar awakening as the US when it painfully discovered its dependence on semiconductors suppliers in East Asia during the shortage of semiconductors caused by supply chains bottlenecks during the pandemic. As a matter of fact, in 2013, the Commission adopted a European strategy for micro and nanoelectronic components and systems to reverse the decline of the EU's share of world supply, which was below 10 per cent. However, the strategy finally did not succeed.

Faced with a 'subsidy race' by widespread government budgets, including grants and tax concessions for semiconductors, particularly the semiconductor strategy announced by the Biden Administration, EU leaders adopted the Versailles Declaration in March 2022. They agreed that reducing the EU's strategic dependency on semiconductors was key to building a strong economic base. The vision is to diversify supply value chains and enhance EU production capacity in order to secure, through the European Chips Act, 20 per cent of global market share by 2030. In July 2023, the European Parliament approved the European Chips Act and will set forth over €43 billion of public and private investments to proactively manage and respond to future supply chain disruptions.[18]

Meanwhile, the passing of the IRA in the US further led Brussels to re-shape its industrial policy. The Commission presented the Green Deal Industrial Plan in February 2023, aimed at enhancing EU competitiveness of its net-zero industry and supporting the fast transition to climate neutrality. The Green Deal Industrial Plan is a counter- measure to the IRA's negative effects, and to prevent clean energy companies leaving the EU for the US. By relaxing its rules of state aids, the EU will provide more national support, including through tax benefits.

11 Antonia Varas et al, "Government incentives and US Competitiveness in Semiconductor Manufacturing," BCG. September 16, 2020.
12 The Republican Party is opposed to additional debt. It was only in May 2023 that an agreement was reached on the debt ceiling. Furthermore, the US will hold its presidential elections in November 2024, In the case of a Republican administration, which will likely set new priorities and discontinue Biden's climate programmes, it will hugely impact the future of the IRA.
13 "EU's response to the US Inflation Reduction Act (IRA)," European Parliament, June 2023, https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/740087/IPOL_IDA(2023)740087_EN.pdf
14 EU industrial policy is specifically aimed at: (1) 'speeding up the adjustment of industry to structural changes'; (2) 'encouraging an environment favourable to initiative and to the development of undertakings throughout the Union, particularly small and medium-sized undertakings'; (3) 'encouraging an environment favourable to cooperation between undertakings'; and (4) 'fostering better exploitation of the industrial potential of policies of innovation, research and technological development'. See Article 173 of the TFEU.
15 See Commission Communication, (COM(2005)0474)
16 The time for launching the strategy coincided with the outbreak of the COVID-19 pandemic, therefore the strategy did not reflect the impact of the pandemic on EU industries and supply chains. In November 2020, the Parliament called on the Commission to present a revised industrial strategy.
17 General principles of EU industrial policy: https://www.europarl.europa.eu/factsheets/en/sheet/61/general-principles-of-eu-industrial-policy
18 'Semiconductors: MEPs adopt legislation to boost EU chips industry,' Press Releases, European Parliament, July, 11, 2023. https://www.europarl.europa.eu/news/en/press-room/20230707IPR02418/semiconductors-meps-adopt-legislation-to-boost-eu-chips-industry

Assessing the New Industrial Policy and the Implications on Asian Developing Countries

According to the UNCTAD's 2023 *World Investment Report*, despite the fact that global FDI in 2022 has dropped by 12 per cent to US$1.3 trillion, Southeast Asia has attracted US$222.57 billion of FDI, reaching a historic record, as the sub-region has benefitted from the relocations/realignment of the global supply chains since the US-China trade war in 2018 and the COVID-19 pandemic in 2020. Vietnam topped in receiving FDI from both developed and developing countries. It was a major destination for the Biden Administration's friend-shoring initiative.

Increasing criticism has grown in developing Asia on the new industrial policies embraced by major developed countries. On Biden's policy, the feeling is that it covers too wide a scope and has unclear definitions of "essential goods and strategic technology".[19] The policy is also seen to be based on political considerations, and may distort domestic and international markets.[20] The EU's industrial policy is also controversial. Though the EU has expressed its concerns over a 'subsidy race', it is competing with the US, Japan, even China, in trying to bring critical supply chains to the Member States.[21]

The industrial policies of the US and EU have broad and deep implications in Asian developing countries. First, the protectionist characteristics of these policies affect international trade flows as they favour domestically produced goods over imported goods and provide preferential treatments such as government subsidy, grants, tax credits or favourable terms in government procurement. These measures will create non-tariff barriers to imports from developing countries and impede their market access.

Both the US and EU are great economic superpowers, together accounting for more than 30 per cent of global gross domestic product (GDP) and a large chunk of global imports. If they reduce market access, it will impact world trade and most export-oriented developing countries in Asia.

Secondly, both the US and EU aim to encourage re-shoring or investments in semiconductor, critical minerals, and EV and battery supply chains in their countries. The investment incentives and other preferential treatment they provide will attract domestic and foreign investors, and thus influence the supply chain shift. It is difficult for Southeast Asian countries to compete due to limited financial resources. This will further widen the gap between developed and developing countries in developing strategic or essential industries.

Thirdly, the US and EU policies also aim at enhancing innovation and R&D and cultivating talents. They will attract talent from developing countries to move to these richer countries. For example, the US and some EU Member States, such as Germany, have developed exchange programmes with Vietnam for human resources development, by providing training and skill upgrading to their young people. Vietnam, now an important source of industrial talent for richer countries, faces ever-serious brain drain issues.[22]

Last but not least, Southeast Asia is the major beneficiary of trade liberalisation promoted by a rule-based global trading system since the 1990s. As the industrial policy adopted by the US and EU could weaken the WTO and global trade rules, most Southeast Asian countries will be negatively impacted.

The Semiconductor Supply Chains – Moving from Asia to G7 Countries

Currently, the US, EU, Japan and many other developed countries are in competition to re-shore and re-vitalise semiconductors supply chains at home to increase self-sufficiency in order to reduce dependence on foreign suppliers. The US is the first major developed country to announce a semiconductor strategy and enact a specific chip legislation. The EU has also passed the European Chips Act to allow state aids and other incentives to attract domestic and foreign investors. While the US prioritises more advanced chips, the EU Act targets investment in First of Its Kind technology, but provides flexibility in defining qualifications for the programmes.

Like most East Asian countries, Japan had successfully adopted various industrial policies to develop specific industries according to its development goals. Japan was once a world leader in semiconductors in the late 1980s. To regain its industry leadership, it introduced a new growth strategy in 2021, under which the Ministry of Economy, Trade and Industry (METI) adopted a strategy for semiconductors and the digital industry.[23]

These countries have targeted a small group of semiconductor companies, notably TSMC, Intel, Samsung, United Microelectronics Corporation (UMC) and others. The TSMC, the world leader in semiconductor fabrication, announced its plans to invest in the US, Japan, and Germany.[24] The Japanese government announced in 2022 it would contribute US$3.5 billion to a US$8.6 billion investment by TSMC in a new

19 One example is shipbuilding, a politically favoured industry but with no connection to COVID-19, which has been granted a subsidy under the Defense Production Act.

20 Scott Lincicome, 'Industrial Policy: A Bad Idea Is Back,' Policy Report, July/August 2021, Cato Institute, https://www.cato.org/policy-report/july/august-2021/industrial-policy-bad-idea-back

21 'Europe has a chips plan - here are 6 things that could kill it,' Politico, February 8, 2022, https://www.politico.eu/article/european-union-chips-industrial-policy-european-chips-act-semiconductors/

22 In addition to the US and the EU, Japan and South Korea also target Vietnam and Malaysia, for example, as major sources of human resource in their aging societies.

23 The METI strategy aimed at promoting the manufacture of cutting-edge (and next generation) logic semiconductors, strengthening design and technological development of cutting-edge logic semiconductors for post-5G technologies, and developing manufacturing equipment and materials that will support the global chip ecosystem and supply chain.

24 The Taiwan Semiconductor Manufacturing Company, or TSMC, opened its factory in Japan in mid-February. It is building a new factory in Arizona State, in the US, scheduled to open in 2026. Its investment plan in Dresden, Germany, already granted state subsidy from the German Federal Government, may be postponed following the German Supreme Court's ruling on the legal use of the government budget in November 2023.

chip manufacturing plant.[25] According to TSMC, despite the financial support of the host countries being critical to its decision on an investment location, it also has to consider market demand, the overall investment environment, local supply chains and labour force issues, among others. In all these countries, TSMC faces challenges of cost efficiency because, without an eco-system and scale of production, production costs are several times higher than in Taiwan. Whether the industrial policy will really work for TSMC's investments remains to be further observed and analysed.

Most developing countries cannot compete with the rich countries. Investors tend to do 'window shopping' and will usually choose developed countries over developing countries. This can be observed from the fact that most Taiwanese semiconductor foundry companies, including TSMC, UMC and Powerchip Semiconductor Manufacturing Corporation (PSMC),[26] are expanding operations from developing Asia to G7 countries, except Singapore.[27] The negative implications of these policies on developing countries in Asia are beginning to emerge.[28]

Conclusion: Making Industrial Policy Work

Though it is still too early to know whether the industrial policy of major developed countries will work, it is important to note that the success of East Asian countries in the last century, including the 'tigers' South Korea, Singapore, and Taiwan, resulted not only from industrial policies but also from pro-trade or export-oriented policy, capital controls and competitive advantages in keeping low costs. It is also critical to maintain consistent and open macroeconomic policy, exchange rate stability and commitment to human capital development. For democratic, developed countries, maintaining a consistent policy with different ruling parties is challenging.

In Southeast Asia, some national governments also try to adopt their own industrial policies to develop semiconductors and EV and battery supply chains. Malaysia, Thailand, Vietnam, the Philippines, and Indonesia all put forward new master industrial plans or programmes.[29] The re-shoring and near-shoring initiatives and self-sufficiency and trade protectionism by developed countries pose challenges for them. They are also under increasing geopolitical risks as, from time to time, they were forced to choose sides between China and the US. The weakening global trade order and fragmentation of world trade also threaten their exporters' access to international markets and growth drivers.

In order to reduce risks and impacts to developing countries, the US and EU should discuss and strengthen policy coordination and collaboration with the developing countries. The Southeast Asian countries can be important supply chains partners and can maximise the benefits of the US and EU industrial policy. Furthermore, comprehensive empirical study should also be jointly conducted to understand the implications of the policies and programmes and suggest effective ways to improve them.

25 In 2022, Japan subsidised Micron (US$320 million) and Western Digital (US$644 million) to increase their chip production in the country. In November 2022, Japan announced that it would invest around US$500 million in a new chip company – Rapidus - together with companies such as Sony, Toyota and IBM. It aims to start producing next-generation chips (under 2 nm) in the second half of the decade.

26 All these companies are leading global semiconductor foundry companies. UMC is Taiwan's first semiconductor company and ranks as the second-largest semiconductor manufacturer, while the PSMC ranks as the fourth-largest semiconductor manufacturer.

27 Before the current new investment projects, all these Taiwanese companies had foundries in Taiwan, China and small factories in Singapore.

28 William Bratton, 'U.S. and EU embrace of industrial policy puts Asia at risk,' Nikkei Asia, April 14, 2023, U.S. and EU embrace of industrial policy puts Asia at risk - Nikkei Asia.

29 For example, Malaysia delivered a New Industrial Master Plan 2030, aiming to build more competitive industries and advance economic complexity. Indonesia has a new 2025–45 National Long-Term Development Plan, focussing on EVs, ICT and other strategic industries. See 'Industrial policy makes a comeback in East Asia,' East Asia Forum, 22 December 2023, https://eastasiaforum.org/2023/12/22/industrial-policy-makes-a-comeback-in-east-asia

Discussant Comments

Bernard Yin Yeung

I would like to first congratulate CSEP and the co-organisers, Dr Rakesh Mohan and Dr Danny Quah, for organising an excellent, timely, and fruitful forum on industrial policy.

It is an honour to be invited to discuss Director Kristy Hsu's paper "From Free Trade to Industrial Policy: Assessing Policy Shifts in Major Developed Countries and the Implication for Developing Asia". The well-written paper provides a useful snapshot of many issues, particularly on the following: (i) The current round of industrial policies is unique – the motivation is to contain China and gain resilience; (ii) the policies create inefficiency, violate multilateralism, and hurt developing countries; (iii) Asian countries and many developing countries in the past benefitted from open trade policies, but currently, they face challenges because of geopolitics.

In the following, I comment on three issues: (i) the distinctiveness of the current round of industrial policies and the damages; (ii) the anatomy of the worrisome trend of narrative-based politics, which is light in rationalities; and (iii) the implications for Asia, especially Southeast Asia.

The Distinctiveness of the Current Round of Industrial Policies and the Damages

The Distinctiveness

It is intellectually honest to call the economic policies in the West and China an economic war between two camps: the US plus the European Union countries against China. They are not industrial policies.

The systemic data are revealing. The January 2024 IMF working paper, "The Return of Industrial Policy in Data" by Simon Evenett, Adam Jakubik, Fernando Martín, and Michele Ruta, reports the creation of a very detailed New Industrial Policy Observatory dataset, which is an initiative to document emergent patterns of policy interventions associated with the return of industrial policies.

Three patterns are noteworthy in their stock-taking on 'industrial policies' enacted in 2023 based on quantifiable actions. First, they recorded a shockingly massive count of more than **2,500** new industrial policy actions worldwide in 2023; the actions are concentrated among key economies, with the EU, US, and China accounting for 48 per cent of the measures.

Second, developing economies cannot match the advanced economies' massive direct corporate subsidies and are unfortunate victims.

Third, US politicians' primary stated motivation for direct market interferences is to foster 'homegrown champions' development; they often mention 'supply-chain resilience' which accounts for only about 15 per cent of the stated motivation. Interestingly, about 20 per cent of the time, they explicitly state 'national security' and 'geopolitical tensions' as the motivations. Thus, their actions target 'military/civilian' dual-use products and advanced technology, including low-carbon technology, semiconductors, and upstream inputs such as critical minerals.

The data clearly show that this current round of 'industrial policies' differs distinctly from the old-fashioned industrial policies implemented in the 1960s and 1970s by developing countries to nurture the development of infant industries or to contemplate import.

Rather, the US is currently leading a group of developed countries, mostly in Western Europe, to act concertedly to preserve the US position in directing and controlling technological development. The country and its followers take pin-pointed actions to grab the lead in crucial systemic innovation (e.g., semiconductors, AI, and green energy) while suppressing China's advancement in these areas. One can liken the current round of policies to US' strategic industrial policies against Japan in the late 1980s, to retain its leading and controlling position in semiconductor and communication equipment. One wonders what would happen if the US had acted equally intensively against the European Airbus consortium at the initial stage (which it did not).

Indeed, the current actions are far more intensive and expansive. Multiple developed Western countries are collaborating with the US to contain China's economic growth and international influences. The escalating actions include extensive sanctions and embargoes on flows of goods, technology, and the provision of financial and human capital services, all levied against China and her

companies.[1] In the name of 'enhancing national security,' 'preserving world order,' and/or 'protecting democracy and human rights,' politicians continuously develop direct and indirect policies that heighten the political risks of companies doing business in China or with Chinese corporations. Clearly, the purpose is to slow down China's development and deny its advancement in selected technology, economics, and global influence.[2]

China has often responded in kind. In the **"Made in China 2025"** report, it declared its strategic goals to be greater self-sufficiency and raising its production share in high-tech areas. This provoked the West, which China used to depend on in several areas, for e.g., to acquire chips; the Western mass media blamed China for instigating an economic war.

What and how the situation got triggered is now irrelevant. What goes on is a *de facto* economic warfare between the two camps: the objective is to harm the opponent, even at a significant self-inflicted cost. I dare say that, since WWII, the world has not witnessed such large-scale destructive economic policies.

The Damages

Director Hsu has described some of the damages. I would like to reinforce and extend her points. The damages of the economic warfare are extensive and long term in nature.

First, in pursuing the negative-sum game, ongoing policies intending to inflict harm on an identified opponent have destroyed multilateralism and the global governance framework for free trade that has benefitted the world for decades.[3]

Second, these negative-sum game policies create fragmented and inefficient global production systems. The policies, particularly the threats of imposing sanctions and embargoes, create political risks that discourage companies from doing business with or in China.

To mitigate their exposure to political risks, firms have to carry out reshoring or friend-shoring, which involves abandoning useful production facilities in China and investing in costly new plants and equipment elsewhere that are less efficient than the abandoned ones.

Director Hsu points out that the new TSMC plants in the US face challenges in some areas, such as hiring engineers and workers who are as good as those they left behind in Taiwan. Challenges in reshoring and friend-shoring include adapting to a host country's cultural, administrative, economic, and business environments. International business experts tell us about the infamous 'liability of foreignness.'[4] Furthermore, it will take many years for the host developing countries to match China's current infrastructure and productive labour force. Simply put, the current economic warfare forces corporations to abandon the first-best approach, and many may have to settle with not even the second best but the '*n*-th' best approach.

Third, it is questionable whether these production reallocations enhance supply-chain resilience. The reallocations expose components of supply chains to areas with poorer infrastructure, which are vulnerable to dramatic weather patterns or earthquakes. The developed countries instigating the changes may appear to gain in the short term, but what awaits them are longer-term inefficiencies – productivity losses, higher costs of production, inflation, and fewer innovations. At that point, the downside of their vast spending on subsidies will surface; the real return on these subsidies will be below expectations.

Fourth, developing countries are likely to suffer most from the current economic warfare. Restrictions on financial flows, technology transfers, and trade usually greatly harm developing countries. The current negative-sum policies deplete opportunities in developing countries and aggravate the brain drain from them. It is a no-brainer to say that the ongoing economic warfare shaves a few percentage points from world economic growth. Lower-income classes and countries will disproportionately bear the immediate impact and future fallouts, but no one will be spared.

Fifth, efficient innovation relies on a vertically and laterally connected system where innovators, customers, and many intermediate producers are seamlessly interconnected. Science advances most when knowledge knows no borders. Innovators can develop better solutions when they know of existing problems. Users trying to solve problems can see suitable applications of available innovations. Furthermore, much about innovation is a recombination of capabilities; therefore, lateral connectedness among innovators is essential. Undoubtedly, there are many economies of scale and scope when users and originators of applied and translational scientific discoveries are seamlessly connected. Indeed, seamless vertical and lateral connections and the efficiency of globalisation fuelled the chips to realise Moore's Law. The pending fragmentation ends Moore's law.

Sixth, financial and monetary chaos could follow if the world capital market is fragmented. The world's capital market is US dollar-dominated and anchored around the idea of US T-bills as a 'risk-free' asset. While China's capital market is not fully open, its foreign reserves freely flow to the US T-bill markets, and flows of foreign capital into and out of China have been liberalised. In that way, the world has a well-connected system of capital markets anchored around a freely traded 'risk-free' asset, the US T-bill. The economic warfare and

1 The actions against Russia and her companies could be for different reasons.

2 For example, the 'cartel' prohibits China from obtaining advanced semi-conductors (chips), EUV and related components (a key machine to print complex patterns onto semiconductor materials), and software to design advanced chips; it also disallows US citizens and US permanent residents from working for Chinese companies in related semi-conductor designing and manufacturing. Many non-systematic and private actions are under-reported, such as US legal companies ordering lawyers working in their subsidiaries not to represent Chinese firms, including a university in Hong Kong.

3 See "How Trump Could Deal Another Blow to Already Hobbled WTO," *Bloomberg*, September 4, 2023 by Bryce Baschuk. The article starts with, "Rising protectionism and rogue trade wars have diminished the World Trade Organization's status as the global arbiter of trade. The US played a key role in its decline — first with former President Donald Trump's unilateral tariffs and attacks on its dispute settlement system, then with President Joe Biden's decision to stay the course."

4 See *The Laws of Globalization and Business Applications*, Cambridge University Press, New York, 2016.

the US aggressive weaponisation of its dollar and capital market power will create capital market fragmentation,[5] leading us into a new era if the situation is not arrested. We know what life will be like moving from fragmentation to liberalisation, but not when capital markets break up. The last time this happened, WWII followed.

As Professor Eswar Prasad wrote, "The world will regret its retreat from globalization" (*Foreign Policy,* March 24, 2023).

An Anatomy of the Worrisome Trend

Our worries go beyond the current damage to the global economy. Both sides' ongoing rhetorics and counter-productive policies deepen mutual distrust and can lead to full-scale military conflict. In his speech last year at CSEP, then Senior Minister and current President of Singapore, Tharman Shanmugaratnam, explained that decoupling increases the risk of war.

Many worry that hot spots around China's borders (and Ukraine, the Middle-East, etc.) could lead to military conflicts that escalate into full-scale military actions. Even the most heartless hawks may not want that to happen. Yet, both sides continue their mutually provoking gestures, actions, and policies.

Politicians need to 'perform' to get support, whether in a Western system of winning an office by popular vote or in a system where the ruling party needs to live up to its implicit social compact with its citizens. They naturally cater to what appeals to their population. Unfortunately, both sides have complex internal issues that call for unpopular solutions. Politicians turn to the largest common denominator – being 'tough' on external enemies; if none, they create one.

Their rhetoric, actions, and sponsored policies fuel more misunderstanding, misinformation, distrust, fear, and even hatred toward external enemies. These developments feed further into even more provocative and aggressive political gestures, actions, and policies.

Worse, unscrupulous politicians engage in reckless behaviour after low-hanging fruits from playing the blame narrative become sparse. They adopt the 'I blame thy enemy harder than thou' strategy to gain support. Some deliberately poke into land integrity issues to garner attention. Because of them, the world has become more dangerous than ever.

Righteous anger based on facts and rational analytics empower human beings to right the wrong. However, manufactured anger based on fabricated information, misinformation, and blame narratives draws human beings to do the opposite. Rational and fact-based discussions keep us in the former. Unfortunately, the rise of social media and AI can quickly lead us into a world where political correctness mutes rational and factual discussions. Even mainstream mass media are co-opted to follow. The series of articles by social psychologist Professor Jonathan Haidt brilliantly points out that AI can make social media more toxic and that the smartphone-based environment is hostile to human development. (See https://www.theatlantic.com/author/jonathan-haidt/)

Global happenings in the past few years expose how the world has been trapped by the flaws in its socio-political systems.

The rapid rise of China after its WTO entry indeed took away many manufacturing jobs in the US and EU countries. While China's manufacturing prowess kept inflation at bay and benefitted consumers globally, a simple *Heckscher-Ohlin* model on trade perfectly predicts the distributional consequence in a capital-intensive country when trading with a massive labour-intensive country: its return to capital, including human capital, will go up and wages will decline. In the past two decades, the fast growth in China's labour productivity – largely due to its huge investment in infrastructure, education, and fixed capital – and vast technology transfer accelerated the trend. Thus, while open trade brought a positive net benefit to the capital-intensive nation, its government should consider providing fiscal transfers.

Furthermore, long ago, Professor Michael Mussa (1978) explained that dynamic adjustment will follow trade opening; for example, there will be shifts in industrial structures and the demand for skill sets. When such adjustment is sluggish, the government may have to facilitate adjustment proactively, especially when the trading partner is growing rapidly.[6]

Professor Samuelson's *Journal of Economic Perspectives* paper (2004) can be interpreted as saying that complacency in bolstering one's productivity leads to losses in living standards when one's trading partner is working hard on bolstering hers.[7]

Singapore has opted to adopt constructive policies along these lines: its economic strategies since 2010 have been emphasising shifts in industrial structure, productivity growth, continuous education, innovation, entrepreneurship, and investment in future technology. Such a constructive approach takes conscious self-reflection and leadership.

Politicians usually look for an easy way out, as Professor Hayek said in *The Road to Serfdom*,

"*It seems to be almost a law of human nature, that it is easier for people to agree on a negative programme, on the hatred of an enemy, on the envy of those better off, than on any positive task. The contrast between the 'we' and the 'they,' the common fight against those outside the group, seems to be an essential ingredient in any creed which will solidly knit together a group for common action. It is consequently always employed by those who seek, not merely support of a policy, but the unreserved allegiance of huge masses.*"

Professor Hayek predicted the behaviour of 21st-century politicians in the West. Instead of seeking a constructive solution in global competition, they resort to protectionism, nationalism, and populism. The trade war started roughly

5 Including both the use of long-arm jurisdiction, exclusion from swift, freezing and even confiscating opponents' reserves, and numerous capital market-related sanctions.

6 See Mussa, Michael, 1978, "Dynamic Adjustment in the Heckscher-Ohlin-Samuelson Model," *Journal of Political Economy*, Vol 86, no. 5.

7 See Samuelson, A. Paul, "Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization," *Journal of Economic Perspectives*—Volume 18, Number 3—Summer 2004, pp. 135–146

in 2016, multilateralism ended, and the age of blame narratives began.

A high-tech war followed. Back in 2013, the *World Economic Forum* coined the term the fourth Industrial Revolution. The meaning is that economies, as in past industrial revolutions, will face revolutionary changes because of neck-breaking advancements in IT, IOT, supercomputing, sophisticated semiconductors, AI, material science, medical-physics, bio-medical science breakthroughs, and so on.

The world's leading nations adopt the belief that there are dynamic economies of scale and scope in controlling the direction of these technological developments. Countries choose to be depended on rather than to depend on others. China in 2013 issued the high-profile and aggressive 'Made in China 2025' report. President Biden started the chip war in 2022.

The sad part is that to leverage the 'we' vs the 'they' sentiment, politicians must invoke exaggerated national security threats; this happens on both sides of the economic war.[8] Once national security is involved, an enemy has to be identified. Then, politicians, mass media, and ordinary people all adopt a hostile attitude toward the designated 'common enemy.' Ordinary people are innocent until proven guilty, but enemies are guilty until proven innocent. Social media writers can irresponsibly fabricate stories and face little consequence. They compete to develop and spread outrageous rumours. Questioning the authenticity of accusations is unpatriotic. Political correctness quickly takes centre-stage and mutes rationality. Fact checks, triangulation, and rational cost-benefit evaluation of policies are not in the cart anymore.

We hope there is no hot war. However, the economic war is causing long-term damage to the world. We have to wonder how future politicians would view the current world.

Development of a New Asia

Amid geopolitical tension, many ASEAN and South Asian countries avoid taking sides and maintain workable relationships with both sides. They become relocation favourites for businesses, manufacturing, and personal wealth. Furthermore, China's internal economic and policy tensions motivate some Chinese companies and wealthy people to conduct international diversification. ASEAN, particularly Singapore, is a favourite location. Currently, Southeast Asia hosts many mini globally connected supply chains. It may facilitate positive exchanges and cooperation.

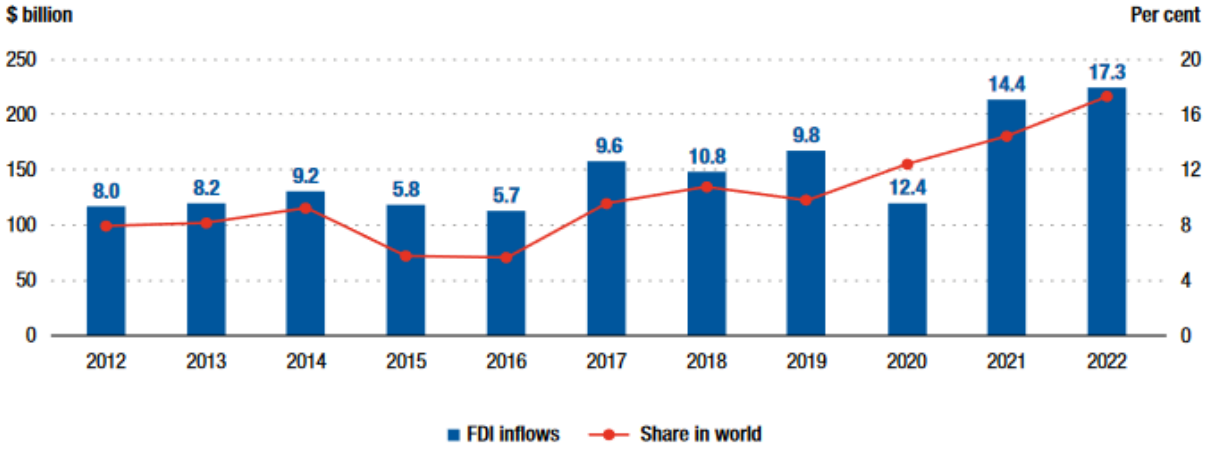
Allow me to draw on the publicly accessible *ASEAN Investment Reports* for 2023 and 2022 to describe what is happening in ASEAN.

Figure 2 (from p. 6 of the 2023 Report, Ch. 2, Figure 2) shows ASEAN's FDI inflows and share of world inflow between 2012 and 2022. The trend in recent years is undeniably positive. ASEAN's inward FDI share rose steadily from 9.8 per cent to 17.3 per cent between 2019 and 2022.

Figure 3 shows that in the same period, Singapore got the lion's share of all the inward FDI in ASEAN; the rest is rather decently spread across the other ASEAN countries. Singapore gets about 5-6 times more inward FDI than its fellow countries because it is a 'headquarters' city for ASEAN, a financial centre, and a trading port; much of the inward FDI in ASEAN is classified as 'finance & insurance' and 'wholesale and retail trade'.

The *ASEAN Investment Report 2023* further shows (pp. 8-10) that from 2020 to 2022, the surge in greenfield inward FDI in ASEAN in 2021 and 2022 was concentrated in EVs and semiconductors. The inward FDI in batteries and EVs is illustrative (see Figures 8 and 30 from the *ASEAN Investment Report 2023*).

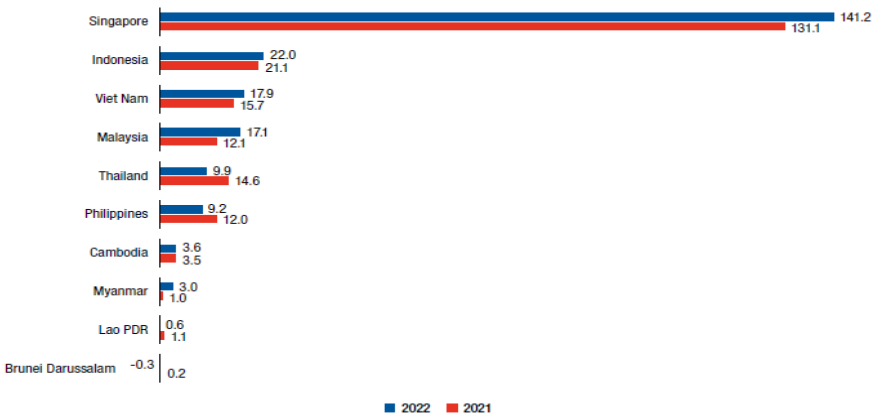
Figure 2. ASEAN: FDI inflows and share in world inflows, 2012–2022 (Billions of dollars and per cent)



Source: UNCTAD, FDI/MNE database (https://unctad.org/fdistatistics).
Note: Data exclude financial centres in the Caribbean and special purpose entities in reporting countries.

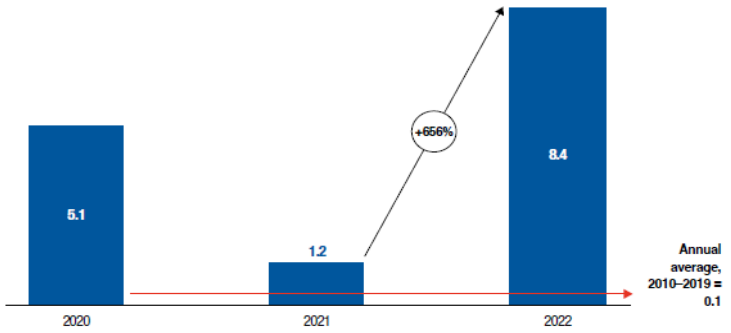
8 On China's side, politicians breed and hold onto the anger that the Chinese harbour for the humiliation when the country was treated as a sub-colonial state during the colonial-imperialism era, particularly related to Japan's colonisation of Taiwan and the brutal invasion from 1931 to 1945. Reversal of the past has become a CCP mandate.

Figure 3. ASEAN Member States: FDI inflows, 2021 and 2022 (Billions of dollars)



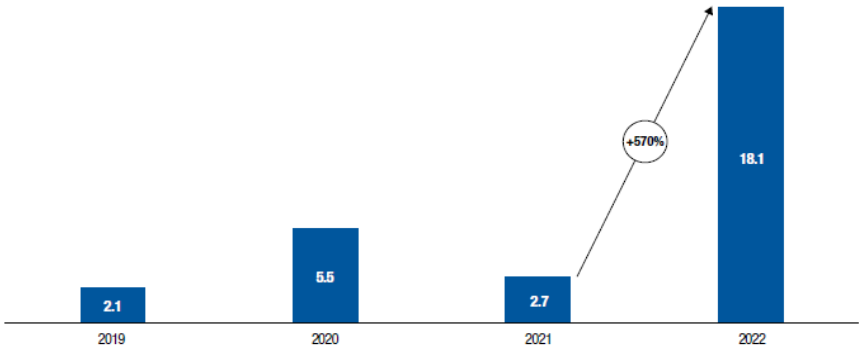
Source: ASEAN Secretariat.

Figure 8. ASEAN: announced greenfield investment in battery production, 2020–2022 (Billions of dollars)



Source: UNCTAD.

Figure 30. ASEAN: international investment in EV-related sectors, 2019–2022 (Billions of dollars)

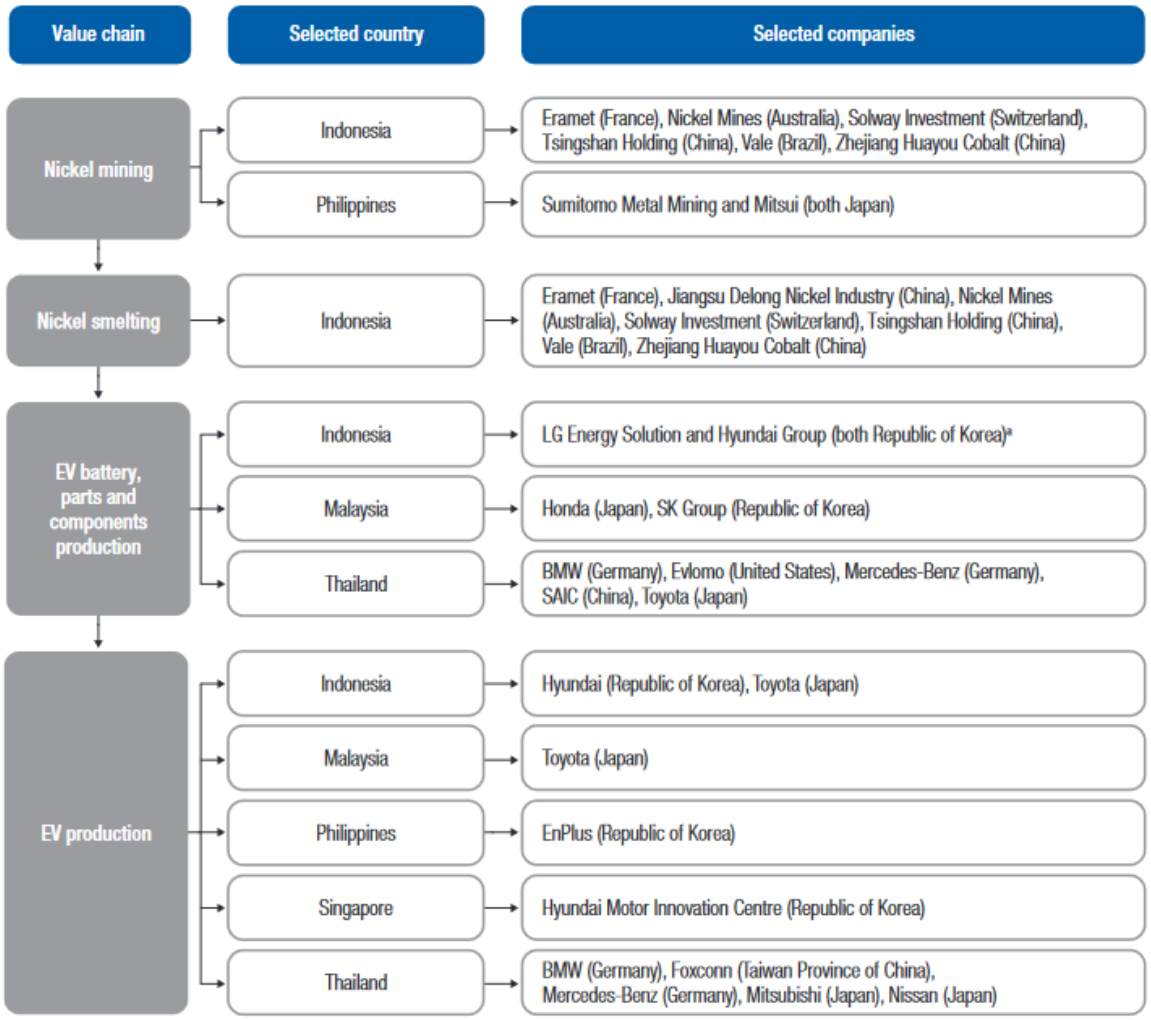


Source: UNCTAD.
Note: Covers mostly mining of critical minerals (nickel and cobalt), battery production and EV manufacturing.

Figure 3 of the *ASEAN Investment Report 2022* (p. 18, XVIII) provides detailed information. It reports who made the investments in the EV value chains, from nickel mining and smelting to battery production, to manufacturing and related R&D activities, and to investment in new infrastructure. These investments are spread across ASEAN countries, forming an international network. Firms from Australia, Brazil, China, France, Japan, and Switzerland invested in mining and smelting in Indonesia and the Philippines. Battery manufacturing plants are located in Indonesia, Malaysia, and Thailand; the investing firms are from China, Japan, Korea, Germany, and the US. EV production is spread across Indonesia, Malaysia, the Philippines, Singapore, and Thailand; the investing companies in this are from Korea, Japan, Germany, and the Taiwan Region.

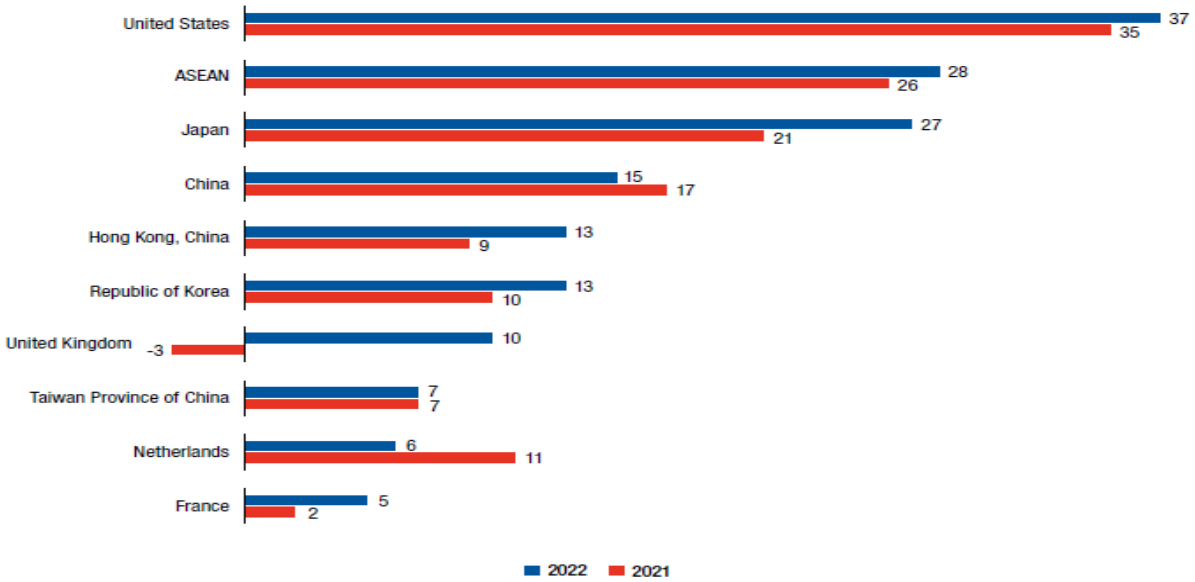
Figure 9 of the *ASEAN Investment Report 2022* (p. 12) shows the overall trend in the origin of inward FDI in ASEAN. The top four direct investors originate from the US, ASEAN, Japan, and China (including Hong Kong**).** Many of the ASEAN direct investors are from Singapore, a globally attractive country that serves as a headquarters/hub for further investment in ASEAN. When these companies or investors invest in other ASEAN regions, they are classified as having originated from ASEAN. Thus, one can say that direct investments in ASEAN originate from the US, China (including Hong Kong), Japan, the EU, and South Korea.

Figure 3. EV value chain in ASEAN



Source: ASEAN Investment Report 2022 research.
[a] LG consortium consists of LG Chem, LG Energy Solution, LG International, Posco (all Republic of Korea) and Huayou Holdings (China).

Figure 9. ASEAN: top 10 investors, 2021–2022 (Billions of dollars)



Source: ASEAN Secretariat.

The *ASEAN Investment Reports'* data clearly show that, from 2020 to 2022, ASEAN has been attracting inward FDI globally. These investments have formed a globalised supply chain in the increasingly internally connected ASEAN. This is good news. Their proximity gives these firms opportunities to communicate, enhance their understanding of one another, and even to collaborate.

Each of these investing firms have something to offer. The following is a real example that I have edited to protect the company's identity. A company focused on digitisation, and it contributed to economising a certain vital public service. Based on capabilities it has developed at home, the company has formed joint ventures with others and invested in Singapore and other neighbouring countries. However, it cannot expand its contributions in an unconstrained manner because of potential long-arm jurisdictional sanctions. Additionally, it has to take many cumbersome measures to find ways to avoid political risks. Still, despite being constrained, the company is making tremendous contributions; its partners are most grateful for the learning and opportunities to collaborate. The positive spillovers from international collaboration in ASEAN can benefit many other countries, both in the East and the West. The company is praying that governments on both sides of the economic war do not create more political interference.

While murky, the disguised anecdote can help us develop a hunch on the potential positive roles ASEAN can play in the current global economy. It would be most encouraging if India and China could join the growing region proactively and constructively. It will be most unfortunate if geopolitics tears apart this region.

Conclusion

The world economy suffers tremendously due to politically motivated policies, which have become an economic warfare. Western media blamed China's "*Made in China 2025*" report and its *Belt Road Initiatives* for starting the trend. Coupled with China's success in manufacturing, there is a rising sentiment of distrust and fear towards China in the West.

Around 2016, politicians in the US enacted protectionist policies. Multiple draconian initiatives were also launched in 2022 to keep the US's leading position in technological development in IT and AI. Simultaneously, accusations of industrial espionage escalated into national security concerns, deepening the existing distrust.

On the other side, sanctions, embargoes, long-armed jurisdiction, and allegations of dictatorship and human rights violations to justify the West's policy actions contributed to China's sentiment that the US and the West intend to suppress its development. The moves further entrenched the idea that Chinese politicians had to act 'tough,' especially in defending its land integrity and not yielding to Western pressure to change its domestic and international policies. At this point, sentiments on both sides are so mutually negative that political correctness takes centre-stage, muting factual and rational discussions.

While decoupling may not totally take place, it is intellectually honest to admit that the world is in an unsettling economic warfare and is becoming more fragmented. Given politicians' negative-sum mind-set, the current situation can lead the world to economic disaster. In the long run, the world will suffer, and the damage will be especially unkind to lower-income countries, poor people, and the younger generation. A few selected developed countries may experience short-term gains, but the damage is long-term in nature. Thus, it is particularly hard for short-term-oriented politicians to conduct any meaningful self-reflection.

ASEAN and other South Asian economies want to keep a neutral stance and practice rational economic policies. The region attracts inward FDI. The result is mini-globalised supply chains that can benefit the world economy amidst high geopolitical tensions. This is a case where a group of smaller economies can lead to preserving a neutral and interconnected economic region. Sadly, we must ask if powerful politicians in powerful countries will let this happen.

Allow me to extend the application of the quote from Nobel Laureate Professor F.A. Hayek. Criticising the pretence of knowledge amongst economists, Professor Hayek said in his Alfred Nobel Memorial Lecture on December 11, 1974:

"To act on the belief that we possess the knowledge and the power which enable us to shape the processes of society entirely to our liking, knowledge which in fact we do not possess, is likely to make us do much harm."

Perhaps, Professor Hayek's insight also applies to ideologists and ideology-motivated politicians who want to shape the world's political system. They could become the instrument for self-serving lobbyists and harm the whole world.

PAPER 2

Geo-Economic Fragmentation and the Regional Trade Architecture: An ASEAN Perspective

Denis Hew[1]

Introduction

Growing frustration with the lack of progress in the multilateral trading system coupled with geo-economic fragmentation concerns have led to a regional trade architecture that is increasingly being shaped by preferential trade agreements and other forms of economic partnerships. By adopting new approaches and digital technology, global and regional supply chains are becoming more resilient against future disruptions.

This discussion paper aims to examine the implications of geo-economic fragmentation on the regional trade architecture from an ASEAN perspective. The paper also examines how geographic diversification of supply chains by adopting the 'China+1' strategy could benefit ASEAN.

Geo-economic Fragmentation and Regional Implications

Geo-economic fragmentation (GEF) can be generally defined as a reversal of global economic integration driven by strategic considerations. The reversal began much earlier, even before the COVID-19 pandemic, as growing anti-globalisation sentiments became more widespread (Ayer, 2023). More recently, there have been other factors causing GEF. The most recent report by the International Chamber of Commerce (ICC) found that the increase of new industrial policies that support subsidies, export controls and investment restrictions has contributed to greater trade fragmentation (ICC, 2023).

There are considerable economic costs arising from GEF. If left unchecked, fragmentation will undermine economic growth and trade, further widening inequality around the world. These economic costs include higher import prices, segmented markets, diminished access to labour and technology as well as reduced productivity (IMF, 2023).

Intense competition between the United States (US) and China in the technology sector is also beginning to fragment the digital economy. The CHIPS and Science Act introduced by President Biden in 2022 has led to restrictions in US companies exporting technology, software and equipment of advanced computing chips to China. The US has also encouraged its allies involved in the microchip production process to impose similar export restrictions. For instance, Japan and the Netherlands agreed to tighten their export controls of chip manufacturing equipment and technologies to China (Allen et al, 2023).

US-China trade tensions in the technology sector may have an impact on ASEAN member states like Malaysia and Singapore which have deeply embedded microchip fabrication and packaging supply chains. However, there is currently little empirical evidence showing the costs of digital fragmentation in this region. That said, given Southeast Asia's manufacturing and trading hub status, the IMF believes the region will be highly vulnerable to supply chain disruptions should US-China tensions get worse (IMF, 2022).

Growing tensions between Washington and Beijing are showing up in the trade numbers. As a result of significantly higher tariffs imposed by the US on over 60 per cent of Chinese imports, China's share of US imports has declined from 21.6 per cent in 2017 to 16.3 per cent in 2022. Despite the higher tariffs imposed on Chinese imports, China remained the top trade partner of the US over the same period (Freund et al, 2023). Last year, Mexico overtook China for the first time in over two decades as the US' leading source of imports. According to the US Commerce department, the value of goods imported to the US from Mexico rose almost 5 per cent to a little over US$475 billion from 2022 to 2023. Over the same period, imports of Chinese goods to the US fell by 20 per cent to US$427 billion.[2]

1 Denis Hew is a Senior Research Fellow at the Centre on Asia and Globalisation (CAG), Lee Kuan Yew School of Public Policy, National University of Singapore. The author would like to thank CAG research staff Ms. Mae Chow for her research assistance. This discussion paper was presented at the CSEP second annual conference, 1-3 March 2024.

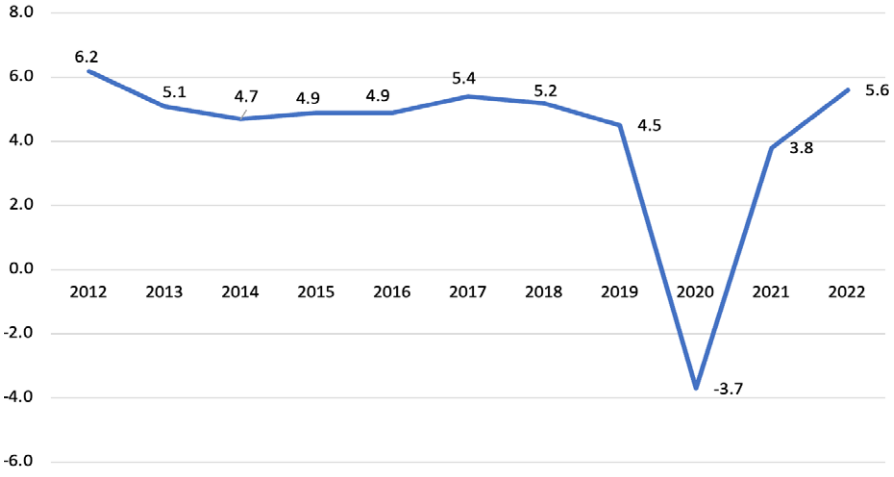
2 Channel News Asia, 8 February 2024. <https://www.channelnewsasia.com/business/mexico-overtakes-china-leading-source-goods-imported-us-4108171>

ASEAN's Policy Responses

ASEAN is an open and business-friendly region with well-established manufacturing supply chains. These attributes have contributed to its resilience and strong recovery in the post-pandemic period, as reflected in its economic growth and trade performance over the past few years (see Figures 1 and 2). FDI inflows to the ASEAN region, especially from outside the region, have also been on a rising trend since 2020 (see Figure 3). Most recent GDP estimates from the ASEAN+3 Macroeconomic Research Office (AMRO) expect ASEAN's economic growth to pick up from 4.3 per cent in 2023 to 4.9 per cent in 2024 (AMRO, 2024).

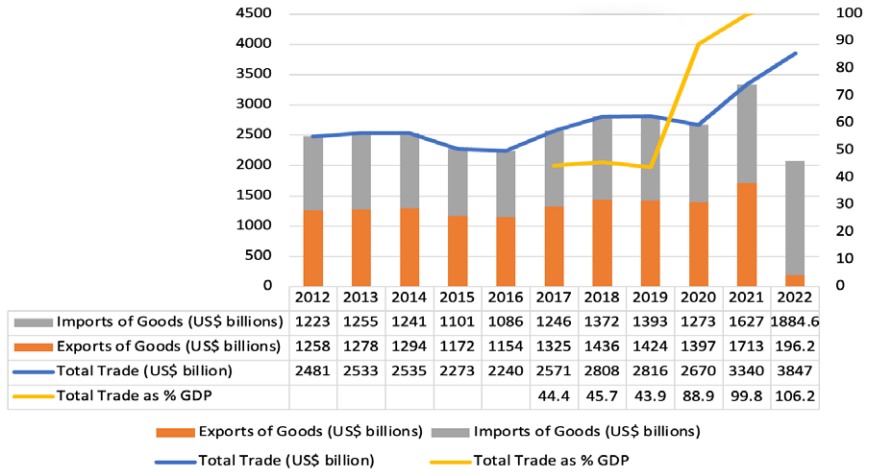
Nevertheless, deteriorating US-China trade relations will have an impact on Southeast Asia given that both countries are engines of economic growth for the region. ASEAN policy-makers have been navigating the headwinds caused by major powers competition by attempting to bridge the differences between Washington and Beijing through regional economic initiatives and capacity-building programmes that are anchored on ASEAN centrality. One example is through the 2019 ASEAN Outlook on the Indo-Pacific (AOIP) strategy – which has a buy-in from both the US and China – and could provide an important platform for economic and technical cooperation. It could also provide a diplomatic platform for its own member states to engage with US, China and other dialogue partners. The AOIP strategy covers four main areas: i) maritime cooperation; ii) connectivity; iii) the UN Sustainable Development Goals 2030; and iv) economic and other possible areas of cooperation.[3] To transform the strategy into concrete policy actions, ASEAN needs to mainstream the AOIP into its work programme, especially on initiatives related to regional economic integration.

Figure 1: ASEAN's GDP Growth, 2012-22 (%)



Source: ASEAN Statistics

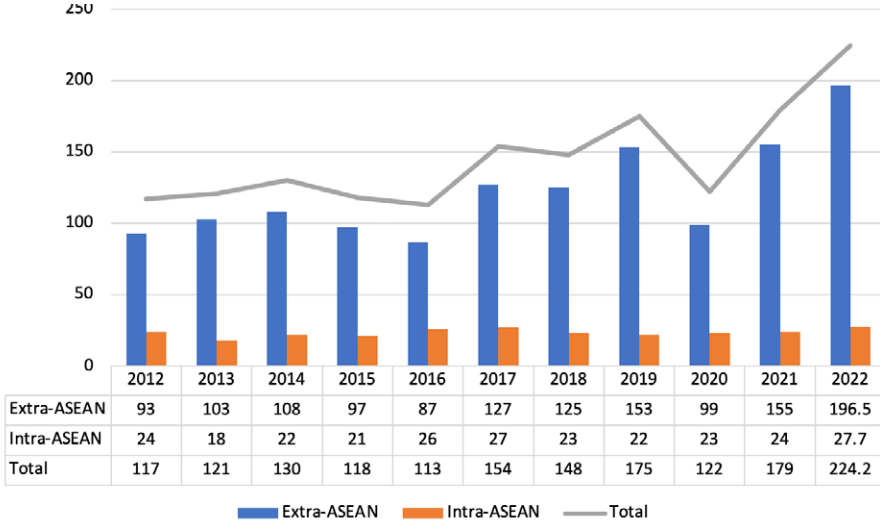
Figure 2: ASEAN's Trade Performance, 2012-22



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Imports of Goods (US$ billions)	1223	1255	1241	1101	1086	1246	1372	1393	1273	1627	1884.6
Exports of Goods (US$ billions)	1258	1278	1294	1172	1154	1325	1436	1424	1397	1713	196.2
Total Trade (US$ billion)	2481	2533	2535	2273	2240	2571	2808	2816	2670	3340	3847
Total Trade as % GDP						44.4	45.7	43.9	88.9	99.8	106.2

Source: ASEAN Statistics

Figure 3: ASEAN FDI inflows, 2012-22 (US$ billion)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Extra-ASEAN	93	103	108	97	87	127	125	153	99	155	196.5
Intra-ASEAN	24	18	22	21	26	27	23	22	23	24	27.7
Total	117	121	130	118	113	154	148	175	122	179	224.2

Source: ASEAN Statistics

3 ASEAN Outlook on the Indo-Pacific, 23 June 2019. <https://asean.org/asean2020/wp-content/uploads/2021/01/ASEAN-Outlook-on-the-Indo-Pacific_FINAL_22062019.pdf.>

Resilient and Surprisingly 'Sticky' Supply Chains

Despite concerns arising from GEF, supply chains have so far been pretty resilient. Based on the experience of supply chain disruptions caused by the COVID-19 pandemic over the past few years, multinational corporations (MNCs) have been making their supply chain networks more resilient. MNCs have started to adopt new technologies like block chain technology (to improve supply chain visibility), better mapping of suppliers (to reduce dependence on a single supplier), as well modifications to existing 'Just-In-Time' manufacturing techniques to allow for inventory buffers (to minimise operational disruptions). However, it is worth noting that there is some trade-off in making supply chains more resilient, as it could lead to lower cost efficiency and higher prices for the end-consumer.

As part of risk mitigation, some MNCs have also reconfigured their supply chains through re-shoring or near-shoring to reduce dependence on a single source or main supplier in their production chain. US-China trade tensions have also led to 'friend-shoring' where manufacturing operations have been diverted away to countries which are considered allies. Nonetheless, rather than complete decoupling due to higher US tariffs, it has only benefitted countries that have specific comparative advantages or have deeply embedded supply chains with China (Freund et al, 2023). Many supply chains have been found to be quite 'sticky' as it takes decades to build-up a sophisticated global or regional supply chain. A recent study by Oxford Economics using bilateral trade data from 2018-23 to trace cross-border flows of intermediate inputs found that global supply chains were relatively 'sticky' and that large-scale near-shoring has not been a prevalent strategy by MNCs. In fact, global supply chains have continued to expand during this period. Several reasons for this observed stickiness include: deeply entrenched supply chains; global scale logistic challenges; significant capital investments for reconfiguration (which take time to secure); and regulatory and compliance issues.

Against these trends, having a 'China+1' strategy allows companies to geographically diversify their supply chains to spread their risks. As mentioned earlier, some of the more industrialised ASEAN member states have benefitted from this spill-over. However, there are limits to how much these relatively smaller countries can scale up to match China's industrial capacity. For instance, China contributed about 30 per cent of world value-added manufacturing in 2022 compared to Vietnam's 0.6 per cent.[4] In terms of employment, China's labour force is also substantially larger, at 2.7 times the size of ASEAN's (Zenglein, 2024).

A case could be argued that the 'China +1' strategy could work well if the '+1' is not an individual country but a regional economic area that is becoming increasingly integrated like ASEAN. In fact, this has been the ultimate goal of its two-decades-old economic integration project – the ASEAN Economic Community (AEC) – which aims to create a single market and integrated production base. The thinking is that if the AEC succeeds, it could persuade MNCs to divert an even larger share of their manufacturing operations from China to ASEAN. In the electronics sector, for instance, an ASEAN-centred diversification strategy is beginning to take shape among MNCs in semiconductor supply chains (Leng, 2024).

ASEAN Economic Integration: The AEC Project

The AEC was launched in 2003 with the end-goal of creating a single market and production base where there is free movement of goods, services, investments, and skilled labour.[5]

There are legally binding economic agreements that have been put in place over the years that serve as important building blocks to achieve this ambitious goal by 2025. These include the ASEAN Trade in Goods Agreement (ATIGA), ASEAN Comprehensive Investment Agreement (ACIA), and ASEAN Trade in Services Agreement (ATISA) as well as numerous mutual recognition agreements (MRAs) to facilitate the movement of skilled labour (Hew, 2023a). Many of these agreements were signed over a decade ago and are currently being upgraded to be more responsive to global developments and challenges. For example, ongoing negotiations to upgrade ATIGA started two years ago after its announcement at the ASEAN Economic Ministers (AEM) Retreat on 16 March 2022.

ASEAN trade agreements have always been aligned with WTO trade rules as well as its long-held practise of open regionalism. In this context, ASEAN signed a regional free trade agreement (FTA) with its major trading partners Japan, China, Korea, Australia and New Zealand, called the Regional Comprehensive and Economic Partnership (RCEP). This regional trade agreement, which came into force on 1 January 2022, will build on ASEAN's existing bilateral FTAs (ASEAN+1 FTAs) and should give the region a much-needed boost in trade and investment. It should also help revitalise and expand existing supply chains in the region (to be discussed in more detail later).

In terms of mobility of skilled labour, the mutual recognition agreements (MRAs) of professional qualifications is a long and protracted process in ASEAN. Meanwhile, there is an acute shortage of skilled workers in different parts of the region. The private sector and the ASEAN Business Advisory Council (ABAC) can play an important role in lobbying ASEAN governments to expedite MRAs to address manpower shortages, particular in key sectors that support supply chains.

By 2025, it is not likely that the AEC will become a European Union (EU)-style common market. An EU-type model for economic integration was never really considered even during the inception stage of the AEC. Realistically, the end-goal of the AEC will likely be a 'FTA-plus' regional arrangement where there is a fully functioning and comprehensive ASEAN free trade area that is more integrated with its major trading partners (through RCEP and its bilateral FTAs).

Regional Trade Architecture is Evolving, More Centred Around Preferential Trade Agreements

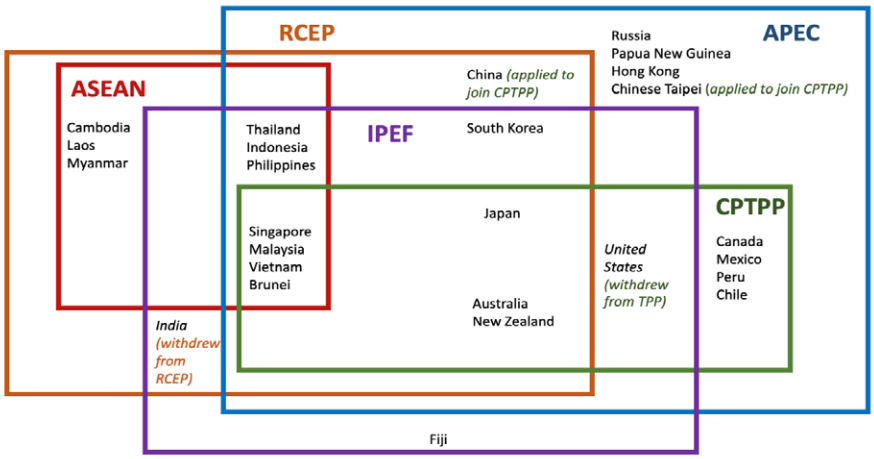
Over the past two decades, the wider Asia-Pacific region has seen a proliferation of preferential trade agreements

4 Author's calculations using value added manufacturing data (current, US$) from *World Development Indicators 2023* database.
5 Declaration of the ASEAN Concord II (Bali Concord II), 7 October 2023.

and other forms of economic partnerships. Recently concluded free trade agreements (FTAs), like the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP), are designed to not only foster greater trade integration but also facilitate the expansion of supply chains. Besides FTAs, there are regional economic and trade groupings such as APEC and IPEF that are also promoting trade liberalisation and economic cooperation (see Figure 4).

Growing frustration at the lack of progress in the multilateral trading system has also led to renewed efforts to discuss next-generation trade issues such as in digital trade/e-commerce and the green economy outside the World Trade Organization (WTO). For example, the Digital Economic Partnership Agreement (DEPA) between Singapore, Chile, and New Zealand is a unique agreement that establishes approaches and collaboration on digital economy issues such as digital trade facilitation and inter-operability across different regimes.[6]

Figure 4: Regional Trade Architecture



Source: Centre on Asia and Globalisation, LKYSPP, NUS.

RCEP: ASEAN-Driven FTA Could Revitalise Regional Supply Chains

The RCEP trade agreement entered into force on January 1, 2022 and is considered the world's largest FTA (30% of global GDP). This trade agreement is often mistaken to be a China-driven trade initiative when it is in fact an ASEAN-led trade agreement. RCEP should help to advance regional trade integration and build on existing 'ASEAN+1' FTAs with its major trading partners. RCEP currently has 13 members which includes all ten ASEAN member states plus China, Japan, Korea, Australia and New Zealand. In 2019, India pulled out of RCEP after seven years of trade negotiations.

RCEP is a traditional type of FTA that focuses mainly on trade in goods and services as well as trade facilitation. Members are expected to eliminate 92 per cent of tariffs on imports between its members within 20 years of coming into force. While RCEP may be considered a conventional trade pact, it is the first-time trade officials from China, Japan and Korea were able to sit together as members of a free trade agreement. The three East Asian countries were never able to form a trade pact among themselves due geopolitical considerations and historical baggage. However, these countries were willing to allow ASEAN to be in the driver's seat of RCEP due to its strategic neutrality and growing economic clout.[7] This is a clear example of how ASEAN officials were able to successfully use ASEAN centrality as a policy tool to shape the regional trade architecture to their advantage.

RCEP's trade rules, especially its rules of origin, are relatively less complex and have regional content and cumulation provisions that allow businesses to have greater market access and take advantage of regional supply chains. Given that there are already existing supply chains, particularly in the manufacturing sector, multinational companies operating in the region will stand to benefit more from RCEP than any other regional trade arrangements.

RCEP membership is open to all countries 18 months after RCEP came into force. There are currently applications from Bangladesh, Hong Kong, and Sri Lanka. Given that India was one of the original members of RCEP, the country can re-join at any time after RCEP comes into force.

CPTPP: Next-Generation FTA has Limited Potential for Supply Chains in Southeast Asia

The CPTPP trade agreement entered into force on 23 December 2018. This FTA nearly did not take off as its champion, the US, pulled out of an earlier version of the CPTPP – the Trans-Pacific Partnership (TPP) – in 2017. Japan with support from the remaining members of the TPP was able to revive negotiations and conclude what was subsequently called the CPTPP in January 2018.

The CPTPP currently has 12 members and contributes about 14 per cent of global GDP. Its members are: Mexico, Japan, Singapore, New Zealand, Canada, Australia, Vietnam, Peru, Malaysia, Chile, Brunei, and the UK (which was the first country to join the CPTPP after it was entered into force in July 2023).

Considered a next-generation regional free trade agreement, it is more comprehensive than the RCEP and covers areas such as e-commerce and digital trade, Intellectual Property (IP) protection, anti-corruption, and transparency as well as provisions for SOE information-sharing and reforms.

The CPTPP tends to have far stricter rules compared to the RCEP on IP rights, labour standards and environmental protection. Nevertheless, its rules of origin have cumulation provisions that would allow regional supply chains to flourish as inputs, and raw materials de-

6 DEPA entered in force on 28 December 2020. More information on DEPA can be found on the Singapore Ministry of Trade and Industry website: <https://www.mti.gov.sg/Trade/Digital-Economy-Agreements/The-Digital-Economy-Partnership-Agreement>
7 In 2022, ASEAN's combined GDP was US$3.6 trillion making it the fifth-largest economy in the world with a population size of 671.7 million.

riving from members will be treated as original content. However, its potential to expand supply chains in Southeast Asia is rather limited at this stage. Major drivers of global value chains like the US and China are not members of CPTPP and only 4 out of 10 ASEAN member states are part of this FTA.

Membership remains open for the US to re-join, but this seems unlikely any time soon. Instead, Washington has proposed an alternative regional economic initiative which will be discussed in the next section. Interestingly, China has formally applied to join the CPTPP in September 2021 and its possible accession could possibly change the dynamics of this regional trade agreement. Other applicants to the CPTPP include Taiwan, Ecuador, Costa Rica, Uruguay, and Ukraine.

IPEF: Future of US-Driven Regional Economic Initiative Unclear

The Indo-Pacific Economic Framework (IPEF) was launched by US President Biden in Tokyo, Japan, on 23 May 2022. Besides the US, IPEF brings together 13 countries which are Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, and Vietnam.

IPEF remains the only option left for the US to re-engage with the Asia-Pacific region after opting out of TPP in 2017. However, IPEF is not an FTA; a modular approach has been adopted to negotiate its four main pillars that cover areas on: i) trade, including digital economy/trade and trade facilitation; ii) supply chains; iii) clean energy, decarbonisation, and infrastructure; and iv) taxation and anti-corruption. This means that members can pick and choose the pillars they are willing to commit to and negotiations can be conducted independently of each other.

This modular approach should reap quicker results. However, only 3 out of 4 pillars were successfully negotiated and concluded last year. Talks on the trade pillars, particularly on digital trade issues, broke down at the side-lines of APEC meetings in November 2023. Given this year is a US election year, there are doubts that the trade pillar can be concluded in 2024.

Given the close nexus between trade and connectivity, the framework seems somewhat incomplete without the trade pillar, and is unlikely to be a powerful policy tool to revitalise global and regional supply chains (Hew, 2023b). If the trade pillar is not concluded within the next year or so, IPEF will likely be overshadowed by regional FTAs like RCEP and CPTPP.

APEC: Cheerleader for the Multilateral Trading System, but its Influence is Waning

Established in 1989, the Asia-Pacific Economic Cooperation (APEC) is the main forum in the Asia-Pacific region to discuss trade and investment liberalisation, structural reform and business facilitation. APEC consist of 21 members which are: Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Philippines, Russia, Singapore, Chinese Taipei, Thailand, the US, and Vietnam.

APEC is not a negotiating forum – economic and trade commitments in this regional grouping are strictly voluntary and non-binding. Given this non-adversarial approach to regional economic integration and its diverse membership (a mix of developed and developing member economies), APEC is meant to provide an ideal platform to incubate new policy ideas and provide economic and technical cooperation.

In recent years, it has been increasingly difficult to implement new APEC initiatives due to geopolitical tensions that have spilled-over to regional economic cooperation. Given that APEC commitments are non-binding and voluntary, it should have been easier to develop cutting-edge projects related to next-generation trade issues, such as digital trade and e-commerce. However, there has been hitherto very little progress on its work programme to advance the digital economy. Against the backdrop of rapid digitalisation and artificial intelligence (AI)-adoption taking place around the world, APEC as a platform for economic and technical cooperation looks somewhat out of step, even irrelevant.

Although a long-time champion of the multilateral trading system, APEC has become less effective in promoting trade and investment liberalisation. Like the WTO, important initiatives that are going nowhere in APEC have been taken out and negotiated in other forums and regional arrangements. A good example is the APEC Cross-Border Privacy Rules (CBPR) system which is a well-crafted data privacy framework that would help businesses facilitate cross-border data flows and interoperability. The lack of take-up by APEC members has led to this initiative being adapted and launched outside the regional grouping as the Global CBPR Forum on 21 April 2022.[8]

One clear sign of APEC's waning influence in the international community is the lack of interest by its members to host APEC meetings. Although Peru and Korea are, respectively, hosting APEC this year and the next, there are no takers in 2026 and only Vietnam has offered to host in 2027. APEC's perceived lack of convening power would indicate that this type of model for economic cooperation may not be as effective as before, and is perhaps institutionally no longer relevant to address the global megatrends and challenges that lie ahead for the region.

Concluding Remarks

The multilateral trading system in its present form is no longer fit for the purpose. There also remain deep divisions among WTO members, and institutional reforms to its dispute settlement mechanism will take a longer time to resolve. But, as the only institution that can regulate and oversee international trade on a global scale, the WTO is 'too big to fail'. Therefore, member countries will need to set aside their differences and work towards ensuring that the WTO is once again fully functional.

Although the regional trade architecture is still evolving, the proliferation of FTAs, like RCEP and CPTPP, as well as other forms of more-specialised economic partnerships are seen as a means to expedite trade liberalisation and advance

8 More information about the Global CBPR Forum is available on its website: www.globalcbpr.org

next-generation trade and investment issues. These trade arrangements together with a fully functioning WTO can play a crucial role in mitigating the negative impacts of economic fragmentation on the global economy.

Among the preferential trade agreements out there, RCEP looks the most promising to revitalise and expand supply chains in this region. Also, RCEP offers the best opportunity for India to link up with well-established manufacturing supply chains in Southeast Asia as well as to tap into ASEAN's growing market. Although membership remains open for India to re-join RCEP, the challenge would be to convince existing members to restart negotiations given that the country pulled out at a very late stage.

Rising tensions between the US and China put ASEAN in a tight spot as the region depends on both countries to drive economic growth and global value chains. Hence, ASEAN would prefer to do business with the two economic superpowers instead of having to choose a side. Leveraging ASEAN's strategic neutrality and building bridges between Washington and Beijing through its AOIP strategy may very well do just that.

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Discussant Comments

Suthiphand Chirathivat

In this session, we will discuss "New Industrial Policies and Geo-economic Fragmentation: Implications for Trade and GVCs," the paper presented by Amita Batra, and the talk by Denis Hew, "Geo-Economic Fragmentation and the Regional Trade Architecture: An ASEAN Perspective". Both provide an excellent background for our debate. Their presentations bring to mind the three waves of industrial policy/development related to the Southeast Asian region or ASEAN that I feel merit our attention here; so, in addition to the current debate, I will also address these in the latter part of my presentation.

To begin with, in order to understand where ASEAN stands today regarding industrial policies, geo-economic fragmentation, trade, GVCs, and the global and regional trade architecture, we should take a few steps back to the historical background of our region's development. Coming from the Southeast Asian region, I would like to provide a short background to three interrelated waves of regional development, and to the industrial and trade policies in the latest wave. The story originates some five decades ago and, from a historical perspective, presents a rich tapestry in making us all what we are today.

The first wave of industrial policy/development was when the five original ASEAN countries embarked on their own industrial and trade policies, Singapore in the 1960s after gaining independence, the rest in the 1970s and the beginning of the 1980s. They all started to shift from trade protection/import substitution policies to trade liberalisation/export promotion. All these were made possible following the success of Japan and the Asian NIEs. With the conclusion of the Plaza Accord agreement in 1987, the trade-led growth of ASEAN-5 benefitted tremendously from new industrial linkages with Japan and the Asian NIEs. This was the first time they were part of the catching-up process of development in East Asia, advised closely by the IMF, the World Bank, and the Asian Development Bank, in addition to close collaboration and consultation among the ASEAN countries.

This does not mean that these changes came about easily. The world at the time was talking about getting rid of industrial/trade protection, tariff and non-tariff barriers, and subsidies which impeded the industrial development of most countries. These were thoroughly discussed at the Multilateral Trade Negotiations of the Uruguay Round, which saw an increasing role of the developing world, including ASEAN, in conjunction with the end of the Cold War, and the transition of China, Russia, and East Europe into globalised economies. All these significant challenges, lessons and experiences for ASEAN were well taken, with Cambodia, Laos, Myanmar, and Vietnam (the CLMV countries), all joining ASEAN in the latter part of the 1990s to make ASEAN-10, the countries of the Southeast Asian region.

The second wave of industrial policy/development was made possible with the strong support of bilateral and regional trade agreements, which led later to the formation of the regional trade architecture. The uncertainties of years of multilateral trade negotiations on long-standing issues like subsidies, TRIPs, TRIMs, trade in services, and dispute settlement mechanisms simply encouraged most regions of the world to defend their own ground. ASEAN started its own ASEAN Free Trade Agreement (AFTA) in 1993, when it was hit by the Asian Financial Crisis of 1997. And because of the setback of the multilateral trade negotiations on issues mentioned above, it became even more necessary for the Southeast Asian region to secure/seek to expand its export markets and its bilateral and regional trade agreements with outside partners to support their goals.

In addition to its own free trade agreement, from the start of 2000s ASEAN entered a period of free trade agreement (FTA) proliferation, both regional and bilateral, with important and strategic partners, namely: China, India, Japan, South Korea, Australia, and New Zealand. This was also seen as ASEAN's widening integration. At the Bali Concord 2 in 2003, ASEAN clearly delineated the process of its deepening integration through the ASEAN Community's three pillars: political and security, economic, and social and cultural, with the support of the ASEAN Charter, ratified between 2009 and 2010, and the implementation of the three pillars starting from 2016.

ASEAN's open and competitive regionalism deployed the ASEAN Economic Community (AEC) from within – using the ASEAN Single Market as a concept and with an extended production base linking it to the outside region through trade agreements, for firms of all sorts to move and invest, to link to global value chains and regional value chains (GVCs/RVCs), leading to the development and fragmentation of our region. ASEAN today has become an excellent ground for firms/people to organise and move GVCs/RVCs and manage production fragmentation across spatial linkages. Along the way, ASEAN built different production processes linked through intermediate goods and services trade, which were the main features of industries like electronics, automobiles, textiles and apparels and the like, some being considered globalisation's "second and third unbundling" (Baldwin and Kimura contributions). There is also a significant difference in regional labour costs that provide room for firms to organise their value chains and production fragmentation. With the support of infrastructure and connectivity, the region keeps improving itself for its production networks to spread out across spatial linkages, linking most major trading partners and looping back to the production base in ASEAN.

Fast forward to the third and current wave of the 'New Industrial/Trade Policies', where we stand today, and which is also interrelated to the first two waves built early on. There are increasing concerns, however, that this wave will be quite different from the former two, with implications which we need to think about. Let me clarify why.

Seeing that the global economy is fragmenting into two separate blocs, and that the multilateral trade rules that have underpinned trade, foreign direct investment and GVCs for nearly three decades are under threat, the question is how wide and far can this geo-economic fragmentation expand and gain ground within the global economy, and what can we, in ASEAN, do together and with our partners. The response is not easily arrived at, and needs more serious reflection. For instance, rising tensions and concerns over security seem to be leading to a curb on trade and a reorienting of FDI, with a new geo-economic fragmentation, based on security resilience and sustainability, rather than production efficiency and trade competitiveness, which was the case in our well-functioning globalised world.

The WTO, which recently hosted the ministerial conference, warned that an outright fragmentation into two rival blocs could shrink the global economy by 5 per cent, with the developing world suffering most as they are at the receiving end. In the extreme scenario, the US and China and their allies would be engaged in a bipolar trade war, and their respective blocs would set their own rules, disregarding multilateral agreements. This is the first issue that should serve as a warning for the rest of Asia. The ASEAN region, in particular, has always been reluctant to choose sides, preferring to work with everyone, but this may not be as easy as it once was. The ability to not choose thus becomes a calculation based on geo-politics, rather than on the rational geo-economics we used to know. The big question is, beyond superpower rivalries, how can we, ASEAN, together with our friends, best support a global rules-based trade order, even if it will not function for the outcomes we would hope for.

The second issue, very well discussed by Denis, is about the new geo-economic fragmentation and the regional trade architecture. Up until the present, ASEAN is fortunate to be situated in this part of the world, and have strong regional integration, both within and with countries outside the region. Our integration can be said to be least trade/investment-diverting, and most trade/investment-creating, in the sense of Viner's theory. We cannot agree more that Asia is globally efficient and productive, and has the scale for production and services in most industries. However, the onset of industrial policies with strong alignments between trade flows and geopolitical affinities, points to the first sign of fragmentation in global trade. Denis might be right when he pointed out that ASEAN is quite "resilient" and has "surprisingly 'sticky' supply chains". ASEAN might be able to continue to exploit trade between blocs which might grow slower, by shifting to more trade within its own regional bloc. ASEAN is a region of diversity, which firms could exploit for their production fragmentation despite concerns about the blocs. This is a plausible scenario, but there is still a long way to go to make sure that ASEAN has a reliable, resilient, and competitive production base.

The last issue is about the way forward for the ASEAN trade architecture, which was also discussed at length by Denis. Here are a few additional points we could think about from his paper.

Firstly, ASEAN is about to launch, within the next year, a second phase of AEC going up to 2045, which is also a long-term plan. It would be helpful if Denis could elaborate and comment on how this new transformation of geo-economic fragmentation and regional trade architecture impacts the new phase of AEC. In particular, the issue is whether the practices of AEC with FTA-plus are enough for ASEAN to maintain its competitiveness, resilience, and sustainability in this new geo-economic fragmentation.

Secondly, the big question for ASEAN is how the region is going to organise this new geo-economic fragmentation. On one side, US' friend-shoring and de-risking strategy seems to benefit the more advanced and intermediate ASEAN countries, from Singapore and Malaysia, to Indonesia, the Philippines, Thailand, and Vietnam, some of them, the closest allies of the US more, if the friend-shoring fragmentation is to happen. On the other hand, the China-Plus-One strategy could also benefit our supply chains for various industries. ASEAN has become the most important trading partner of China since the post COVID-19 period, due in large part to US tariffs being slapped on Chinese goods by the Trump administration, which made China's export share in the US decline from 21.6 per cent in 2017 to only 14 per cent in 2023, which then moved smoothly to the ASEAN region, marking a new closeness. It remains to be seen whether this new geo-economic fragmentation could help ASEAN be a big winner with China. According to some estimates, ASEAN could turn out to be a big winner from both the US and China if managed well in the new geo-economic fragmentation of GVCs. The jury is out, but the situation needs more empirical evidence. For instance,

China is already playing a dominant role in ASEAN in smaller, troubled countries like Cambodia, Lao PDR, and Myanmar. In between, most ASEAN countries have well-established production fragmentation from Japan, South Korea, Taiwan, and even Australia, New Zealand, and the EU to support the creation of all kinds of value chains.

Lastly, on four broader regional agreements, I agreed that RCEP is mostly ASEAN-driven and not China-driven as publicly understood. However, it would strengthen it if India were to join, sooner rather than later. For CPTPP, without the US and only four ASEAN countries, its potential to expand supply chains in ASEAN might be limited, unless the leading members feel like revitalising the entire process. The IPEF, which is newer and not an FTA per se, with modules covering four areas from trade to environment, energy, connectivity, and economic cooperation, is seen as a US-influenced regional arrangement. Beyond Denis's argument on negotiation difficulties, one may speculate whether the IPEF framework reflects most closely, by far, the new industrial policies and geo-economic fragmentation. And finally, APEC which has delivered the least of all the regional arrangements, serving mainly as a forum for leaders to meet for bilateral talks on other important issues rather than focussing on the progress of APEC. These practices have evidently become part of APEC's functioning, as is obvious from recent summits of the past years.


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SESSION 4

Climate Change, Decarbonisation, Energy Transition: Options for New Industrial Policies?

SESSION NOTE

Montek Singh Ahluwalia and Laveesh Bhandari

Introduction

Industrial policy has surged to the top of the national agenda in advanced industrial economies (AEs). This represents a radical departure from recent economic history, and it has revived a debate from more than 30 years ago. As argued recently by Laura Tyson and John Zysman, "New industrial policy for the twenty-first century must account for new global realities by focusing on two goals: ensuring an adequate and competitive supply of the products and technologies needed to achieve economic prosperity and security; and securing a position in the development and deployment of the next-generation technologies that are expected to be essential both to national security and to the transition to a carbon-neutral economy. Since a fully vertically integrated national supply system is a fantasy, these goals require the US and other advanced economies to use industrial policy to achieve significant positions of leverage in markets for specific products and technologies of strategic economic and geopolitical significance."[1]

This session is devoted to discussing the rationale for "New Industrial Policies" that are needed to cope with climate change. Climate-related industrial policies consist of deliberate interventions by governments to alter the structure of the economy, encouraging resources to move into specific sectors, including energy and manufacturing, in such a way that the prospects of climate change are mitigated, or which promote adaptation. These policies are seen to be essential in an increasing number of countries, particularly advanced economies and large developing countries, which have large domestic demand. They are also being seen as necessary to building the political and technological momentum needed for sustainable climate action over the next few decades.[2]

1 Laura Tyson and John Zysman. "The New Industrial Policy and Its Critics". Project Syndicate. Nov 17, 2023 https://www.project-syndicate.org/onpoint/the-case-for-new-industrial-policy-by-laura-tyson-and- john-zysman-2023-11

2 Jane Flegal. (2023). "Industrial Policy + Climate Policy" in Roosevelt Institute, Industrial Policy Synergies: Reflections from Biden Administration Alumni. Washington D.C. https://rooseveltinstitute.org/wp-content/uploads/2023/04/RI_Industrial-Policy-Synergies- Reflections-from-Biden-Administration-Alumni_Report_202304.pdf

The Global Shift Towards Clean Energy and Electrification

The annual COP meetings testify to the importance being given to the global shift towards clean energy. The costs of renewable energy have indeed fallen precipitously in the last decade, and support for climate action is clearly on the upswing. It is argued that these trends have been driven largely by strategic government investment and regulation in key clean energy industries across governments, rather than being a result of market forces.[3, 4] What is interesting is the extent to which academic and policy discussion in advanced economies (AEs) has shifted to the need for implementing "New Industrial Policies" towards this end.

As it happens, the current state of knowledge in the energy and related sectors is seen to be biased in favour of fossil-fuel technologies, due to a history of investment in these areas. This implies that unfettered markets are unlikely to generate sufficient investment in new green technologies. A long history of investments in fossil fuels and fossil fuel-using technologies, and the large social dependence on the production of fossil fuels in certain regions create a steep disadvantage for cleaner sources of energy. A shift away from fossil fuels towards green energy is therefore difficult without decisive policy action. What should such policy actions encompass? Price-based actions such as carbon taxes, subsidies for R&D and innovation, regulatory approaches, and the promotion of critical industries, would all have to be considered. A broad approach, incorporating redirection of technological change toward greener processes and energy sources would be needed at both the national and international levels. It is in this context that industrial policy has come to the fore.[5]

The technology needed for climate management in many areas is still being developed. This is true of grid-scale storage batteries with different chemistries, more efficient electrolysers for producing green hydrogen, fuel cells for certain transport applications, and cost-effective technologies for CCS. Since many international players are directly involved in developing these technologies, and are devoting substantial resources to this effort, it may not make sense to devote a substantial volume of our limited public resources in these areas at this stage.

Transportation, the production of electricity, and industry are the major emitters of the greenhouse gases (GHGs) contributing to global climate change. Industry accounts for 22 per cent of total emissions, and the scope for decarbonisation varies greatly across its sub-sectors. Half the emissions are on account of steelmaking, cement production, oil refining, and solid-fuel transformation (e.g., converting coal to coke). Other industries that are significant emitters are those which use fossil fuels to generate heat, mainly in brick kilns, textile-dyeing and other chemicals, pulp and paper, mining, and metal working, or use them as chemical feedstock (e.g., fertilisers, petrochemicals).

But the availability of power at affordable and competitive costs, and industrial development are major drivers of economic growth and development. Rapid industrialisation is still needed for emerging market and developing economies to continue on their path

3 Gregory F. Nemet. (2019). How Solar Energy Became Cheap: A Model for Low-Carbon Innovation, London: Routledge.
4 Tilman Altenburg and Dani Rodrik. (2017). "Green Industrial Policy: Accelerating Structural Change toward Wealthy Green Economies," Geneva, Bonn: UN Environment; German Development Institute/Deutsches Institut für Entwicklungspolitk (DIE). https://www.hks.harvard.edu/publications/ green-industrial-policy-accelerating-structural-change- towards-wealthy-green-economies
5 Daron Acemoglu, Philippe Aghion, Lint Barrage, and David Hémous. (2023). "Green innovation and the transition toward a clean economy," Working Paper 23-14, Washington DC: Peterson Institute of International Economics. https://www.piie.com/sites/default/files/2023-12/wp23-14.pdf

of inclusive and sustainable economic development. Unlike in advanced economies, the demand for electricity will continue to rise in these economies for quite some time to come, to meet both the unmet demand and as electrification of end-use. It is essential therefore to continue increasing the supply of electricity while also substituting renewable energy for existing fossil fuel sources.

Climate change and efficiency considerations are driving the world steadily towards a future where electricity will become the predominant source of energy. This transition, by eliminating the use of fossil fuels, can have tremendous benefits in terms of reduced emissions as well as greater energy efficiency. At the same time, many new products and processes, including, for instance, EVs, robots, or even 3D manufacturing, lie at the core of this transition. Such an electricity-driven future will naturally depend on components such as semiconductors, and on minerals such as copper and lithium. Ensuring access to these critical minerals, products and technologies is among the key issues motivating the adoption of industrial policy.

Climate Change and Industrial Policy

The importance of industrial policy has also gained greater traction as countries cope with supply chain disruptions induced by the COVID-19 pandemic and in the wake of the Russia-Ukraine war. These disruptions have led to a certain degree of global economic fragmentation and a feeling of insecurity about the stability of future supplies of critical materials: hence there has been a certain shift towards ensuring domestic supplies for essential needs. This constitutes a significant change from the relatively free trade and globalisation of supply chains over the past few decades. Furthermore, among AEs, the feeling of insecurity has been accentuated by the rise of China's manufacturing and R&D capacities, along with its dominance in the processing and production of critical minerals and other materials that are seen to be essential for advancing towards an electrified world. This concern also arises from the emerging geopolitical rivalry between the US and China, an issue which is being addressed in another panel in this conference (theme of Session 1).

Countries recognise this and are searching for ways to improve access to these inputs while reducing exposure to un-dependable global markets. Much of the argument for adopting new industrial policies related to climate change arises from this perceived need. Across AEs, governments are embarking on new industrial policies that seek to ensure stability and growth through a combination of trade controls, regulations, incentives, and subsidies directed toward specific sectors and materials related to the supply and management of energy. So industrial policy is now being utilised by many AEs as they seek to ensure a green, digital, and inclusive future. To meet these urgent needs, governments have announced new industrial strategies such as UK's *Industrial Strategy: Building a Britain Fit for the Future (2017),*[6] the *European Green Deal (2019),*[7] the *Next Generation EU Fund (2020),*[8] the Korean *New Deal (2020),*[9] the US *Inflation Reduction Act (2022),*[10] the US *CHIPS and Science Act (2022),*[11] the *European Chips Act (2022),*[12] and the EU's *Green Deal Industrial Plan (2023).*[13] A key objective is to reduce dependence on critical raw materials and other strategic inputs that will be required for promoting green electricity and green industry.

Key Policy Measures in Advanced Economies

The resources that advanced economies are mobilising through these measures are very large. The Inflation Reduction Act (IRA) aims to mobilise USD 500 billion to support renewable energy production, green-related manufacturing and R&D while encouraging the procurement of critical supplies domestically or

6 https://assets.publishing.service.gov.uk/media/5a8224cbed915d74e3401f69/industrial-strategy- white-paper-web-ready-version.pdf
7 https://ec.europa.eu/commission/presscorner/detail/en/fs_21_3688
8 https://commission.europa.eu/strategy-and-policy/recovery-plan-europe_en
9 https://english.moef.go.kr/skin/doc.html?fn=Korean%20New%20Deal.pdf&rs=/result/upload/mini/2020/07/
10 https://www.epa.gov/green-power-markets/summary-inflation-reduction-act-provisions-related- renewable-energy
11 https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips- and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/
12 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital- age/european-chips-act_en
13 https://commission.europa.eu/system/files/2023- 02/COM_2023_62_2_EN_ACT_A%20Green%20Deal%20Industrial%20Plan%20for%20the%20Net-Zero%20Age.pdf

from free-trade partners. Moreover, the CHIPS and Science Act, the IRA, and the Bipartisan Infrastructure Act put together have also set significant national security and climate goals. Each leverages subsidies, tax credits, loan guarantees, and other standard industrial policy tools to foster research, production, and employment by the private sector in key areas of the economy. Chinese market power in these sectors poses a significant threat to the resilience and security of supply chains, as well as to US and European national and economic security. China's Ministry of Commerce has recently announced new restrictions on the exports of germanium and gallium – minerals used in semiconductors and EV batteries – in the name of protecting its own "national security and interests".[14] A leading global producer of both metals (including 94% of the world's gallium), China has now demonstrated its ability to disrupt critical supplies to the US and Europe.[15] The IRA also incorporates various protectionist measures that, for example, restrict eligibility for consumer tax credits on the purchase of EVs: for eligibility for such credits the vehicle must not only be assembled in North America, but the source of key inputs for its batteries must be sourced outside of China and from a restricted set of locations.

To secure access to critical minerals, the US, European Union, Japan, South Korea, the UK, and Australia established the Minerals Security Partnership in 2022. But incentivising industry to invest in an additional supply chain outside China is resource-intensive and requires policy coordination, including through potentially discriminatory policies. Those policies include subsidies (to favoured producers); tariffs (on Chinese production); or establishment of environmental, social, and governance standards that China would be deemed unable to meet.[16]

Similarly, the European counterpart, the EU Green Deal Industrial Plan (2023) promotes the transition to a net-zero industry and renewable energy production through the loosening of state aid rules until the end of 2025, and provides EUR 225 billion in EU loans and EUR 20 billion in the EU. Other important industrial strategies have been announced in different jurisdictions specifically for semiconductors. Transition to a lower carbon industrialisation process is also argued to offer benefits and opportunities. These include opportunities for producing low-carbon products according to the size of the domestic markets. Many EMDEs would benefit from this green growth if they could marshal adequate and timely responses through industrial policy. These could also generate substantial savings in the cost of using fossil fuels, if successful. In addition to these direct benefits, achieving a sustainable low-carbon industrialisation path would result in indirect spillover benefits such as a cleaner environment and improved health.

For EMDEs, job creation and the extension of energy to their populations are key issues; for AEs, the key issues are job creation and energy security. Industrial policies for low-carbon industrialisation need to be designed and coordinated around these imperatives. These need to be accompanied by diversification into renewable energy sources over the medium to long term. Cooperation between the big emerging powers, China and India on the one hand, and the US and EU on the other in reducing carbon emission would afford EMDEs some leeway to achieving growth from cheaper supplies of coal, while moving at an appropriate tempo to a carbon-free economy. Of course, this leeway should be supported by the large emerging powers and advanced countries through transfers of technology and climate funding.[17]

Accordingly, there are conversations on similar measures in the EMDEs as well, where governments are intervening to help domestic sectors achieve outcomes that markets alone are unexpected to in a short enough period. What are the potential ramifications of such NIP interventions? Will they indeed hasten the transition or delay it through a fragmented economic environment? Under what conditions can such actions enable a low-cost and just transition, rather than a costly one that excludes the poorest from its benefits?

In view of the very large resources being utilised by AEs as described above, what should be the strategies that EMDEs in Asia should adopt in response? One option could be to recognise the existence of these policies in AEs and to benefit from the investments made in R&D end technology development in those jurisdictions. As a result of the large investments and programmes being envisaged in these countries, the increased supply of both essential products like semiconductors and new technologies for greening energy supply and manufacturing should bring prices down to the benefit of EMDEs.

However, the question arises of whether AEs will restrict the availability of products and technologies? What industrial policy strategies should EMDEs adopt in response to the latter possibility? How much should they focus on promoting green manufacturing, and on investing in R&D towards this end? Additionally, how should they respond to AEs' restrictive trade policies motivated by climate change?

These are complex issues and it may need plurilateral, if not multilateral, cooperation among countries for them to achieve globally efficient outcomes and meet their climate goals in time. Short papers on these and related issues will help motivate a discussion and conversations around important aspects of industrial policy in Asian countries and how it can facilitate their transition to low-carbon economies.

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Chairperson's Remarks

Nobuo Tanaka

This session is about green industrial policies—how they could be designed and how well they can work. Decarbonisation is now a topic that everybody is discussing, and very strong government intervention is planned for this area. Definitely, it is industrial policy, which we can call green industrial policy.

I participated just a couple of weeks ago in the 50th anniversary of the International Energy Agency (IEA). The IEA was created in 1974 after the first oil shock, with the mission of providing energy security through the stockpiling of petroleum. Yesterday, I asked Minister Jaishankar about India's intention of joining the IEA.

When I started my job as an executive director, I met Henry Kissinger, who is the founding father of the IEA. Then I asked him what I should do as a new executive director. He said, "Mr Tanaka, your job is to get China and India into the IEA." I tried my best, coming to New Delhi and visiting Beijing so many times, but I never succeeded, unfortunately. However, finally, India announced its full membership to the IEA. This is very great news.

Regardless of India's importance in the energy sector, like petroleum, natural gas, coal, and efficiency, I think the IEA should have India to continue being a valuable international body. Henry Kissinger said it's not only petroleum; if the IEA needs to be the important international body in terms of climate change mitigation and global warming, it needs big emitters like India and China. So, not only for energy security but also for the sake of climate change mitigation, the IEA needs these countries.

At that ministerial meeting for the 50th anniversary, there were so many energy ministers and environment ministers who gathered and discussed the issues. They were saying they are doing decarbonisation using hydrogen, nuclear power, and carbon capture and storage (CCS). I felt like, "Ah, this is kind of a beauty contest of the ministers to be greener and greener."

However, because of this, the IEA's current executive director, Fatih Birol, was heavily criticised by oil-producing countries and major oil producers, as they think Fatih Birol became too green. But Fatih is clever enough to get India into the organisation and rebalance the IEA's greenness by India's existence, because India needs to use fossil fuel like oil, gas, and coal for much longer than the IEA and OECD countries.

So, in rebalancing the nature of the IEA, India will play a role. Of course, India will represent the global south, and the IEA is currently limited to OECD membership, which is a developed country or rich man's club.

Why was India interested in joining? Jaishankar san is very clear that he is not interested in the OECD. But the IEA membership charter requests members to be OECD members first. So, how can we avoid this situation or find a way for India to become an IEA member without OECD membership is a very tricky legal issue. It may take some time, but I think there is a very strong will to make India a part of the IEA family. So, it will happen. And India will play a very important role at this juncture.

If Mr Trump becomes the new president and comes back...I asked Fatih Birol—because the IEA is very good at building beautiful scenarios— "What is the Trump

scenario? You have to prepare." Because this is the biggest challenge for green industrial policy, if any will happen in the near future. Nobody wants to talk about Trump in the ministerial meeting. (Laughter) But this is the hidden agenda for the IEA. We will see. The IEA has a lot of interesting challenges.

I really appreciate that Indonesia is joining the OECD and probably at the same time joining the IEA. If Indonesia becomes an OECD member, it is almost automatic to join the IEA. International bodies should be used for friendly foreign pressure. Friendly foreign pressure means that each country knows what reforms to make, but if it is not politically correct to really squeeze some sectors for reform, you can ask the neutral, objective body to make recommendations. That's the role of the international organisation.

We will see that if the kind of green industrial policy is going to be everywhere, right? There is the Inflation Reduction Act of the US, the REPowerEU and Carbon Border Adjustment Mechanism (CBAM) of Europe, the Green Transformation Mechanism of Japan... and there are lots of potential conflicts among these measures. International bodies should be used for coordination. If the World Trade Organisation (WTO) cannot work, the IEA should play a role. Or the OECD may have a role in giving a standard for carbon pricing and carbon tax because a financial authority must be involved to make decisions harmonised.

Let's go back to the role of international organisations. Sometimes, in the discussion, if we move towards green industrial policy and at the same time have national security and economic security arguments, is it right for countries to import cheap solar panels from China and achieve green transformation? From a national security perspective, maybe we have to stop importing Chinese panels, but at the same time, if we move towards a greener society, we have to use cheap solar panels or windmills. So, this kind of trade-off may be a very interesting subject.

PAPER 1

Unraveling the Energy Complexities to Meet Carbon Neutrality in ASEAN

Tetsuya Watanabe, Han Phoumin, Alloysius Joko Purwanto, Shigeru Kimura, Kei Sudo, and Jun Arima

Abstract

Contributing to the carbon neutrality pathways will require multiple approaches to decarbonising emissions in all sectors. This discussion paper investigates the maximum contribution of all clean technologies, renewables, and fuels to meet carbon neutrality. It uses various existing ERIA studies, particularly the study on "Decarbonisation of Energy System: Optimum Technology Selection Model Analysis up to 2060," which uses data from a linear programming model exercise to minimise total costs to the energy system, when various constraints such as CO2 emissions and the power supply-demand balance are given, in order to check the maximum contribution of all available clean technologies and renewables in the decarbonisation scenario of ASEAN. The key issues and findings provide policymakers a second opinion on how to scale up these clean technologies and renewables in an affordable manner, given all the barriers and costs associated with deep decarbonisation in the future in ASEAN. The paper also provides policy implications of ASEAN's decarbonisation pathways, in which multiple pathways should be looked for to meet each country's specific socio-economic environment.

Keywords: Carbon neutrality, clean technologies, smart grid, electric vehicles (EVs), hydrogen, Carbon Capture Utilisation and Storage (CCUS), critical minerals, carbon market.

Introduction

The Association of Southeast Asian Nations (ASEAN) faces tremendous challenges regarding its future energy landscape and how the energy transition will embrace a new architecture – including sound policies and technologies to ensure energy access, together with affordability, energy security, and energy sustainability. Given the high share of fossil fuels in ASEAN's current energy mix (oil, coal, and natural gas comprise almost 80%), the clean use of fossil fuels through the deployment of clean technologies is indispensable for decarbonising ASEAN's emissions. The future energy landscape of ASEAN will rely on today's actions, policies, and investments to shift the fossil-fuel-based energy system towards a cleaner energy system, but any decisions and energy policy measures rolled out during the energy transition need to be weighed against potentially higher energy costs, affordability issues, and energy security risks.

The outcome of the recent 28th United Nations Climate Change Conference of the Parties (COP 28) will have an influence on national policies across the globe towards becoming low-carbon societies – to limit global warming to well below 2°C, preferably to 1.5°C, compared with pre-industrial levels. Although there is consensus on the need to reduce global warming, the means to that end are wide-ranging, as countries

face different circumstances, and many, not only in the developing world but also among the G20 countries, are still highly dependent on fossil fuels. Key outcomes from COP28 have brought high commitments from world leaders to turn the 2020s into a bold decade of climate action and support. The agreed package of decisions includes strengthened efforts to build resilience to climate change and curb greenhouse gas emissions, and to provide the necessary finance for both. Although it is essential for all countries to reduce emissions, it is clearly a great challenge and risk for developing countries with high-carbon intensity to achieve carbon neutrality. One of the chief issues will be the impact on energy affordability, particularly in Southeast Asia where 90 per cent of energy demand growth since 2000 has been driven by coal, natural gas, or oil. Amongst the pathways, reducing costs and increasing the deployment of renewables and clean technologies, such as hydrogen fuels and CCUS (Carbon Capture Utilisation and Storage) in the developing world are key to this transition.

Despite their decline, fossil fuels will continue to play a role in the global energy sector. Looking into the plausible scenarios of the energy mix, even if all the nationally determined contributions are implemented, coal, oil, and natural gas will still account for more than half of the total global primary energy supply. This is particularly the case in Asia, which will comprise the bulk of incremental energy demand and carbon dioxide (CO2) emissions due to the high dependency on fossil fuels. Therefore, the developing world will need to rely on renewable energy and clean technologies such as CCUS to decarbonise emissions, as many countries will still rely on fossil fuels during the energy transition. As ASEAN strives to ensure energy security and achieve the Nationally Determined Contributions (NDCs) outlined in the Paris Agreement, it is paramount to address these pressing challenges (affordability, security, and environment) through collaborative efforts and strategic policy discussions.

ERIA (The Economic Research Institute for ASEAN and East Asia) in close consultation with stakeholders in ASEAN and East Asia has published research on important carbon neutrality challenges in ASEAN including: the diversity of mitigation pathways towards carbon neutrality, the importance of considering all available technologies and fuels, the crucial role of natural gas and transition technologies, and the underpinning finance. ERIA has released 'The Technology List and Perspectives for Transition Finance in Asia (TLPTFA)' which aims to support smooth energy transitions in developing Asia, with realistic approaches that can facilitate many Asian countries to embark on pathways to carbon neutrality. ERIA has classified the following three stages of technology development to support the shift to net zero:

(1) Early decarbonisation transition technologies: These technologies involve the immediate switch from coal to natural gas power generation, waste to energy power plants in the power sector, and leak detection (LDAR) for fugitive emission reductions in upstream. These technologies can be deployed in the early phases of a country's transition pathway and may be retired before reaching net-zero emissions.

(2) Partial emissions reduction transition technologies: These technologies include the co-combustion of coal-fired power generation with biomass or ammonia, and the co-combustion of gas-fired power generation with hydrogen fuel. The share of biomass, ammonia, and hydrogen in the power generation mix must increase over time. For the upstream sector, we suggest introducing the use of electrification in gas production and processing.

(3) Deep decarbonisation transition technologies: These technologies include Carbon Capture, Utilisation, and Storage (CCUS) combined with coal/gas power generation, blue hydrogen, blue ammonia, and CCUS in gas processing. It is very important to note that CCUS has been selected based on six criteria: emission impact, affordability, reliability, lock-in prevention which highlights the emission reduction plan, do-no-significant harm, and social consideration.

To ensure the success of a smooth energy transition in Asia and other countries around the world, it is very important to mobilise the necessary resources to meet the growing need for clean energy and technologies, while ensuring appropriate finance for a 'just energy transition.' Securing investment for financing sustainable energy infrastructure that is sufficient to support the transition from the current heavy reliance on fossil fuel towards a future cleaner and more resilient energy system is the great challenge of our time. In this regard, fast-tracking energy finance for the energy transition is critical to ensure that countries can secure enough funds to finance their energy transformation. Annual investment in renewables and clean energy has grown steadily since the 2015 announcement of the Paris Agreement on Climate goals. Globally we see a large shift of investment towards clean technologies and renewables. In 2023, an estimated US$1.7 trillion was invested in renewables and clean technologies, while US$1 trillion was invested in fossil fuels. The increasing share of investment in clean energy outpaced fossil fuel investment for the first time between 2016 and 2023. This new trend of global investor sentiment towards cleaner energy systems reflects the fundamental change in public perception towards climate change and the environment. However, attention will need to be given to how developing countries can finance the energy transition. ERIA is advocating appropriate energy transition financing, which focusses on the transition technologies outlined above.

Results Under the Carbon Neutrality Scenario

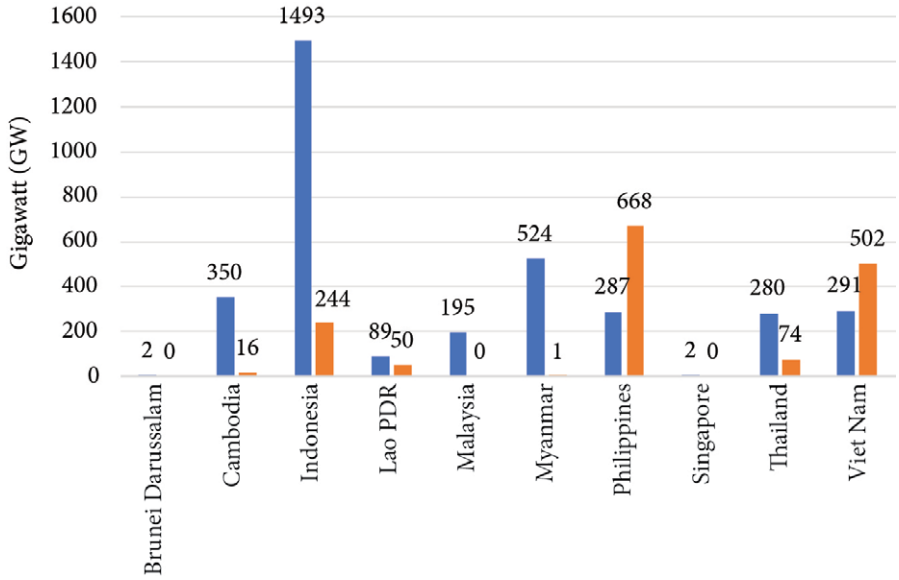
This discussion paper has benefitted from the current data collection and analysis of the joint study project of ERIA (the Economic Research Institute for ASEAN and East Asia) and the Institute of Energy Economics, Japan (IEEJ) on "Decarbonisation of Energy System: Optimum Technology Selection Model Analysis up to 2060." The study used the Optimum Technology Selection Model developed by the IEEJ adopted from the model by Otsuki et al. (2019). The model covers the entire energy systems of 10 ASEAN countries, with a baseline year of 2017 and analyses the years of

2030, 2040, 2050, and 2060. The model also considered energy-related CO2 as a constraint when deploying clean technologies and renewables. Basically, the model is formulated as a linear programming model, taking the cost and performance of each energy technology as input values, and yields a single combination of the scale and operational patterns of individual energy technologies to be introduced. It minimises the total cost of the energy system under various constraints, such as CO2 emissions and the power supply-demand balance. The model covers energy conversion and end-use sectors (industry, transport, households, and commercial), and incorporates more than 350 technologies. It evaluates combinations of technologies by adding factors such as capital costs, fuel costs, and CO2 emissions to each technology. Toward carbon neutrality, ASEAN will see the huge deployment of Solar Photovoltaic together with battery storage, amongst other clean technologies. Figure 2.1 shows the potential of solar and wind in ASEAN (***Global Solar Atlas***; ***Global Wind Atlas,*** 2022); these data are used in the model for the potential resource availability of solar and wind in ASEAN.

Other assumptions about power generation in terms of the Levelised Cost of Energy (LCOE) are also assumed across different types of technologies (Figure 2.2).

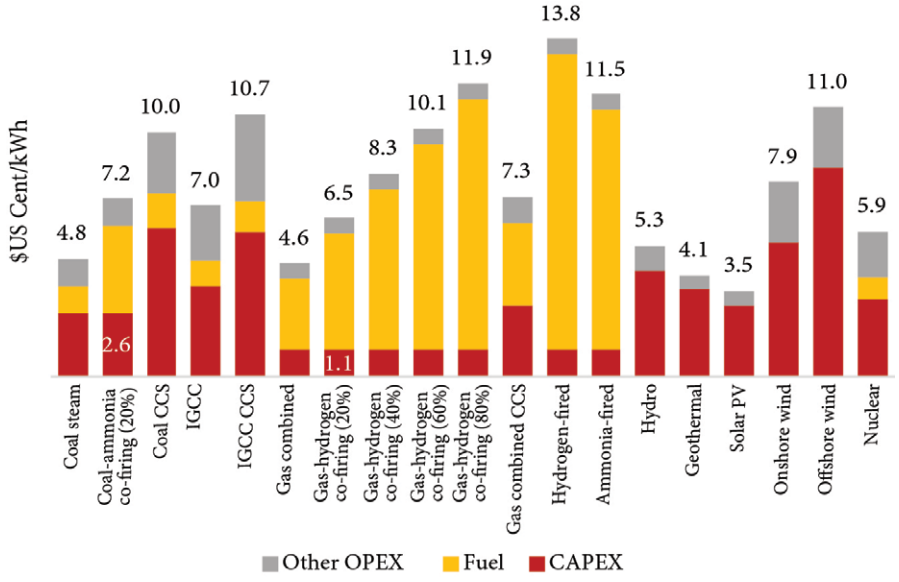
The model also includes other low-carbon technologies such hydrogen (H2)-fired power generation, ammonia (NH3)-fired power generation, and negative-emission technologies, such as direct air capture with carbon storage (DACCS) and bioenergy with carbon capture and storage (BECCS). In the carbon neutrality scenario of ASEAN, ERIA's study has considered the following five scenarios: (1) the baseline scenario, which does not set any CO2 emissions target; (2) the carbon neutrality scenario 2050/60 (CN2050/2060) which reflects nationally declared carbon-neutral target years and considers carbon sinks; (3) the innovation case (CN2050/2060) where five cases describe the impacts of technological innovation; (4) the stringent2030 case, which tightens emission constraints in 2030 (CN2050/2060) to the same level as the IEA Sustainable Development Scenario; and (5) the case without the carbon sink (CN2050/2060 without the carbon sink), which assumes that energy-related CO2 emissions become net zero by 2060 and does not consider carbon sinks. For simplicity, the results of the potential solar and wind penetration into the energy mix are reported for just the baseline scenario and the carbon neutrality scenario 2050/60 (CN2050/2060).

Figure 2.1: Potential of Solar Photovoltaic and Wind in ASEAN Countries



Source: Global Solar Atlas, Global Wind Atlas (2022)

Figure 2.2: Assumption of LCOE by Different Types of Technologies

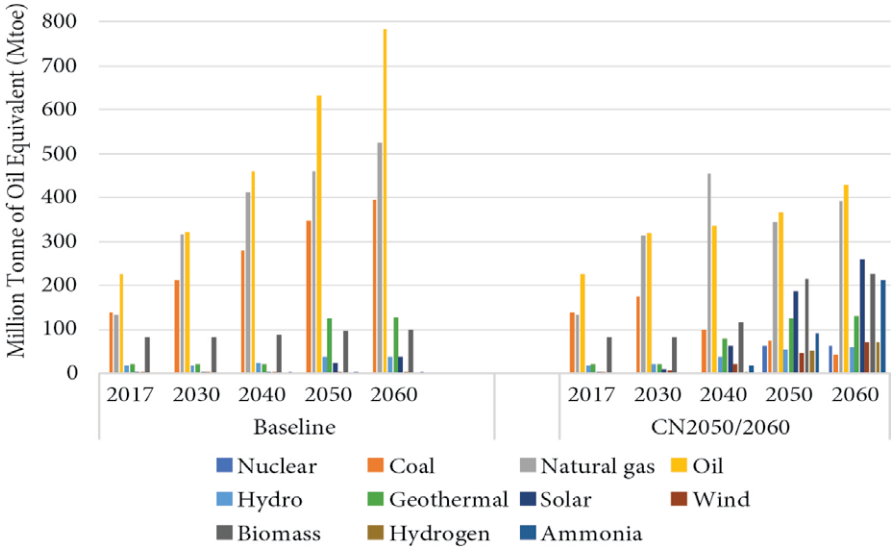


Source: Authors' calculations

Primary Energy Supply in ASEAN for the Baseline vs Carbon Neutrality Scenarios

The ASEAN's energy supply was 616 million tonne of oil equivalent (Mtoe) in 2017, and is expected to grow to 2,006 Mtoe in 2060 for the business-as-usual (BAU) or baseline scenario (Figure 2.3 and Table 2.1). The combined share of coal, oil, and natural gas was about 80.06 per cent in 2017, which will be 85.09 per cent in 2060 for the baseline scenario.

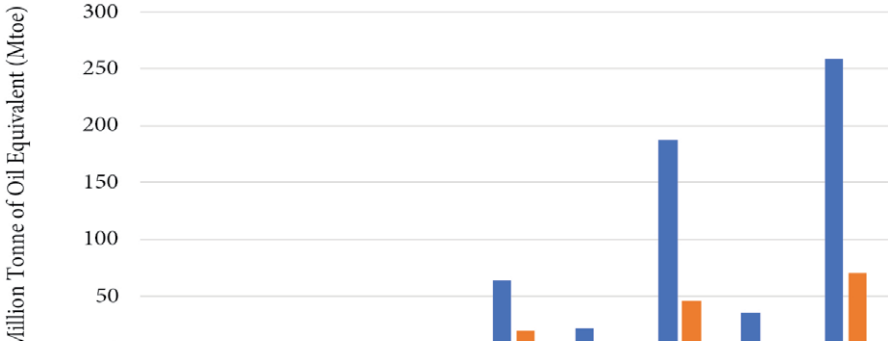
Figure 2.3: Total Primary Energy Supply (TPES) in Baseline vs CN2050/60



Source: Authors' calculations

In the carbon neutrality scenario, clean fuels and renewables are expected to increase significantly from the baseline towards 2050 and 2060. Nuclear is a fuel which could be an option in the carbon neutrality scenario, in which nuclear introduction is expected to enter the primary energy mix – about 62 to 63 Mtoe by 2050 and 2060, respectively. Solar energy is expected to ramp-up its capacity largely along the following schedule: 8.6 Mtoe by 2030; 63.6 Mtoe by 2040; 187.3 by 2050; and 258.7 Mtoe by 2060 (Figure 2.4). Likewise, wind is also expected to increase under the carbon neutrality scenario along the following lines: 5.8 Mtoe by 2030; 19.2 Mtoe by 2040; 45.6 Mtoe by 2050; and 70.3 Mtoe by 2060. Other clean energy such as hydropower, geothermal and biomass are expected largely in the primary energy supply mix under the carbon neutrality scenario. Other new types of clean fuels, such as hydrogen and ammonia, also become part of the supply mix from 2040 onwards in the carbon neutrality scenario.

Figure 2.4: Potential Deployment of Solar Photovoltaic and Wind in Carbon Neutrality Scenario of ASEAN



	2017 Baseline	BAU 2030	APS 2030	BAU 2040	APS 2040	BAU 2050	APS 2050	BAU 2060	APS 2060
		CN2050/2060							
Solar PV	0.5262	1.05	8.59	2.66	63.55	21.61	187.29	35.45	258.75
Wind	0.1983	0.20	5.76	0.20	19.22	0.34	45.61	1.16	70.26

Source: Authors' calculations

Amongst the fossil fuels, coal is expected to reduce drastically in the carbon neutrality scenario, along the following reduction schedule from peak demand: 174.3 Mtoe by 2030; 99.2 Mtoe by 2040; 72.8 Mtoe by 2050; and 42.8 Mtoe by 2060. Oil and natural gas are, in fact, predicted to increase slowly in the carbon neutrality scenario. The main reasons are that: natural gas is used in energy transition and is expected to lead to a clean energy system if combined with Carbon Capture, Utilisation and Storage (CCUS); and oil will remain an important fuel for transportation, especially for heavy buses and trucks.

It is observed that total energy supply in the carbon neutrality scenario is lower than in the baseline scenario. It is expected to reduce from 2,006 Mtoe in the baseline scenario to 1,953 Mtoe in the carbon neutrality scenario. What constitutes the significant difference between the baseline and carbon neutrality scenarios is the composition of the energy mix. Under the carbon neutrality scenario, renewables and clean fuels form the major share of the energy mix.

Power Generation Mix in ASEAN for the Baseline vs Carbon Neutrality Scenarios

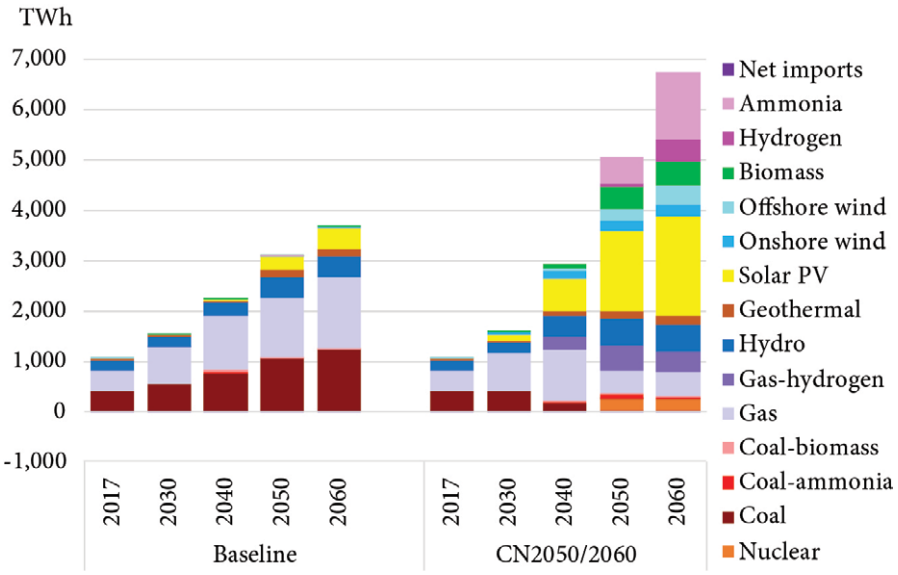
The power generation mix of ASEAN is predicted to double from the baseline to the carbon neutrality scenario in 2060. In the baseline scenario, electricity demand is predicted to be 3,657 TWh by 2060, while in the carbon neutrality scenario, electricity demand is predicted to be 6,720 TWh (Figure 2.5, and Table 2.2). This doubling of demand for electricity comes from the intermittent introduction of large amounts of renewables, solar and wind. In this case, the application of battery storage is critical to save electricity from curtailment and for other uses, such as energy back-up systems or to smooth the load curve of renewables, solar or wind. In another scenario, surplus electricity from wind and solar could be used to produce hydrogen and be deployed in the transportation sector (fuel cell vehicles) and for power generation (co-combustion of hydrogen with natural gas-fired power plants).

Table1: Primary Energy Supply by Energy Sources, Baseline vs Carbon Neutrality Scenarios (Mtoe)

Energy Source	Baseline					CN2050/2060				
	2017	2030	2040	2050	2060	2017	2030	2040	2050	2060
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.4	62.7
Coal	138.8	212.5	279.8	346.8	394.9	138.8	174.3	99.2	72.8	42.8
Natural gas	132.4	317.1	413.2	460.9	526.2	132.4	312.2	453.1	345.2	393.1
Oil	225.7	322.2	460.7	631.9	785.8	225.3	318.9	335.8	368.0	429.3
Hydro	16.2	17.7	22.5	35.6	35.6	16.2	19.6	36.1	53.0	59.4
Geothermal	19.9	19.9	19.9	122.9	126.2	19.9	19.9	79.8	125.4	128.9
Solar	0.5	1.0	2.7	21.6	35.4	0.5	8.6	63.6	187.3	258.7
Wind	0.2	0.2	0.2	0.3	1.2	0.2	5.8	19.2	45.6	70.3
Biomass	82.8	82.9	88.8	94.7	100.2	82.8	82.6	114.9	214.1	226.2
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	50.6	70.9
Ammonia	0.0	0.0	1.2	0.8	0.4	0.0	0.0	17.2	91.6	210.9
Share of imported H2/NH3	0%	0%	0%	0%	0%	0%	0%	1%	9%	14%
Total	**616**	**974**	**1,289**	**1,716**	**2,006**	**616**	**942**	**1,219**	**1,616**	**1,953**

Source: Authors' calculation

Figure 2.5: Power Generation Mix in ASEAN in the Baseline vs the CN2050/60 Scenarios



Source: Authors' calculations

A proper real-time simulation of the power mix is necessary to understand how much battery energy storage will be needed. However, in this study, the rule of thumb is applied for battery energy storage, which ranges from 20-25 per cent of the installed capacity of solar and wind (Figures 2.6 and 2.7).

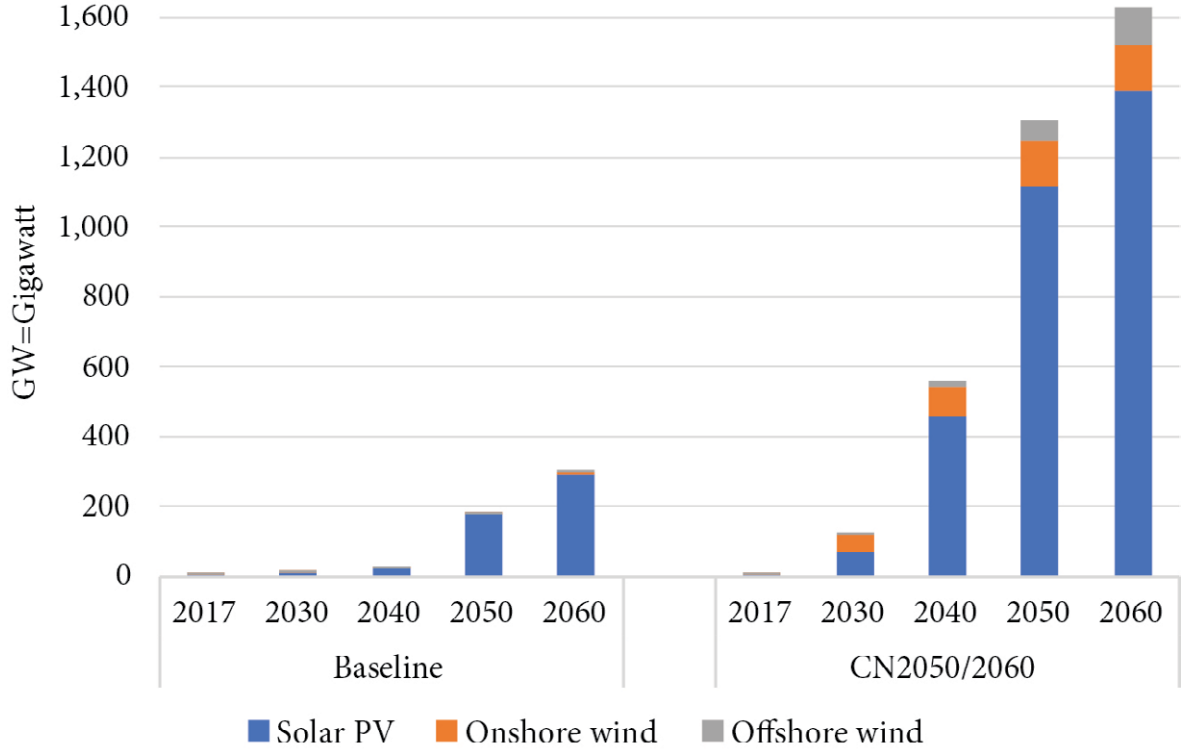
In the carbon neutrality scenario of ASEAN, it is expected that about 1,627 Gigawatt (GW) installed capacity of wind and solar will be realised by 2060. Solar will have the largest installed capacity of 1,385 Gigawatt by 2060, while wind (both onshore and offshore) will be about 331 Gigawatt by 2060.

In fact, the battery energy storage can back up the intermittent electricity production of wind and solar; however, the size of the storage depends on the composition of the energy mix and load curve. In this study, it is estimated that the battery energy storage in ASEAN in the carbon neutrality scenario will be about 1,365 Gigawatt hours (GWh) (Figure 2.7).

The time sequencing for deployment of battery energy storage is consistent with the run-up installed capacity of solar and wind starting from 2040 onwards. In fact, ASEAN could see further large deployment of solar and wind due to their potential resources, but system integration and affordable cost could be obstacles and expand the lead time for the introduction of these resources on a large scale.

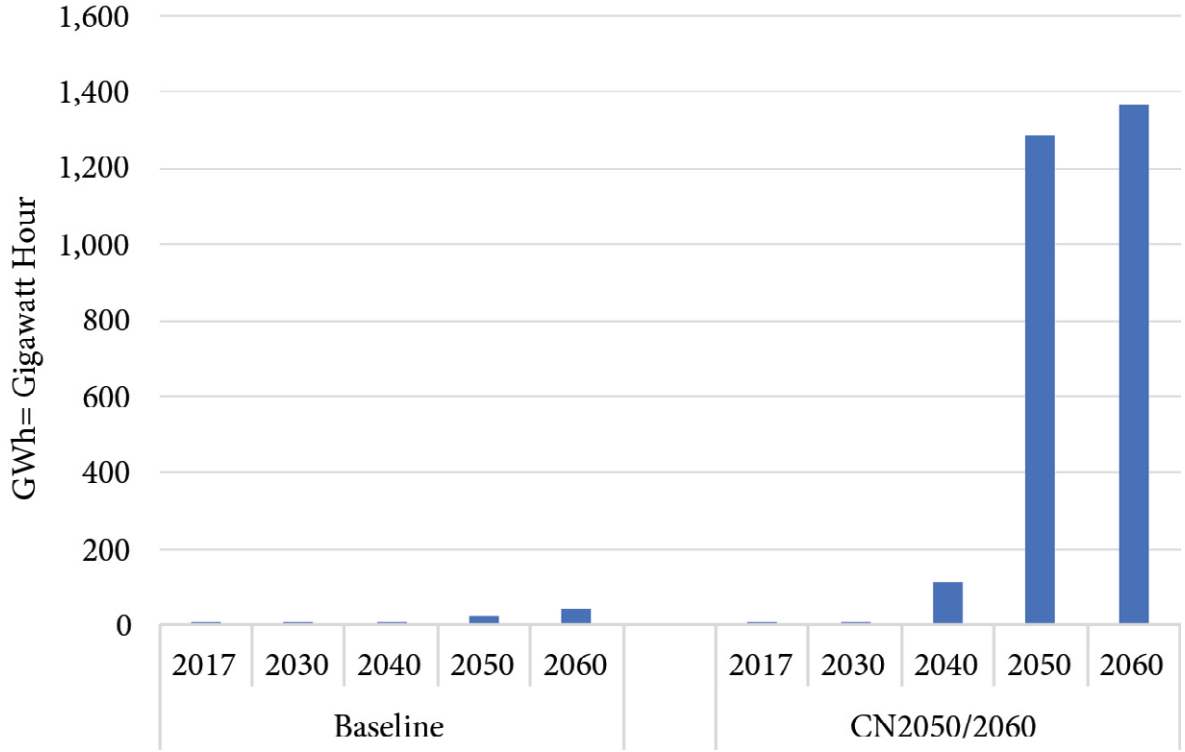
For power generation in the carbon neutrality scenario, all clean technologies and clean fuels could be introduced in time-sequence to reduce overall costs to the power system as it moves towards carbon neutrality by 2050/60 in the ASEAN region.

Figure 2.6 Total Installed Capacity of Solar and Wind for the Baseline vs Carbon Neutrality Scenarios (GW= gigawatt)



Source: Authors' calculations.

Figure 2.7 Total Installed Battery Energy Storage, Baseline vs Carbon Neutrality Scenarios (GWh= Gigawatt hours)



Source: Authors' calculations.

Table 2: Power Generation Mix by Energy Source, Baseline vs Carbon Neutrality Scenarios (TWh)

Energy Source	Baseline					CN2050/2060				
	2017	2030	2040	2050	2060	2017	2030	2040	2050	2060
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	241.9	243.2
Coal	383.7	544.0	757.2	1033.6	1226.9	383.7	383.7	155.4	0.0	5.7
Coal-ammonia	0.0	0.0	24.1	15.9	8.0	0.0	0.0	24.1	100.1	44.3
Coal-biomass	0.0	0.0	48.2	31.9	15.9	0.0	0.0	48.2	31.9	15.9
Gas	437.7	741.1	1079.7	1173.3	1421.0	437.7	767.1	998.0	438.6	459.1
Gas-hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	272.5	495.7	423.7
Hydro	188.0	205.9	262.2	414.5	414.5	188.0	227.4	404.1	531.0	543.4
Geothermal	23.1	23.1	23.1	142.9	146.8	23.1	23.1	92.8	145.9	149.9
Solar PV	5.9	12.2	31.0	251.4	412.3	5.9	99.9	648.9	1591.2	1985.1
Onshore wind	1.9	1.9	1.9	3.5	13.1	1.9	66.5	123.1	211.1	226.6
Offshore wind	0.4	0.4	0.4	0.4	0.4	0.4	0.4	81.0	230.5	401.0
Biomass	0.0	1.4	1.3	1.5	1.2	0.0	0.4	75.0	432.6	454.6
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.5	446.7
Ammonia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	554.4	1335.8
Net imports	-2.0	-2.1	-1.6	-3.5	-3.1	-2.0	-3.1	-3.2	-5.5	-5.7
Total	**1,039**	**1,528**	**2,227**	**3,065**	**3,657**	**1,039**	**1,566**	**2,920**	**5,054**	**6,720**

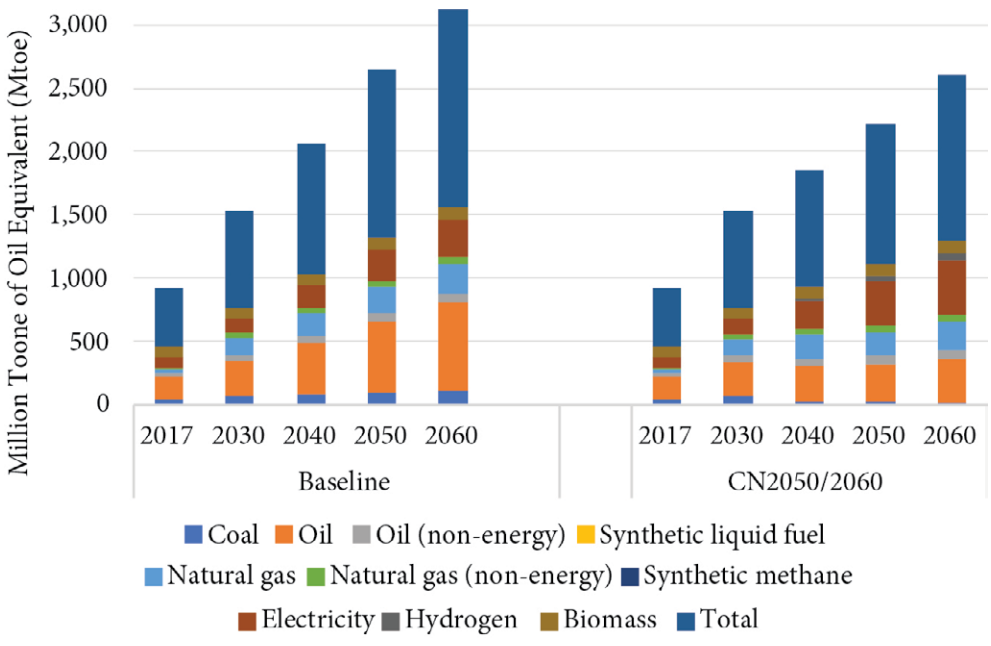
Source: Authors' calculations

Final Energy Consumption in ASEAN for the Baseline vs Carbon Neutrality Scenarios

Amongst the fossil fuels, coal is predicted to reduce largely between the baseline scenario (108 Mtoe in 2060) and the carbon neutrality scenario (4 Mtoe in 2060). Oil is also expected to reduce by half from the baseline (694 Mtoe in 2060) to the carbon neutrality scenarios (348 Mtoe in 2060). There is not much change in natural gas use from the baseline to the carbon neutrality scenario in 2060, as it is an important fuel in energy transition as well as in future use, if combined with negative emission technologies such as Direct Air Capture (DAC).

Electricity consumption in the end-use sector will be the largest fuel in the carbon neutrality scenario and its use is scheduled to grow as follows: 127 Mtoe by 2030; 2017 Mtoe by 2040; 344 Mtoe by 2050; and 431 Mtoe by 2060 (Figure 2.8 and Table 2.3).

Figure 2.8 Total Final Energy Consumption (TFEC) in the Baseline vs CN2050/60 Scenarios (Mtoe)



Source: Authors' calculations

Table2.3 Final Energy Consumption by Energy Sources, Baseline vs Carbon Neutrality Scenarios (Mtoe)

Energy Source	Baseline					CN2050/2060				
	2017	2030	2040	2050	2060	2017	2030	2040	2050	2060
Coal	31.9	70.4	84.5	97.4	108.1	31.9	68.9	23.9	20.1	4.1
Oil	187.8	268.7	394.3	554.1	695.4	187.8	266.0	274.7	297.7	348.5
Oil (non-energy)	30.2	45.7	54.7	64.2	74.7	30.2	45.7	54.7	64.2	74.7
Synthetic liquid fuel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural gas	26.6	139.7	181.8	209.3	229.3	26.6	134.7	201.6	190.6	226.1
Natural gas (non-energy)	16.7	37.4	45.2	52.8	59.9	16.7	37.4	45.2	52.8	59.9
Synthetic methane	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0
Electricity	84.8	124.8	182.0	250.3	298.7	84.8	127.8	216.9	344.0	430.6
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	47.1	55.6
Biomass	82.2	82.5	86.0	92.7	99.1	82.2	82.5	86.0	93.4	100.3
Total	**460.3**	**769.1**	**1,028.6**	**1,320.8**	**1,565.0**	**460.3**	**762.9**	**925.9**	**1,110.0**	**1,299.8**

Source: Authors' calculations

The shift to a higher use of electricity is due to the introduction of electric vehicles and the increasing use of electricity in the residential and commercial sectors. Some heavy buses and trucks will continue to use oil and hydrogen. Biomass and natural gas are expected to serve some end-use sectors such as industries for heating purposes.

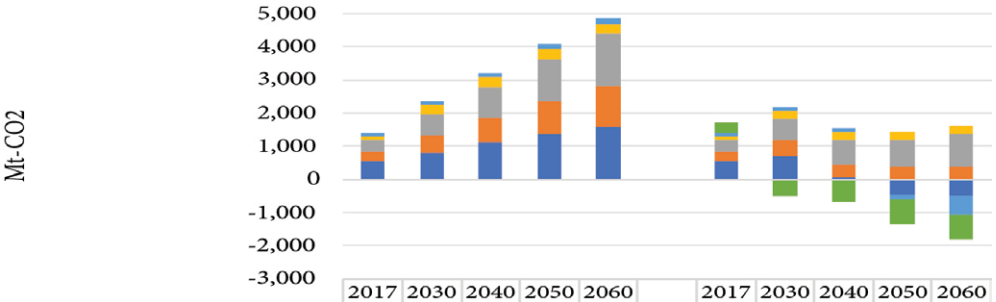
The decarbonisation in the end-use sector will need to focus on the increased use of electricity in the carbon neutrality scenario. In fact, if possible, electricity use could be accelerated further, and the decarbonisation of power sources will need to be done through appropriate technologies and clean energy sources such as biomass, hydropower, geothermal, wind, solar, and other clean fuels such as hydrogen and ammonia.

Emissions by Sectors in ASEAN for Baseline vs Carbon Neutrality Scenarios

Decarbonisation in every sector will be necessary to achieve carbon neutrality by 2060 in the ASEAN context. In the baseline scenario, ASEAN's total emission in terms of carbon dioxide (CO_2) is expected to shoot up to almost 5,000 Mt-CO_2 by 2060. All sectors such as transport, industries, and others (such as commercial and residential sectors) will contribute emissions largely toward 2060. However, in the carbon neutrality scenario, electricity consumption (mainly solar, wind, biomass, hydropower, geothermal), and the introduction of Direct Air Capture with Carbon Storage (DACCS) into the energy system are expected to decarbonise emissions. Further, the natural carbon off-set through the Lan Use, Land Use Change, and Forestry (LULUCF) will also help to decarbonise emission in ASEAN.

Carbon capture, including direct air capture with carbon storage (DACCS), plays a vital role in helping ASEAN cut emissions by about 565 Mt-CO2 by 2060. The introduction of renewables helps decarbonise emissions by about 503 Mt-CO2. Amongst the renewables, solar will be the largest renewable in the systems mix for ASEAN, thus its role is critical to help ASEAN meet the carbon neutrality target by 2060. Emissions in transport and industry remain, although they are expected to reduce largely in these two sectors in the carbon neutrality scenario compared with the baseline scenario.

Figure 2.9 Emissions in ASEAN by Sectors (Mt-CO_2)



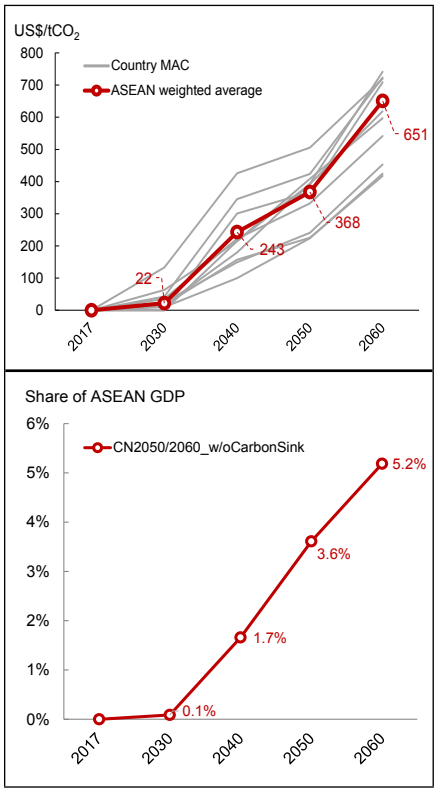
	Baseline					CN2050/2060				
	2017	2030	2040	2050	2060	2017	2030	2040	2050	2060
LULUCF						314.1	-519.9	-670.5	-732.8	-732.8
Other including DACCS	98.3	104.1	129.5	149.0	169.4	97.0	91.0	84.5	-148.4	-564.5
Other end-use	138.1	258.8	298.9	312.1	288.0	138.1	243.0	263.8	255.5	236.8
Transport	349.0	640.0	912.4	1266.2	1579.9	349.0	640.0	725.8	790.7	987.0
Industry	266.1	527.2	755.4	996.1	1232.0	266.1	515.1	411.7	386.8	385.7
Electricity	558.4	812.6	1119.6	1350.5	1575.9	558.4	677.7	43.1	-469.2	-502.6

Source: Authors' calculations

Marginal Abatement Cost of Decarbonisation for ASEAN

The marginal CO2 abatement cost (MAC) is the cost required for the entire energy system to marginally reduce 1 ton of CO2, as yielded by the model simulation (see Enkvist et al. [2007]). Figure 2.9 illustrates the weighted average of the MAC in ASEAN. In CN2050/2060_w/o CarbonSink (Carbon Neutrality Scenario without Carbon Sink), the MAC rises sharply from 2050 to US$651/tCO2 in 2060, implying a major economic challenge to decarbonisation. The increase in the MAC is derived from the more stringent constraints on CO2 emissions between 2050 and 2060. The additional annual cost in CN2050/2060_w/o Carbon Sink compared with the baseline scenario is estimated at about 5.2 per cent (US$0.83 trillion) of ASEAN's GDP in 2060. In this regard, it is very important to reduce the MAC in order for ASEAN to afford the decarbonisation objective.

Figure 2.9. Marginal Carbon Dioxide Abatement Cost (Top), Additional Annual Cost (Bottom) (CN2050/2060_w/o CarbonSink)

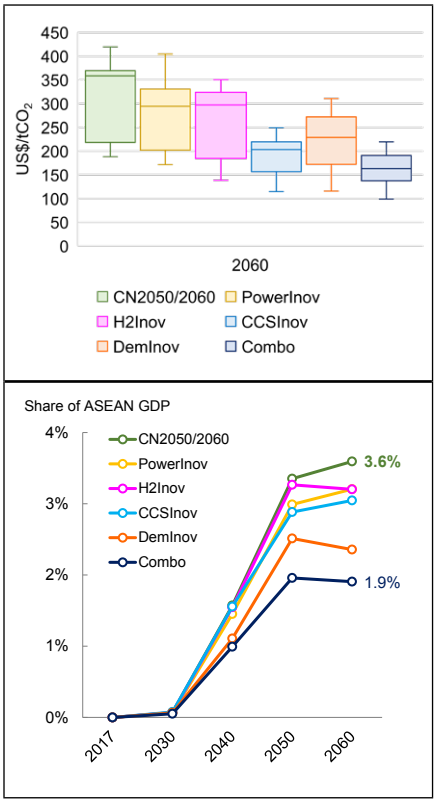


CO2 = carbon dioxide, MAC = marginal carbon dioxide abatement cost, tCO2 = tonne of carbon dioxide, GDP = gross domestic product

Source: Author's calculations

The paper suggest five technological innovations to bring down the overall cost of decarbonisation in ASEAN: (1) ASEAN needs to achieve power grid connectivity and have a fully functional power market; (2) ASEAN needs to have a large cost reduction in battery energy storage and EVs; (3) ASEAN needs to achieve the large-scale deployment of CCUS including Direct Air Capture with a substantial cost reduction; (4) ASEAN needs to achieve other cost reductions in technologies such as coal gasification and methane reforming and electrolysers; (5) ASEAN needs to achieve cost reductions in its advanced end-use technologies. If all these five innovations are achieved, the overall cost of decarbonisation is expected to be less than US$200/tCO2 by 2060 (Figure 2.10).

Figure 2.10. Marginal Abatement Cost (Top), Additional Annual Cost (Bottom)



Source: Author's calculations

Discussion Issues

The above modelling results of the energy outlook for ASEAN to meet carbon neutrality implies the need for each technology innovation to bring down the cost of decarbonisation, including regional and international collaborations to ensure that appropriate technologies deployed are consistent with economic development in Asia, particularly on the affordability front. We have raised key issues on low emission technologies, such as hydrogen development, CCUS, smart grids, electric vehicles, carbon markets, critical minerals, and regional cooperation such as Asia Zero Emission (AZEC), for discussion, that can assist Asian countries design their technology and institutional arrangements to help transform their energy systems toward cleaner systems by 2050.

Hydrogen Development in ASEAN

Hydrogen gas continues to be extensively used in industrial processes like oil refining, chemicals, fertilisers, and steel production (IEA, 2019). Whilst it is expected to power fuel-cell electric vehicles (FCEVs) in the future in some countries, economic considerations and infrastructure limitations have constrained its use in transportation to date. This is expected to change.

On the supply side, competitively priced hydrogen continues to be sourced primarily from steam reforming of natural gas ('grey hydrogen') or coal gasification. Whilst hydrogen from water electrolysis ('green hydrogen') has the potential to compete with transport fuels, especially when petroleum prices are high, it is much more expensive than grey hydrogen used for industry (Ball and Weeda, 2015). However, recent research and pilot projects lead to the expectation that technologies like natural gas reforming combined with carbon capture ('blue hydrogen') and electrolysis of water using renewable-based electricity are gaining prominence and could dominate hydrogen production in the future (APERC, 2018; IEA, 2021).

On the demand side, industry will continue to be the largest user of hydrogen, far exceeding its use in transport. Whilst the demand for battery electric vehicles (BEVs) including plug-in hybrid vehicles has been rising in recent years, due to increased subsidies and expanding charging station networks, the transport and logistics sectors are yet to settle into any dominant technology. Indeed, recent findings indicate a future market split between BEVs dominating the light passenger vehicle market for shorter-distance travel, and FCEVs used in heavier, long- distance utility vehicles such as trucks and rail (Milton, 2020). Furthermore, the potential of hydrogen gas as a future energy carrier is still being developed.

Given the complex set of factors affecting demand, supply, storage, and transport of hydrogen, the search for an optimal hydrogen development strategy requires an analysis of not only technological and economic variables but also a country's geography, energy demand, and supply situation and, equally importantly, its institutional setup. Only by understanding a country's geography, demographic, and institutional history and the technological and economic determinants of hydrogen demand, supply, storage, and transport can an optimal hydrogen development strategy be formulated.

The main issue is then how to contribute to the optimal hydrogen market development strategy for the ASEAN region. First, the ASEAN region had a population of 660 million and a combined gross domestic product (GDP) of more than USD3.0 trillion in 2020 (ASEAN, 2021). Second, the region's refinery, chemical, and steel sector output and demand for passenger and logistics transportation are concentrated in Singapore, Thailand, Indonesia, Malaysia, and Vietnam, five countries that make up the region's largest industrial output and consumption market. Third, ASEAN harbours some of the world's largest natural gas reserves and resources (IEA, 2021). Fourth, the existing natural gas pipeline networks in Malaysia, Indonesia, Thailand–Myanmar, and Vietnam offer the potential for a future regional network of gas transport pipelines, the trans-ASEAN natural gas pipeline network, which can be crucial for the region's hydrogen market development (ACE, 2022). Fifth, whilst the hydrogen-consuming industries and the automobile production and supply chains in Thailand and Indonesia dominate the region, they are not over-developed yet and have the potential for significant and rapid growth into the future. The proportion of renewable energy-based electricity generation is small, and ASEAN aims to grow its renewable energy capacity to 23 per cent of primary energy consumption by 2025 (Hamdi, 2020). Thus, the region still holds potential for future adaptation and transformation, to be guided by the right future development strategy and policies for its energy sector, including hydrogen.

In line with the Seventh Sustainable Development Goal of the United Nations, ASEAN and East Asian Summit countries need to seriously promote the use of renewable sources, energy efficiency, and energy transition measures to cleaner fuels. The use of new energy technologies such as carbon capture usage and storage (CCUS) or carbon recycling and hydrogen should also be incorporated along with the adoption of clean technologies. Hydrogen technology should play a key role as an alternative to fossil fuels and can be applied across sectors, i.e., the industry sector in the short and medium term, and the future power generation and transportation sectors in the long term.

Electric Vehicles in ASEAN

Electric vehicles are seen as beneficial from different perspectives among ASEAN member states. Whilst there are still so many issues to discuss, these vehicles are increasingly believed to be one of the silver bullets to remedy many issues in ASEAN, including energy security, climate change, environmental problems, as well as the economic downturn.

High purchase prices, especially for private vehicles such as electric cars and electric motorbikes, are currently among the issues that hinder private electric vehicle penetration in the region. Therefore, since the end of the last decade, several ASEAN governments have put in place not only various incentives to reduce prices for consumers, but also various fiscal and non-fiscal measures and regulations to decrease their total operational costs.

Electric vehicles surely can help ASEAN countries enhance energy security, save on energy import bills, mitigate climate change, and improve urban air quality. Massive electric vehicle deployment, however, may have negative side-effects. Among these are the additional electricity demand that will be met mainly with fossil-fuel-based power, the inefficient and ineffective use of a country's budget (in term of subsidies and incentives), and the negative ripple effects of the electric vehicle industry penetration on production values and employment in the country.

To avoid and minimise those possible negative effects, the strategy would, at the very least, needs to touch on three main energy and economic policy aspects:

a. Decarbonise Power Generation: If the increase in power demand accompanying the spread of electric vehicles is covered by thermal power such as coal-fired sources, there is little effect on CO2 reduction. ASEAN countries will tend to be more dependent on thermal power generation, which involves large-scale power generation facilities, as the demand for electricity is expected to increase rapidly for residential, commercial, and industrial use. Especially in Indonesia, where coal-fired power accounts for more than 50 per cent of the power generation mix, substantial CO2 reduction cannot be expected via BEV penetration. It is important to decarbonise power supply along with promoting the penetration of electric vehicles. However, there is no need to give up using coal, which is relatively inexpensive and abundant in the region; economies should introduce more efficient coal-fired power generation facilities. Meanwhile, one of the options is to promote hybrid electric vehicles, which can reduce CO2 emissions without depending on the power supply mix, until it becomes clean.

b. Consider the Costs of Penetration: Currently, the prices of electric vehicles are high, and the difference from the internal combustion engine vehicles should be regarded as an additional cost. In general, it is unlikely that individual consumers will bear this cost; it requires economic incentives such as subsidies and tax cuts. Although battery costs, a major factor of the electric vehicle, has been falling, electric vehicles are still far from popular without subsidies. In the current situation, promoting vehicle electrification would require substantial subsidies. Battery costs are expected to continue to fall in the future, but the outlook, including international mineral prices, is still uncertain. If the cost does not drop as expected, more subsidies would be necessary for promoting electric vehicles. This should be done carefully, balancing

it against the fiscal situation. In addition, fuel price policy would be important for the spread of electric vehicles. There is little incentive for consumers to purchase more fuel-efficient electric vehicles if fuel prices are low. Therefore, it is necessary to provide incentives through subsidies. Conversely, if the fuel price is relatively high, fuel cost savings from the use of electric vehicles would increase, so the initial electric vehicle cost can be recovered earlier, and subsidies can be reduced. To promote the use of electric vehicles, it is necessary to consider the consistency of various policies.

c. Pay Attention to Ripple Effects from Electric Vehicles: It is necessary to pay attention to other economic activities affected by the penetration of electric vehicles. The production of full battery electric vehicles (BEV) with a small number of material parts might reduce automotive industry employment, compared with the production of internal combustion engine (ICEVs) vehicles or hybrid electric vehicles (HEVs). Furthermore, as electric vehicles become more widespread, the negative economic ripple effects increase through the petroleum industry, due to decreases in fuel demand. However, electric vehicle penetration may create additional production and employment in the whole economy, if the savings in daily fuel expenditure can be diverted into expenditure on other goods and services. In general, the service industries have higher employment intensities (number of employees required per production value) than the fuel supply industry. Especially in Indonesia and Vietnam, where motorcycles are popular, promoting e-motorcycles may stimulate job creation in the service industries. On the other hand, for passenger light duty vehicles, the employment-creation effects could be small or even negative, because other consumption is sacrificed to purchase the expensive electric vehicles.

Grids and Mini-Grid Development in ASEAN

We are now in a period where countries and companies are facing a volatile, uncertain, and rapidly evolving global energy landscape. Meeting the growing demand for electricity while pursuing greenhouse gas (GHG) emission reductions in ASEAN will require huge investments in power generation capacity from decarbonisation technologies such as renewable energy (RE) and power system expansion. To address these challenges, it is necessary to implement various mechanisms and technologies; from a grid perspective, we believe that one of the keys is the development of multilateral power trading in ASEAN, known as the ASEAN Power Grid (APG). Multilateral power trading is about optimising resources on a regional basis, rather than a national basis, to meet electricity demand across the region at the lowest possible cost. Some key points on the potential benefits of multilateral power trading are:

a. More efficient use of the region's energy resources, leading to lower overall production costs in the APG, as optimal investments can be made at the regional level rather than sub-optimal solutions in each country.

b. Help utilities in the region to balance their excess supply and demand, improve access to energy services and reduce the cost of developing energy infrastructure.

c. Accelerate the development and integration of renewable energy capacity into the regional grid.

d. Reduce the need for investment in power reserves to meet peak demand, thereby reducing operating costs, while achieving more reliable supply and reducing system losses.

There have been significant, albeit slow, developments within ASEAN to increase regional trade based on bilateral agreements and to use existing infrastructure to move electricity throughout the sub-region. However, there is still a long way to go before a fully-fledged ASEAN regional electricity market is established. One of the reasons for the slow progress is the variety of power sector structures and markets across ASEAN, which creates problems and barriers at all levels of cooperation. To address this issue, there is a need to accelerate close discussions among ASEAN-related sectoral energy bodies to establish a regional regulatory framework and technical standards, including institutional arrangements with clearly defined roles, responsibilities, and coordination mechanisms (including regional institutions), a comprehensive vision for decarbonisation that highlights the multiple benefits of multilateral power trading, and an identification of minimum technical requirements.

While aiming to develop an efficient power supply system between national grids by promoting multilateral power trading, it should be noted that there are still areas with no or low electrification in the islands and remote areas of the ASEAN region. In such areas, it is often unprofitable to connect to a large grid such as a national grid due to the cost of installing mountain and undersea transmission lines. As a result, small-scale diesel generation systems are generally popular, but diesel generation is also expensive and has a high environmental impact. Therefore, the introduction of renewable energy is expected, and when the cost of batteries becomes affordable, a combined battery/renewable energy system is expected to complement the intermittency of renewable energy, thereby reducing reliance on diesel generation. In a future phase, replacing existing diesel generators with power generation systems fuelled by liquefied natural gas (LNG), biofuels, blue or green hydrogen would also be an effective approach. As they have a lower environmental impact than diesel generation, it is expected that their introduction will be promoted in areas where it is feasible, considering profitability.

The rise of emerging technologies and the need to adopt them should be emphasised. The shift to cleaner energy requires smarter grids to manage the variability of renewables and integrate distributed energy resources. For example, smart grid technologies such as real-time monitoring, data analytics and advanced control systems will improve grid stability and enable efficient integration of variable renewable energy (RE) sources such as solar and wind.

Artificial intelligence is also playing a crucial role in this evolution, enabling smart grids with predictive analytics for demand forecasting, fault detection and optimised grid operation. In addition, energy management systems, combined with batteries and other energy storage solutions, are becoming essential to balance supply and demand and improve grid resilience. This confluence of innovative technologies can be an enabler, paving the way for a more decentralised, intelligent, and sustainable energy future.

Carbon Capture Utilisation and Storage (CCUS) Development in ASEAN

In ASEAN and East Asia, fossil fuel still plays a big role in the energy mix. In power generation in the Business as Usual scenario in the ERIA EAS Energy Outlook, coal and natural gas are predicted to be the dominant fuels, contributing 39.5 per cent for coal and 20.8 per cent for gas in 2050. Even under the carbon neutrality scenario, the combined coal and gas power generation will remain over 40 per cent of the power mix, but with CCS. This high share of coal and gas in the energy mix by 2050 could be attributed to the fact that Southeast Asia has very relatively new coal-fired power plants, which are on average 11 years old. India and China also share a similar situation, in which the average age of their coal-fired power plants is about 13 years. For Indonesia, 58 per cent of its coal-fired power plants have a relatively young age of about 10 years or less, and 22 per cent of them have an average age between 10-20 years. With such high dependency on fossil fuel, the region of ASEAN and East Asia, will rely on the deployment of CCS/CCUS.

ERIA as well as other prominent research think tanks share the view that CCS/CCUS will become an important part of the pathways for all countries to achieve net-zero emission. CCS/CCUS is not an optional technology but a necessity for countries that need to rejuvenate their systems from fossil-based dependency to one of clean, renewable energy. ERIA is the secretariate of the Asia CCUS Network (ACN), and has the vision to contribute to the decarbonisation of the region through collaboration and cooperation on the development and deployment of CCUS in the Asia region. The three main missions of the ACN include: (1) Promoting knowledge-sharing through holding an annual forum, conferences, and workshops; (2) Conducting research studies and surveys on technical, economic, and legal standards, especially common rules for CCUS in the EAS region; and (3) Holding capacity-building training workshops to bridge the knowledge gap on CCUS. The ACN also supports Southeast Asia countries in identifying pilot CCUS projects till 2025 and is hoping that the CCUS deployment and commercialisation can be realised by 2030. Necessary studies have been identified and studied under ACN's activities in collaboration with knowledge partners.

In 2023, CAN commissioned four studies by the Global CCS Institute (GCCSI) and one study by a local research institute called the National Research and Innovation Agency (BRIN-Bandan Reset Dan Inovasi Nasional). Collectively, these studies assessed the role of Carbon Capture and Storage (CCS) in Southeast Asia to support the achievement of net-zero emissions targets; reviewed the policy and legal frameworks necessary to enable CCS to play that role; examined the need for collaboration between Southeast Asian nations including institutional frameworks; and discussed options to facilitate the financing of CCS in the region.

The Establishment of Asia CCS/CCUS Value Chain as a Collective Framework in the Asia- Pacific Region.

The five studies were: (a) Geological Storage Potential of CO2 in Southeast Asia; (b) Establishment of an Asian CCS/CCUS Value Chain as a Collective Framework in the Asia-Pacific Region; (c) Legal and Policy Framework for Deployment of CCUS in the Asia Region, focussed on ASEAN; (d) Study on a Financial Framework for Deployment of CCUS in the Asian Region, including ASEAN; and (e) The Establishment of Basin-scale CO2 Storage in Indonesia. These studies had the following findings:

a. ***Geological Storage Potential of CO2 in Southeast Asia:*** Indonesia, Malaysia, and Thailand are the most advanced in this area, with suitable and highly suitable offshore and onshore basins, gigatonne storage resources, and active CCS facilities. However, only Indonesia has a national regulatory framework to enable CCS. Brunei has a suitable offshore basin with gigatonne storage resources, but storage development and CCS deployment have not commenced, and the nation lacks a dedicated regulatory environment for CO2 storage exploration. Vietnam and the Philippines host potential storage basins, but there is no storage development in key areas near strategic industrial emission clusters. Laos, Myanmar, and Cambodia were not assessed due to a lack of data, and the storage potential of those countries has never been reviewed. Singapore does not have a storage basin within its borders. An estimated 200 gigatonnes (Gt) of storage resources confirm that the six Southeast Asian countries assessed for storage have sufficient resources to enable CCS in the region. Of the estimated storage resources, around 98 per cent is in saline formations. This estimate is remarkable as only nine saline formations in nine basins were reviewed. However, this estimate carries a large degree of uncertainty since the storage resources for saline formations are for theoretical storage, whereas the hydrocarbon field storage estimate uses field data. In Indonesia alone, the storage resources were estimated at up to 69 Gt in the selected saline aquifers. Indonesia has significant potential of CO2 storage in both deep saline aquifers and hydrocarbon fields, well-suited to be part of a regional CCUS hub.

b. ***Establishment of an Asian CCS/CCUS Value Chain as a Collective Framework in the Asia-Pacific Region:*** The development of CCS hubs and clusters, bringing together a number of different CO2 emissions sources and/or storage sites in a connected network, offers participants several advantages over vertically integrated CCS projects. Benefits include reduced costs and risk, enabling more cost-effective transport and storage from small-volume sources, and

maintaining investment and jobs in high-emitting industrial regions. The large-scale deployment of CCS in the region will require coordinated effort by countries in the Asia-Pacific region to develop frameworks and platforms for successful and timely project delivery. Integrated upstream policy and robust institutional frameworks will be key to underpinning regional project implementation. In addition, coordinated institutional frameworks, including coherent decarbonisation strategies, project approval and procurement strategies, and investment plans, will reduce project risk and enable capital investment. The establishment of a centralised body, such as a CCS Value Chain Centre (VCC), to coordinate and administer regional efforts, could accelerate CCS deployment in the region. The VCC, as a coordinating body, could review and make recommendations on how existing national policies, legislation, and regulatory frameworks could be adapted to accommodate and enable regional CCS activities, including identification of near- and mid-term activities to support national regulators and policymakers to align national CCS policies to enable collaboration in the region. In collaboration with national policymakers and regulators, the VCC could implement the Asia CCS Roadmap currently under development by the Asia CCUS Network. As a regional body, the VCC could act as an advisory body, tasked with monitoring national CCS legislation and regulation development in the region, in line with the Asia CCS Roadmap and make recommendations to regulators as appropriate. In addition, it could develop Asia CCS Regulatory Principles guidelines, to provide guidance on the approach to developing CCS-specific regulation for the region. The VCC could also play a role in the standardisation of CCS, based on international standards and global best practices and through collaboration with other associations in the climate change space.

c. ***Legal and Policy Framework for Deployment of CCUS in the Asia Region, focussed on ASEAN:*** The approach to regulating CCS activities is an important preliminary consideration for governments seeking to develop a CCS-specific legal framework. Regulators and policymakers may decide to expand the focus of regulatory frameworks to include the broad suite of applications that constitute CCS technologies across the industrial and power sectors. Within the region, the experiences of the governments of Indonesia and Thailand offer tangible examples of the processes involved in developing regulatory frameworks for CCS. Both countries have undertaken collaborative, iterative processes, that have engaged a diverse group of stakeholders across various levels of government. There is a risk of delay or a disconnect within the regulatory process, where these stakeholders take time to familiarise themselves with the technology and new regimes. Activities involving the transport of CO2 across international maritime zones and marine areas have implications under a broad range of international agreements, including those relating to the pollution of the marine environment, the safety of maritime transport, the transport of dangerous goods, and the carriage of compressed gases. The London Protocol removed barriers to the technology's deployment and provided a basis under the Protocol's mechanisms for the regulation of CO2 sequestration in sub-seabed geological formations. Recent amendments to this agreement offer an important pathway for facilitating the transboundary transportation of CO2 for geological storage. For many nations within the ASEAN region, existing oil and gas operations will provide a good analogue for the various regimes that may also apply to CCS activities. Compliance with CCS-specific legal and regulatory regimes is an important feature of many carbon-crediting schemes that offer support for CCS activities. The detailed reporting and accounting of stored CO2, as part of geological storage operations, is an important aspect of ensuring compliance with CCS-specific legislation and for ensuring the wider integrity of CCS operations. The 2006 IPCC Guidelines offer an important indication as to how national accounting schemes may manage the reporting of transboundary CCS operations. Legal and regulatory issues will arise in the context of transboundary project models, which will trigger obligations under international, regional, and national regimes. The absence of clear legal and regulatory frameworks for these operations, within international and national law, suggests this issue be addressed in the pre-injection phase and prior to operation. The responsible and safe closure of a CO2 storage site is the focus of regulatory requirements during the closure phase. Legislation will require project operators to seek authorisation to close a CO2 storage site upon the fulfilment of prescribed criteria and may include well decommissioning and plugging requirements. Regulatory obligations during the post-closure phase will include long-term monitoring and responsible site care, to ensure the safety and security of CO2 storage sites.

d. ***Study on a Financial Framework for the Deployment of CCUS in the Asian Region, including ASEAN:*** CCS and other climate-mitigating technologies deliver a public good. Thus, any consideration of the financing of CCS, or any climate mitigation technology, necessarily requires a consideration of public policy to ensure that investment is sufficient to meet the needs of society. All ASEAN member states have made commitments to achieve net-zero emissions by 2050 or 2060. Having set the achievement of net-zero emissions as one of many priorities or commitments, governments need to find the lowest cost solution. Assuming the central scenario modelled in this study (Accelerated Storage Scenario), 2Gtpa CO2 must be captured in Southeast Asia by 2060 to support net-zero commitments. This will require almost USD 880 billion to be invested in CCS between now and 2065 across Southeast Asia, peaking at over USD40 billion per

year, on average, in the 2040s. However, this investment will reduce the region's overall cost of meeting its net-zero commitments by more than USD 20 trillion over the same period. Mobilising this quantum of capital for CCS will require both public and private finance. The private sector has enormous financial resources, human capital, and capabilities necessary for the development and operation of CCS projects. However, the private sector can only invest where there is an appropriate risk-weighted return on that investment. Current experience from around the world demonstrates that significant public finance is necessary to leverage the private finance required to accelerate CCS investment. Policies are required that align private investment incentives with public good investment incentives. This can be done through any combination of: increasing the cost of emitting CO2 (e.g., carbon taxes or emissions trading); command and control mechanisms (e.g., or prohibition or mandates through regulation); reducing the cost to private sector investors of CCS (e.g., through capital grants or concessional finance); and, increasing the revenue created through CCS (e.g., through payments per tonne of CO2 stored or operational subsidies). ASEAN countries' economic and political structures differs significantly from the US and the EU. ASEAN member states, perhaps apart from Singapore, have far fewer resources available to allocate to climate change mitigation. Potential sources of external finance for CCS include multilateral development banks (the World Bank Group, Asian Development Bank), international climate-related funds and foreign direct investment from the governments of developed countries with climate-related aid or investments in the region. ASEAN members benefit from the considerable resources, experience and expertise of national and international oil companies that are active in the region. This industry has some of the lowest cost opportunities for very significant emissions reductions in their production value chain. For example, reservoir CO2 which is currently vented to atmosphere, may instead be compressed ready for transport and geological storage after minimal clean up (e.g., dehydration). In some cases, existing infrastructure, such as pipelines or offshore platforms, may be utilised or re-tasked to support CCS operations, very significantly reducing the necessary capital investment. These first projects, being developed in the 2020s, are likely to be the lowest cost opportunities for CCS projects and may also be the anchor projects for the establishment of CCS networks that will serve the broader needs of industry in the region seeking a carbon management solution. In the absence of a material carbon price, these first CCS projects in the region will likely require capital investment support to reach Final Investment Decision (FID).

Critical Minerals Supply Chain

To meet the net-zero emission scenario, critical minerals demand is estimated to grow from 7.1 Mt in 2020 to 42.3 Mt in 2050, representing an about six-fold increase in demand from 2020 to 2050. This jump in demand creating potential energy security in sourcing supply chain, while China is currently the major player dominating the global supply chain (IEA, 2022).

A current global rare earth player, China is at the top in terms of mine production and reserves of rare earth elements (REE), with 44 million tons in reserves (representing about 35 per cent of global reserve) and 140,000 tons of annual mine-production. The US has just re-opened mining in 2018 and gradually increased production to 38,000 tons in 2021, with 1.5 million tons in reserves. Australia is ranked third with an annual production of 17,000 tons, and about 4.1 Mt in reserves. While Vietnam and Brazil have the second and third-largest reserves of rare earth metals with 22 million tons and 21 million tons, respectively, their mine production is among the lowest of all the countries, at only 1,000 tons per year each (USGS, 2022).

Regarding current global supply chains, China has a strong foothold in supply, accounting for 80-85 per cent of global supply. It is the dominant global supplier; the US relies on China for about 80 per cent of its rare earth imports. The security of supply has been an issue, underlining the need to develop new sources of rare earths in North America and elsewhere, such as Australia, Vietnam, and Indonesia. In the rare earth industry, China is the global player with a dominant role and the ability to control global production and availability of these valuable metals. Before the 1980s it was the US that held the majority stake in the REE market. That changed with production growth abroad, mounting environmental pressures at home, and relatively cheaper labour shifting production overseas.

China's dominant position in this market has sparked supply concerns. It could use REE as a political leverage; it demonstrated its willingness to use its REE monopoly as a diplomatic tool in 2010 when it severely limited REE exports to Japan during arguments over disputed territory. The incident heralded to the world that China had begun to see its REE monopoly as a strategic tool in foreign policy. China also threatened to cut supply of REE to the US over the trade-war a few years ago. There are few players in the global supply chain for REE. Thus, recognising the importance of security of the supply chain of REE, the US has made several attempts to re-emerge as a major player in the REE supply chain. Under the current Biden administration, these efforts are receiving renewed focus, with massive investments planned in climate change technology, and a hard line being taken on geopolitical rivalries and the national security threat posed by China.

Australia, Indonesia, Vietnam, and India could be the new source for supply chains in the near future. Amongst the potential suppliers, Australia's resource sector is well positioned to develop a cost-competitive domestic processing sector that meets environmental, social, and governance considerations. This includes high labour and environmental standards, reliability as a supplier, and technical expertise to drive production efficiencies. Its high standards and strong resource record give Australia an important point of difference in the global critical minerals market. However, Australia, Indonesia and Vietnam will

need to address barriers that miners and processors face – including skills and expertise to meet the technical challenges of production, processing, and refining – and to manage the sustainability of the critical minerals industry.

It is important for governments (of Australia, Indonesia, Vietnam, and India) to investigate issues that can help de-risk projects at all stages of development to overcome barriers and attract private investment. This can be done through project facilitation, providing technical support, and making strategic investments to scale-up processing and lock-in finance and offtake for production. There is a need to invest in R&D for this sector to grow as China did for decades with its investment in R&D. Finally, ERIA will conduct studies on the critical mineral supply chain; it aims to provide a stocking analysis of the critical mineral supply chain from the production, processing, refining, and economic impacts of being emerging players in the critical minerals in the region of ASEAN and beyond. It also aims to understand how countries like Indonesia, Vietnam, and Australia can forge stronger relationships with key countries (beside China) to ensure the security of supplies of REE. The key external partners such as the US, Japan, the Republic of Korea, the UK, India and the EU members are key to securing the off-take of critical minerals in regional supply chains.

The Carbon Market in ASEAN and Beyond

The problem of climate change involves a fundamental failure of markets: those who damage others by emitting greenhouse gases generally do not pay (Stern, 2007). The Organization for Economic Cooperation and Development (OECD) introduced the Polluter Pays Principle (PPP) in 1972, where the polluter was made responsible for the pollution. The 'polluter pays' principle is the commonly accepted practice, that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment (LSE, 2022).

Carbon prices or carbon taxes are generally a price-based mechanism which truly reflects the polluter pays principle, as it imposes a charge on the emitters of greenhouse gases. Carbon prices should truly reflect potential social costs caused by future climate change. They are expected to force emitters to take on, or internalise, the cost of pollution through technology innovation or investment into carbon off-setting projects. Alternatively, the carbon price can be calibrated to achieve a certain emissions target which is known as 'a quota-based system or cap-and-trade' in which the quota for emission is moved to zero by a specific date, such as net zero by 2050. This is commonly referred to as a 'target-consistent' approach. Under both approaches, a financial incentive is introduced for a polluting entity (such as a factory) to reduce its emissions.

To get carbon markets to function effectively, many economists believed that a carbon price should be global and uniform across countries and sectors, so that polluters do not simply move operations to 'pollution haven countries,' where a lack of environmental regulation enables them to continue to pollute without restriction. Among East Asia countries, Japan implemented a carbon taxation in 2021 of 289 Japanese yen (2.65 US dollars) per ton of CO2 (Ministry of Environment, 2019), becoming the first Asian country to implement a carbon tax (Gokhale, 2021). This carbon taxation applies to fossil fuels such as petroleum, natural gas, and coal, and is levied in addition to existing taxes on petroleum and coal. The revenue generated from the carbon tax is used to fund renewable energy projects and enhance energy-saving measures (Gokhale, 2021).

In Southeast Asia, Singapore, the most advanced economy in ASEAN, implemented a carbon tax in 2019 and established a state-owned exchange CIX Exchange Place (Climate Impact X, a website for carbon trading [https://www.climateimpactx.com]) to drive carbon credit trading initiatives. In March 2023, Malaysia also followed suit, with the establishment of the Bursa Carbon Exchange (BCX) and the launch of an auction platform for carbon credits, to prove the viability of carbon credit trading.

In Indonesia, Presidential Regulation (Perpres) 98/2021 on Carbon Economic Value, or Nilai Ekonomi Karbon (NEK), seen as a direct response to the Article 6 Paris Agreement, paves the way for parties to trade carbon in order to lower emissions. Some instruments offered under the regulation are carbon trading, results-based payment, and carbon tax, which was twice delayed and is expected to be launched in 2025. Among all the instruments (carbon trading, result-based payment, carbon tax, etc.), carbon trading is a mature instrument with a cap-and-trade mechanism that enables institutions to claim high-intensive emission by buying credits from other activities that provide carbon stocks. To strengthen the implementation of carbon trading under Law 4/2023 on the Development and Strengthening of the Financial Sector, the Financial Services Authority (OJK) is tasked with establishing and overseeing carbon trading in the carbon market. The OJK issued regulations on carbon trading through carbon exchanges and officially launched the carbon market on September 26, 2023 (IESR, 2023). Thailand has shown some interest in this space, and opened-up a platform for carbon credit trading (FTIX) aimed at providing domestic exporters with the option of purchasing credits. Other countries in the region are also developing institutional capacity and the necessary conditions for a carbon market at different stages, for example, Vietnam, the Philippines, Brunei, Cambodia, and Laos have different levels of readiness when it comes to establishing a carbon platform and have not made solid commitments on this front.

Recognising the importance of carbon markets in ASEAN and beyond, which will play a key role in supporting clean energy development in the region, the ERIA (Economic Research Institute for ASEAN and East Asia) one of the top global and regional think tanks, wishes to facilitate and expedite the implementation of a carbon market in ASEAN through under-testing the barriers and

the necessary conditions to allow a carbon market to freely compete in the open market in ASEAN and beyond, and open-up the door for a carbon market hub in the near future. Thus, accumulating knowledge around studies on carbon market issues in ASEAN and experiences from elsewhere, such as the EU Emission Trading System (ETS), will help ASEAN move from a voluntary carbon market to a fully integrated/mandatory carbon market, in which all emissions-related industries and businesses will participate, with clear rules and regulations to oversee its functioning in ASEAN.

Regional Cooperation: The Asia Zero Emission Centre (AZEC)

In a rapidly evolving landscape of environmental concerns, the quest for carbon neutrality in the ASEAN region has gained paramount significance. Recent research, including the latest ***Energy Outlook and Saving Potential in East Asia,*** published earlier this year by the Economic Research Institute for ASEAN and East Asia (ERIA), has shed light on the region's escalating greenhouse gas emissions. From 1990 to 2021, these emissions surged fourfold, primarily driven by robust economic growth and a mounting demand for energy. Moreover, the latest International Energy Agency (IEA) *World Energy Outlook 2023* indicates that, unless substantial measures are taken, the ASEAN region could potentially become the global leader in absolute growth of CO2 emissions up to the horizon of 2050. Clearly, decarbonisation in this region is pivotal for achieving global carbon neutrality.

Carbon neutrality is an overarching goal shared by countries worldwide, but the pathways to attain it should be tailored to the unique circumstances of individual nations. In this perspective, decarbonisation in ASEAN countries must be based on two imperatives.

The first imperative: the decarbonisation process must allow ASEAN countries to preserve energy security. Considering the current global instability and the projected surge in energy consumption within the ASEAN region, it has become increasingly vital to ensure a stable energy supply.

The second imperative: decarbonisation must allow ASEAN countries to realise economic growth. The IEA *World Energy Outlook 2023* reveals that the total energy consumption share of the ASEAN region, relative to the world total, has increased from approximately 4.2 per cent in 2010 to around 4.5 per cent by 2022. Simultaneously, ASEAN Member States are expected to achieve combined real GDP growth ranging from 3 per cent to 7 per cent between 2005 and 2050. As economic growth continues, energy demand is poised to rise significantly, and in the case of no-decarbonisation, this dynamic should lead to an increase of greenhouse gas emissions.

As one of its strategies, ASEAN countries need to take advantage of the various international cooperation schemes with advanced economies.

ASEAN governments are encouraged by diverse multilateral organisations, development banks, and partner governments to decarbonise their economies and achieve their stated policies and announced pledges. A multitude of discussions, joint studies, and pilot projects are progressing or being planned.

One of the most recent, the Asia Zero Emission Community (AZEC) established in 2022 tries to define and implement the realistic, just, and affordable decarbonisation pathways for ASEAN.

AZEC is strengthening cooperation among the ministers of Asian countries to work towards carbon neutrality through strategies, plans, business initiatives, and technological developments in many aspects. These include energy efficiency, renewable energy, hydrogen, ammonia, energy storage, bioenergy, Carbon Capture, Utilisation, and Storage (CCUS/carbon recycling), as integral components of collaborative efforts between the public and private sectors to achieve zero emissions.

AZEC's vision can be synthesised in three objectives: first, to advance cooperation towards carbon neutrality/net-zero emissions while ensuring energy security; second, to promote energy transition while achieving economic growth; and third to recognise the existence of various practical pathways toward carbon neutrality/net-zero emissions depending on the circumstances of each country.

In practice, aligned to the respective national policies and legislations, Asia Zero Emission Community (AZEC) is expected to be a platform for information-sharing, knowledge exchange, and implementation of measures in decarbonisation. AZEC provides financial support to boost investment in clean energy infrastructures, including a power grid to secure interoperability of clean technologies and to strengthen human resource capacity.

At the regional level, for instance, cooperation under AZEC is expected to accelerate the progress of the development of the ASEAN Power Grid (APG) in its various aspects, e.g., infrastructural, institutional, and regulation.

At the country level, based on recent discussions several topics appear to be potential areas of cooperation, not only in the area of decarbonisation – namely, support for formulating a roadmap toward carbon neutrality, boosting renewable energy (RE) penetration, capacity building and developing the potential of fuel ammonia, carbon capture and storage (CCS) and CCUS, and green financing – but also in the area of energy security, especially ensuring stable supplies of liquefied natural gas (LNG).

Conclusions and Policy Implications

Achieving carbon neutrality will require all countries to achieve large-scale GHG emission reductions, which is the fundamental transformation of energy systems: the almost-complete decarbonisation of the power sector, followed by electrification or decarbonisation of energy consumption other than electricity, and offsetting of the remaining CO2 emissions using negative-emission technologies. However, the availability of power systems or low-carbon energy, and the possibility of using alternative energy vary significantly across countries and regions, and energy transition cannot be accomplished uniformly.

While numerous opportunities to reduce emissions in the ASEAN and East Asia region to meet carbon neutrality by 2050-60 exist, the transition to carbon neutrality will have to safeguard energy supplies against this backdrop, recognising some countries' limited ability to leap suddenly to renewable energy due to economic constraints and ability to

pay the huge costs of decarbonisation. In this regard, this study suggests that: i) energy efficiency improvements and electrification in end-use sectors, combined with low-carbon power supply, are core strategies for decarbonising ASEAN energy systems; ii) not only VRE, but also other carbon-free technologies (hydro, geothermal, biomass, nuclear, CO2-free hydrogen, and CCUS) and negative emission technologies, as well as forest carbon sinks, should contribute to carbon neutrality; iii) during transition periods, fuel-switching from coal to natural gas, deployment of more efficient turbines, and co-firing with hydrogen or ammonia, all play important roles; iv) while affordable technologies will be deployed in the mid-term, more niche but expensive technologies would be required in the last stage of complete carbon neutrality; and v) for political, economic, and social acceptability, mitigation costs must be reduced through technology innovation, large-scale deployment, and regional/international cooperation.

Thus, multiple pathways that promote all options of clean technologies and renewables are key for the success of decarbonisation. Amongst other important issues in energy transition, attention must be paid to global south countries whose energy systems are heavily reliant on fossil fuels and any energy transformations will need to rejuvenate the system to be cleaner in an affordable manner. ERIA suggested three phases of the transformation:

1. Early decarbonisation transition technologies: These technologies involve the immediate switching from coal to natural gas power generation, waste to energy power plants in the power sector, and leak detection (LDAR) for fugitive emission reduction in upstream. These technologies can be deployed in the early phases of a country's transition pathway and may be retired before reaching net-zero emissions.

2. Partial emissions reduction transition technologies: These technologies include the co-combustion of coal-fired power generation with biomass, or ammonia, and the co-combustion of gas-fired power generation with hydrogen fuel. The share of biomass, ammonia, and hydrogen to the power generation mix must increase over time. For the upstream sector, we suggest introducing the use electrification in gas production and processing.

3. Deep decarbonisation transition technologies: Those technologies include Carbon Capture, Utilization, and Storage (CCUS) combined with coal/gas power generation, blue hydrogen, blue ammonia, and CCUS in gas processing. It is very important to note that CCUS has been selected based on six criteria: emission impact, affordability, reliability, lock-in prevention which highlights the emission reduction plan, do-no-significant harm, and social considerations.

To pursue the path to carbon neutrality, we may need to consider all available technology options including hydrogen and ammonia fuels, CCUS, battery energy storage, renewables, and all possible carbon off-setting mechanisms to reduce emissions, while at the same considering energy affordability, accessibility, and energy security. As many countries in ASEAN will still depend on fossil fuels for the foreseeable future, it is very important to have a step-wise, pragmatic approach for a just energy transition. Financing clean technologies and renewables is still one of the most critical issues in the global south countries including ASEAN. Striving for the circular economy may offer environmental benefits and save resources through recirculating a larger share of materials, reducing waste in production, light-weighting products and structures, and extending the lifetime of products. All these activities also offer the opportunity for new business models. In addition, the role of digitalisation will help all countries to take the opportunities to transform their economies efficiently, so that all economic activities become more energy-saving and energy-efficient which could contribute to overall emission reduction, particularly the energy-intensity reduction. Finally, the global south countries will need to achieve technological innovations as well as help to integrate nature-based carbon sinks into their solutions towards emission reduction efforts as much as possible.

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PAPER 2

Deglobalisation and Carbon Emissions

Jonathan Hsu and Heiwai Tang

Introduction

The 21st century has been marked by a notable shift towards deglobalisation, characterised by the re-evaluation of global trade patterns, supply chain dynamics, and international cooperation. This phenomenon has prompted widespread discourse on its economic, political, and social implications. However, one critical aspect that often remains understudied is the impact of deglobalisation on carbon emissions and, consequently, its implications for global efforts to mitigate climate change. Understanding these effects is paramount, given the urgency of addressing climate change and the interconnectedness of global economic activities with carbon emissions. In this article, we discuss some of the arguments for and against decarbonisation as a consequence of deglobalisation, and leave the reader with a cautionary message: while policies in the service of deglobalisation can and have led to restructurings in global supply chains, the *manner in which the restructuring occurs* likely matters far more in determining the final impacts on aggregate carbon emissions.

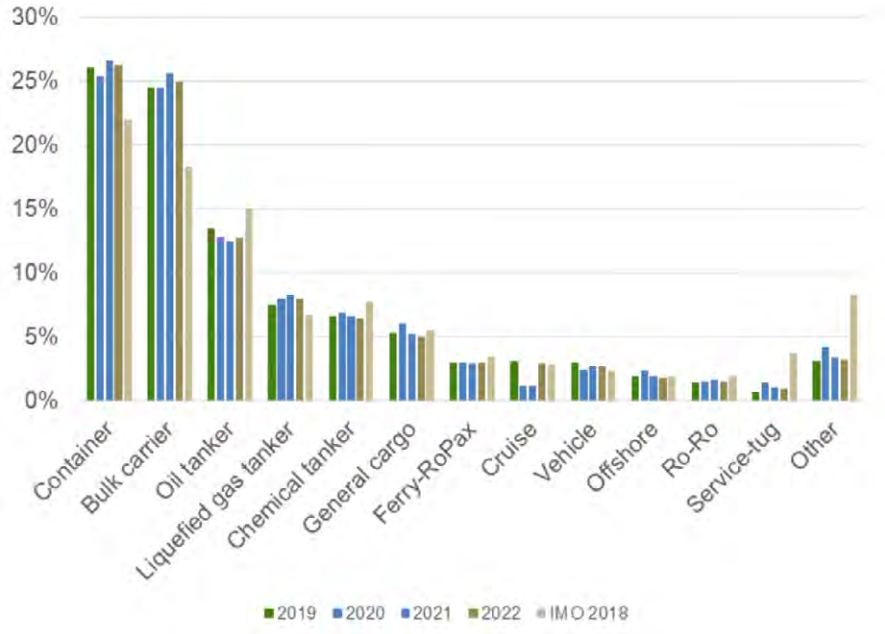
Decarbonisation and the Shuffling of Supply Chains

Many analysts and regulators have expressed optimism that deglobalisation would reduce aggregate emissions through the shortening of supply chains and subsequent reduction in fuel usage associated with long-distance shipping. According to recent data from the OECD, the maritime industry accounted for almost 3% of all global greenhouse gas (GHG) emissions and over a third of emissions from cargo transportation in 2022, at an estimated 858 million tonnes of CO_2. Air shipping accounted for a similar fraction, producing an estimated 739 million tonnes of CO_2.[1] As illustrated in Figure 1, the vast majority of shipping industry carbon emissions is produced by container and bulk carrier vessels, representing the most common types of ships used for international goods shipments.

To the extent that deglobalisation encourages the localisation of production processes to domestic markets, we may expect to see a reduction in the carbon emissions associated with the international shipment of goods. However, there is strong evidence that firms have responded to deglobalisation-oriented policies and pressures not by *reshoring* to domestic markets but by *nearshoring* to adjacent countries. For instance, recent academic research studying the effects of the USMCA on US automotive firms found that companies responded to the new international trade policy by replacing overseas suppliers with suppliers in Mexico in order to satisfy more stringent regional value content requirements.[2] In fact, Mexico has become a prime nearshoring destination for US manufacturers, overtaking China as the US's most important trading partner by import volume in the second half of 2023. However, while nearshoring does serve the goal of deglobalising value chains through increasing regionalisation, it is unclear whether it represents potential reductions in supply chain carbon emissions.

1 Source: https://stats.oecd.org/Index.aspx?DataSetCode=MTE
2 Source: Hsu, Li, and Wu (2023). *Supply Chain Nearshoring in Response to Regional Value Content Requirements*. Under review at Manufacturing & Service Operations Management.

Figure 1. Share of CO_2 Emissions from the Global Shipping Industry (%) by Vessel Type, 2019-22



Source: Clarke et al. (2023) "CO_2 Emissions from Global Shipping: A New Experimental Database." OECD Working Paper Series.

First and foremost, nearshoring may not produce reductions in the length of supply chains. In particular, if suppliers in the nearshore country rely on inputs from overseas, then nearshoring may simply shuffle where goods transportation occurs without changing the overall amount of shipment required. In some cases, we may expect nearshoring to result in an increase in the overall length of supply chains if the nearshoring of a production process represents a new link which did not previously exist.

Secondly, nearshoring may result in the substitution of cleaner cargo shipment vectors with those characterised by a far greater carbon footprint. To return to the example of US firms nearshoring to Mexico, the replacement of overseas suppliers with those in the adjacent country may also produce an increased reliance on land-based shipping methods over previous ocean and air freight. This transition can result in an overall increase in the carbon emissions associated with goods shipments, as road freight can emit more than 100 times as much CO_2 as ships to carry the same amount of cargo the same distance.[3] This issue may be exacerbated if nearshore markets have weak regulatory policies governing the carbon footprint of cargo freight vehicles.

The above discussion illustrates an important point to keep in mind when evaluating the impact of deglobalisation on carbon emissions: even if supply chains restructure so as to favour regionalisation or localisation, it is ultimately the final structure of the value chain that matters for determining any resulting changes to its carbon footprint. While it seems intuitive to assume that deglobalisation will result in a reduction in emissions through supply chain shortening, in reality a significant proportion of the types of supply chain structures we observe being implemented are consistent with nearshoring, and may not indicate any shortening at all. Moreover, to the extent that regionalisation and localisation are associated with a substitution towards land-based transport methods, they could be associated with an increase in overall CO_2 emissions due to the larger carbon footprint of road freight.

What Gets Shuffled Matters

In the above section, we discussed some ways in which deglobalisation policies have encouraged the reshuffling of global supply chains, and in particular why we might expect those changes to not be accompanied by significant decarbonisation. In reality, ***what gets reshuffled*** as part of deglobalisation efforts matters just as much as the reshuffling itself. There is increasing evidence that the portions of supply chains with the greatest carbon footprint are not the ones that have been involved in the general deglobalisation trend. With high-polluting industries remaining in offshore locations with lax environmental policies, we question whether the deglobalisation of supply chains can produce significant reductions in carbon emissions.

Our discussion begins with a landmark study by Associate Professor Joseph Shapiro from UC Berkeley's Department of Economics. In his paper titled "The Environmental Bias of Trade Policy", Professor Shapiro documents the fact that tariffs and nontariff barriers tend to be substantially lower for dirty industries than for clean industries, with dirtiness measured using CO_2 emissions per dollar of output.[4] This bias has been a major contributing factor for the outsourcing of highly polluting upstream industries to offshore markets as part of the globalisation trend which held sway for the past few decades, with some economic models suggesting that this 'carbon leakage' has had the net effect of increasing global carbon emissions. For instance, China's steel industry produced 54% of the world's crude steel in 2022, in the process accounting for about 15% of the country's total carbon emissions.[5]

There are two potential reasons for this. Firstly, the offshore locations which are the targets of carbon leakage are typically developing nations with weaker environmental policies. Indeed, this may be a core reason why firms choose to locate polluting production in these markets in the first place, as environmental regulations can often impose significant marginal operating costs otherwise. Secondly, the products of these polluting industries are often heavy and bulky, requiring a greater expenditure of fuel in order to ship them to their final destinations. With downstream production sites

3 Source: International Transport Forum. *Is Low-Carbon Road Freight Possible?* (2018).
4 Shapiro, Joseph. (2021). "The Environmental Bias of Trade Policy." *The Quarterly Journal of Economics.*
5 Source: Statista.

more likely to be localised due to the aforementioned bias in trade policies, this means that the upstream inputs need to be shipped from the offshore to the domestic market, acquiring a significantly higher carbon footprint than if the polluting industry were situated closer to home.

Observations of trade policies designed to favour deglobalisation suggest that deglobalisation has done little to change this environmental bias. Most tariffs and non-tariff barriers entering into force over the past five years target downstream, higher-value added, cleaner industries rather than the dirtier industries which supply their intermediate inputs. The result is that even while some of these downstream industries have implemented reshoring or nearshoring efforts, their heaviest-polluting suppliers remain in overseas markets. For example, while Mexico has seen itself develop into a hotbed of manufacturing nearshoring in recent years, the vast majority of the raw materials (i.e., products of the mining and chemicals industries) used in such production remain sourced from overseas countries.[6] These observations suggest that even if deglobalisation produces some measurable declines in carbon emissions, they may be only a drop in the bucket compared to the total carbon footprint of global supply chains if their most highly polluting segments remain offshored.

In sum, the potential benefits of deglobalisation for decarbonisation efforts may be hampered by the fact that policies to encourage the former are overly focused on downstream industries which pollute very little compared to upstream industries. The broader takeaway is that in order to properly assess the carbon impacts of deglobalisation in supply chains, it is crucial to identify ***which*** segments are the ones involved in the deglobalisation activities.

The Example of China+n

We close our discussion with a cautionary example illustrating how supply chains responding to deglobalisation policies may lead to significant increases in their carbon emissions. In particular, we focus on the decisions made by Chinese suppliers when faced with the escalation of the US-China trade war. This trade policy aimed to deglobalise US supply chains by reducing their reliance on Chinese suppliers built up over decades of globalisation-friendly policies. From existing discussions of deglobalisation, one might be led to believe that such a policy would encourage regionalisation and/or localisation and a corresponding reduction in supply chain length and carbon footprint. In reality, Chinese suppliers have responded not by moving operations closer to the US market, but by establishing intermediate production sites in third countries—most notably in Southeast Asia—which then ship to US consumers. Thus, rather than shortening supply chains, the presumably deglobalisation-minded trade policy has instead encouraged their lengthening through the addition of one or more intermediate links while maintaining the fundamental reliance of US firms on Chinese suppliers.

This type of structure, known more broadly as 'China+n', can have major negative impacts on carbon emissions through both of the previously discussed channels. Firstly, as mentioned earlier the incorporation of intermediate production sites in order to bypass the provisions of the trade war has resulted in a pure lengthening of supply chains, requiring additional international shipping activities which contribute to increased carbon emissions from fuel expenditures. Secondly, the countries now involved as part of the 'China+n' structure often have weaker environmental regulations than either China or the US. This makes them particularly attractive as production sites for Chinese suppliers, who face the prospect of increasingly environmentally friendly government policies. This means that any production taking place in these new supply chain links may carry a greater carbon footprint than if they took place in either of the two other countries.

This example illustrates the complexity of the relationship between deglobalisation-minded policies and broader decarbonisation efforts. If not properly implemented, these policies may produce unintended shifts in supply chains which produce increases in carbon emissions.

Conclusions

While deglobalisation may offer certain opportunities for emission reduction, in reality the evidence for such an effect are relatively mixed. Observations and empirical studies from the past few years have instead pointed to deglobalisation as a potential accelerator of emissions, depending on the manner in which the deglobalisation occurs. Common nearshoring strategies can result in longer supply chains than the previous, 'more globalised' structure. Moreover, these shifts may be accompanied by a substitution towards more carbon-intensive shipping methods. Furthermore, recent deglobalisation-minded policies have retained a bias towards the localisation of less-polluting downstream industries while leaving highly polluting upstream industries in overseas locations, thus limiting the scope of potential decarbonisation. In conclusion, the complex interplay between deglobalisation and carbon emissions underscores the need for a nuanced and holistic approach to addressing climate change.

6 Source: International trade data from Panjiva and UNComtrade.

Discussant Comments

Tao Zhang

Thank you, Rakesh and Laveesh for inviting me to join this outstanding event. I have enjoyed very much the gathering and intellectual brainstorming and discussions among friends and some of the best and brightest minds in Asia.

An overarching observation from my end after reading the papers and hearing the discussions is that industrial policies that help combat climate change and energy transition can be growth-enhancing, provided they are designed and implemented in a coordinated manner both domestically and internationally to the extent possible.

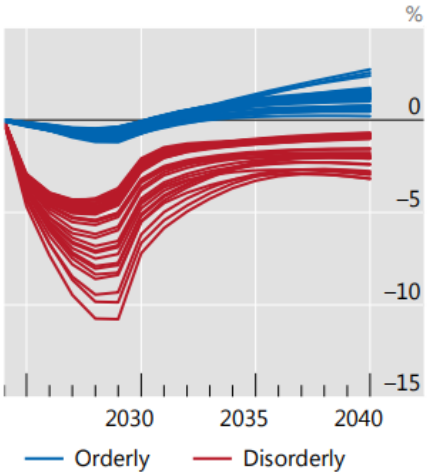
Allow me to unpack this in five brief points.

Point 1: Industrial policy to put in place green investment to gradually substitute for carbon-intensive energy sources can be growth and productivity-enhancing. At the same time, however, sudden and disorderly shifts where the adoption of clean energy lag the shutting down of carbon-intensive sources will, on the other hand, be inflationary and lead to a decline in output. As people say, you cannot blow up the plane while the passengers are still in the air.

The green transition calls for targetted measures to put in place a more durable and sustainable energy mix.

For example, simulations based on the NGFS climate scenarios that feature a timely increase in green energy investment could impose relatively small near-term costs and deliver persistent long-term gains in economic output and productivity. By contrast, a disorderly shift, where the adoption of clean energy technology lags, but carbon-intensive energy sources are shut down rapidly, would involve significant costs in both the short and long run.

A. A disorderly green transition sees a persistent decline in GDP[1]



So to this extent, a broad approach is necessary to ensure that the supply of electricity continues to increase while also substituting renewable energy for existing fossil fuel sources.

The paper by Mr Watanabe and co-authors of ERIA is a very comprehensive examination of how different clean technologies can provide different contributions to meet carbon neutrality. There is little disagreement with the authors' conclusions that this will require a fundamental transformation of energy systems, at the same time a key point is that the possibility of using low-carbon energy and alternative energy varies significantly across countries and regions. In particular, countries of the global south have energy systems that heavily reliant on fossil fuels.

Thus, the author's conclusion that we need to recognise the limitation of some countries to "leap suddenly" to renewable and low-carbon energy leads to the point I just made. This is consistent with what the **NGFS** calls **orderly scenarios.**

Rather, ERIA has suggested wisely that we focus in a phased manner on different elements of the energy transformation, including early decarbonisation transition technologies that can be retired at a later stage, partial emissions reduction transition technologies, and deep decarbonisation transition technologies such as carbon capture, utilisation and storage. A phased approach ensures consideration of energy affordability and accessibility as well as energy security.

Point 2: The new focus on energy security is a double-edged sword.

The focus on energy security has sharpened considerably since the onset of the war in Ukraine; this is widely believed, over the longer run, consistent with the push to 'green' the economy. That said, in the near term, energy security consideration may delay the green transition in some countries by increasing the demand for coal and shale gas. Near-term transition costs may be greater than conventionally assumed and create additional fiscal burdens. For small countries in particular, the focus on energy securities poses the biggest risks, to the extent that markets for critical materials and other materials become balkanised.

The second paper on de-globalisation and carbon emissions presented by Professor Tang, reminds us not to be complacent that de-globalisation and near-shoring will facilitate the reduction of carbon emissions, for nearshoring often results in longer supply chains ultimately and more carbon-intensive shipping methods. The point about nearshoring resulting in longer supply chains was also confirmed by BIS studies on mapping the realignment of global value chains. The BIS studies concluded, from analysing firm-level network data, that global supply chains have lengthened and that recent developments have not so far reversed the long-running trend toward greater regional integration of trade in recent decades, especially in Asia.

Point 3: Capacity of absorption, including fiscal burdens must be considered when financing the green transition.

The green transition is a long process for many economies. There is an overarching priority to ensure fiscal sustainability, which is the cornerstone of economic stability, and critical for monetary policy to do its job. Unfortunately, the burdens related to the green transition combine with those related to aging populations and geopolitical tensions impose tremendous challenges. The need to finance the green transition makes it all the more important to consolidate fiscal policy and ensure that it is within the realm of the zone of stability, so that there is room to contribute to the green transition without debt burdens ballooning and becoming unsustainable.

Point 4: Industrial policy ideally goes hand-in-hand with structural reforms including capacity building and reforms contributing to maintaining competitive and open markets.

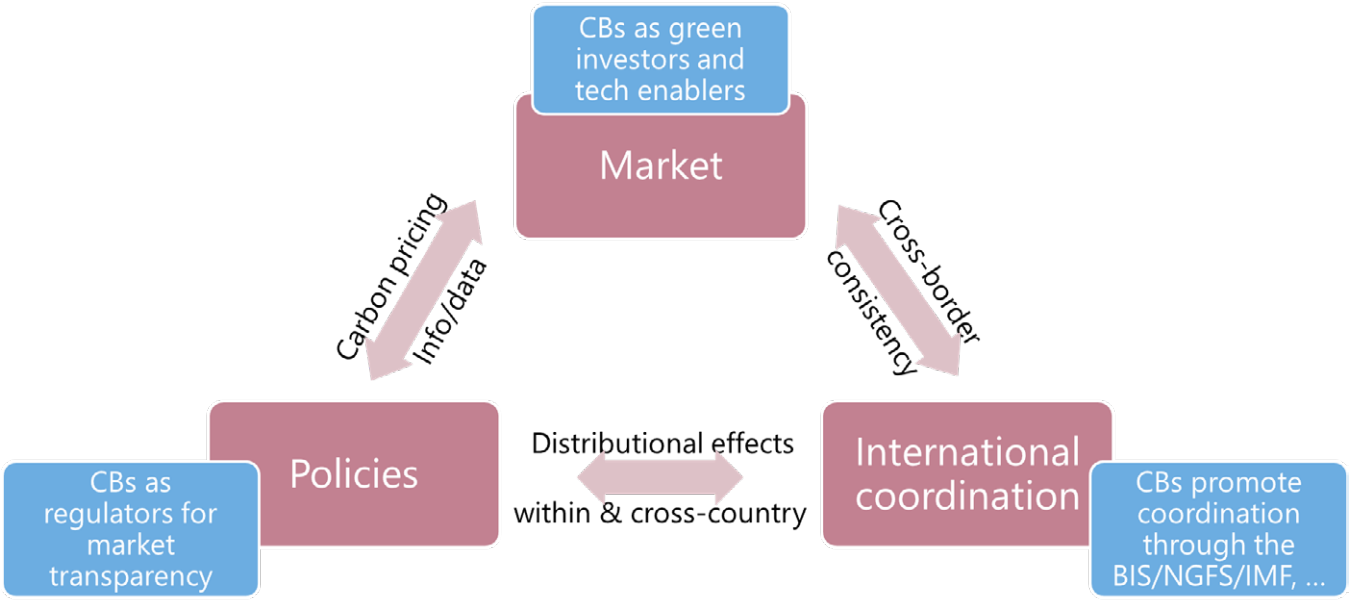
As the BIS has argued in its recent Annual Economic Report, policymakers need to identify opportunities that longer-term structural policies can offer. More generally, it would be important to rebalance government expenditures toward well-chosen and effectively executed investment projects, such as in the area of green energy, as well as targeted investments in education and capacity-building for the workforce and diffusion of technological knowledge.

Another area of focus is maintaining competitive and open markets, both domestically and internationally. Green technology and investment are no exception. This sort of competition will lower inflationary pressures and widen the region of stability within which fiscal and monetary policy can operate.

Point 5: A three-pillared approach towards net zero transition, with international cooperation playing a key role

What do I mean by this? The first pillar is to get the carbon pricing right, namely, to embed environmental costs in the value creation of economic activities. Emissions trading systems or carbon-crediting mechanisms should be put to good use, relying on market forces and disciplines. The second pillar is international cooperation. It is necessary and essential to ensure equitable burden-sharing between developed and developing countries in the pursuit of environmental objectives. The third and final pillar is public policies which contribute to getting the carbon price right, especially when market forces on their own cannot achieve it. This can be done through, for example, information disclosure, consistent standards, and clear taxonomy, etc.

A Three-Pillar Approach to Accelerate the Transition



Source: Author's depiction.

PAPER 3

New Industrial Policies for Climate Change and Energy Transition

Muhamad Chatib Basri

Do we Need Industrial Policy for Energy Transition and De-carbonisation?

- Industrial policies: government policies that explicitly target the transformation of the structure of economic activity in pursuit of some public goal. Rationale: externalities, coordination failures, activity–specific public inputs (Juhaz, Lane and Rodrik, 2023).
- The energy transition requires significant investments in new technologies and infrastructure, many of which may not be immediately profitable or economically viable.
- Job creation and economic growth: Transitioning to clean energy and decarbonising the economy has the potential to generate new employment opportunities and stimulate economic growth. By providing targeted support, governments can encourage the growth of these sectors, attract investment, and create high-quality, sustainable jobs.
- Climate change as a global public goods and IRA.

1. Innovation and Technology Development: Invest in research and development (R&D). Policies should support innovation ecosystems that facilitate the transition from prototypes to market-ready solutions.
2. Regulatory Frameworks and Incentives: Implement regulatory measures that encourage the reduction of greenhouse gas emissions across all sectors. Policies should also aim to phase out subsidies for fossil fuels in a socially equitable manner.
3. Infrastructure Development and Grid Modernisation: These investments are crucial for enhancing the resilience and flexibility of energy systems.
4. Education, Training, and Job Creation: As the energy transition unfolds, it's essential to ensure that workers have the skills needed for new green jobs.
5. International Cooperation and Trade Policies: Industrial policies should therefore align with global climate goals and support international cooperation on technology transfer, funding mechanisms for climate action in developing countries, and the establishment of fair trade practices for clean energy technologies.

- Successful implementation of these policies will require collaboration between governments, industries, and communities, along with a commitment to long-term sustainability and equity.

Some Challenges

- "Government is very bad at picking winners, but losers are very good at picking government"
- Coordination is costly; requires good bureaucracy; information
- Lack of innovation and dynamic thinking: agility
- Market distortion and inefficiency: over investment etc.
- Industrial Policy: race to the bottom?

- Not focusing on picking winners but letting losers go. Political economy
- Focus on process rather than outcome(Rodrik, 2004)
- "Sobber industrial policy?"

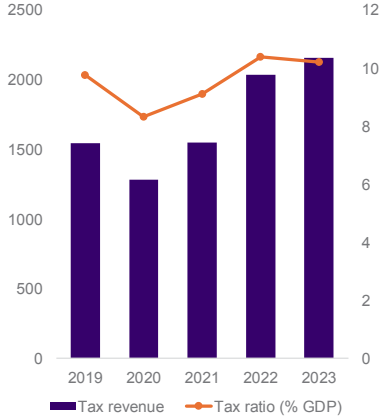
Fiscal Policy Measures as Part of Industrial Policy to Support Energy Transition: The Role of Green Fiscal Stimulus in the Case of Indonesia

Limited Financing Capacity and Burden of Fuel Subsidy

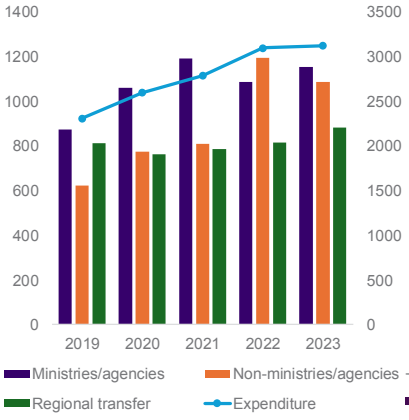
- Indonesia requires around US $28.5 billion annually to achieve its NDC target by 2030.
- Indonesia's tax/GDP 9-10% of GDP in 2023.
- The central government's budget allocation for climate change only amounted to 1.1% of total central government spending in 2020.
- The subnational government's spending is highly dependent on budget transfers from the central government. Furthermore, the government allocates around 5% of its budget to fuel subsidies, mostly for dirty energy.
- One positive development is the implementation of climate budget tagging (CBT), currently implemented in 11 provinces, the budget has reached USD4.8 billion per year, with 61% allocated towards adaptation and 39% towards mitigation.
- Debt/GDP 40%; max fiscal deficit/ GDP 3% (by law).
- Subsidy for renewable energy? Limited financial capability.

Constrained public spending despite strong revenues, has kept the budget in small deficit

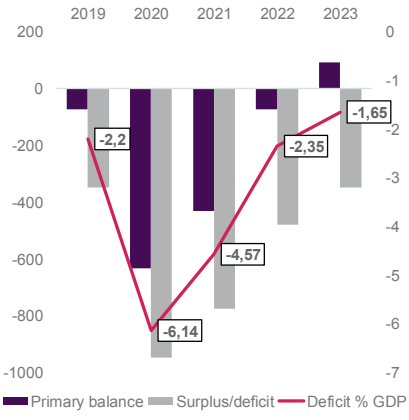
Tax Revenue collections remained strong despite
- moderating commodity prices,
- weakening import values,
- elevated tax refunds,



Gov't expenditure remained suppressed, as a response by the government in face global uncertainty



Small fiscal deficit to navigate rising borrowing cost globally and better manage its existing debt after large expenditure during the COVID-19 pandemic



Energy Sector Received the Largest Environmentally-Relevant Stimulus Packages

Stimulus measure	Size (US$ mn)	Greenness
Compensation payment for PT Pertamina (oil & gas SOE)	2,380	
Compensation payment for PLN (electricity SOE)	2,870	
Electricity subsidies for the poor	240	
Deregulation bill (mining)	N/A	
Suspension and elimination of VAT and Income Tax for various RE projects, as well as suspension of loan installments and lower interest rates	N/A	
Subsidies for use of biodiesel-type fuels	N/A	
Fees waived for procurement for Independent power providers (IPP)	N/A	
Subsidies for solar PV installation	N/A	

Total US$ 5.5 bn

Share to total 88%

Green measures 4

'Green' 'Dirty'

Green Fiscal Policy and International Cooperation

- Domestic financing
- Green fiscal stimulus
- Increase tax revenue from Pigouvian tax (Carbon tax)
- Reallocate tax expenditure to green sector: (R&D), training (double deduction of tax for training and R&D)
- Reallocation of spending: fossil fuel into vulnerable groups and green
- External financing
- MDBs: expand concessional loans; SDR; Blended finance
- Reform in Basel III (?)
- Private sector and philanthropies

Political Economy

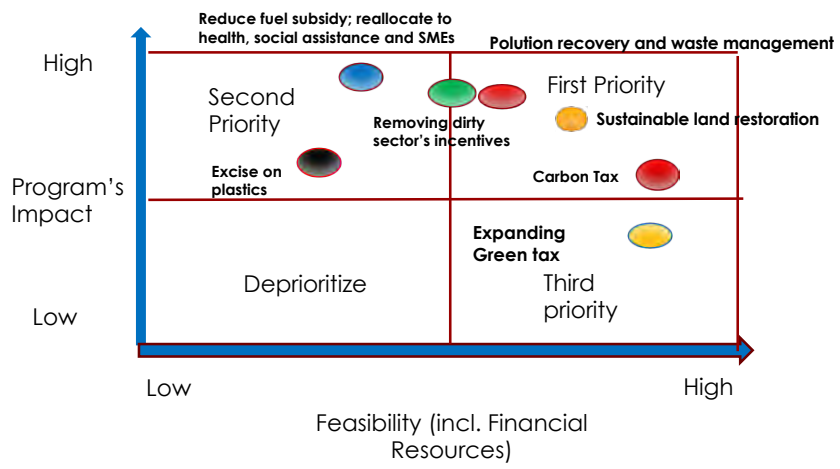
"The first lesson of economics is scarcity: There is never enough of anything to satisfy all those who want it. The first lesson of politics is to disregard the first lesson of economics."

-Thomas Sowell-

- Budget allocation is a political process.
- Environmental concerns are often considered a "luxury" in developing countries, where poverty, low productivity, poor education, and inadequate infrastructure are more pressing issues.
- Environmental policies must be integrated into the development agenda to gain attention and support.
- The success of a policy reform depends on political support for its continuation.
- Reforms need to be implemented quickly and show quick wins to gain support from politicians and leaders. Policies must also consider existing institutional conditions and the political cycle.

Policy	Winners	Losers	Policy Mitigation
Carbon Tax	Green sectors. This policy help Ministry of Finance, Ministry Environment, Ministry Development Planning to achieve their KPIs	Dirty sectors, this policy may not be supported by Ministry of Industry, Ministry of trade, Indonesia Chamber of Commerce (KADIN)	Gradual implementation of carbon tax ensure to broad participation and setting up right framework of carbon market.
Excise on fossil fuel	Poor/vulnerable groups (if they get compenation hel Ministry Finance, Ministry of Environment, Ministry of Development Planning to achieve their KPIs	Vulnerable groups (lower middle-income group, who doesn't receive compensation, SMEs, Middle- and upper-income class, oil importer; smuggler	Expansion of social protection program for poor and vulnerable
Excise on plastics	Increase revenue of Ministry of Finance, hel Ministry Environment to achieve their KPI, green sectors	Plastic producers, industry who are consuming plastics for intermediate products, affect Ministry of Industry and Ministry of Trade's KPIs	Subsidies for plastic substitutes
Removing all dirty sector subsidies	Provide more room for fiscal, this will help Ministry of Finance, Ministry of Environment, Ministry of Development Planning to achieve their KPIs, green sector	Dirty sectors	Provide incentives to transition towards low-carbon production activities
Expanding green tax incentives	Helps Ministry of Environment, green sector, Ministry of Development Planning, Ministry of Industry,	More burden for Ministry of Finance	Exploring new sources of fiscal revenue

Green Fiscal Stimulus under Political Constraints



Source: Basri and Riefky (2023)

Discussant Comments

Nitin Desai

Let me begin by saying that the first lesson of economics is to ignore the lessons from environmental science. That is one reason we are having this discussion. We have spent the entire day discussing the issue of industrial policy. I challenge you to find an industrial policy articulated by anyone that includes the management of one of the greatest threats the world faces. There are hardly any.

Yes, the United States has the Inflation Reduction Act (IRA), which is a substantial commitment to climate change mitigation. However, this is not the case everywhere. Essentially, the way people or governments are approaching their role in mitigating climate change is not connected to industrial policy. India has a very ambitious climate change programme. It is going to meet its 2030 targets. It is truly ahead of most of the other larger countries in terms of its progress on climate issues. But is this reflected in its industrial policy? India's main instrument of industrial policy today is the Production-Linked Incentive (PLI) scheme, focusing on 14 sectors. Of these 14 sectors, two could be considered connected to climate change mitigation: highly efficient solar PV modules and advanced chemical cells. The allocation for these two sectors is only 5% of the budget. The majority of the funding goes to sectors like electronics. Therefore, I urge that we find ways to connect what governments increasingly agree they need to do on climate with their industrial policies.

Consider the discussion of global supply chains. We have been talking about how the transportation aspect of global supply chains impacts climate change. There is another dimension to this. Global supply chains also lead to the shifting of carbon emissions from consumption. If we look at Europe, its carbon emissions from consumption are about 30% to 40% higher than its carbon emissions from production. This is because much of its carbon-intensive consumption has shifted to China and comes as imports from there. This is the reality.

Another recurring theme in our discussions today is the conflict between the US and China. What does this mean for the future of climate action? Currently, these two countries lead in the development of climate technology. China is a strong leader in the solar sector: 70% to 80% of solar modules come from China, as do batteries. I would argue that this should be seen as China's contribution to carbon mitigation. Without these low-cost solar modules, we wouldn't be able to achieve the renewable energy growth we have experienced. Therefore, these are things we need to consider.

What I am suggesting is that the key element for climate action is research and development, as Mr Basri mentioned. Two types of things are required: implementation of new technologies for production and the development of new technologies. The first, which I call the "push side", is already known. We can "push" it through regulation or other means. But there is something else that is more important: the "pull side". This is the stuff we don't know enough about, and it requires government support for basic research. It also requires incentives for industry. This is already happening. It happened with vaccines. Gavi, the Vaccine Alliance, set up an incentive scheme where government and the Gates Foundation provided funds to pharmaceutical companies on the condition that they develop low-cost vaccines, such as pneumococcal vaccines, for poor countries.

Recently, a new scheme has been set up by a company called Frontier for climate action. Companies that want carbon credits for various reasons provide funding, and Frontier then distributes that money to those undertaking carbon removal from the atmosphere. This is still a very uncertain technology. It won't be effective unless it can actually achieve its goal. So, these are the things that we in India and people in Asia should start thinking about.

Regarding spending on technology support, I strongly agree with what Naushad said earlier: that it is not just about giving money to specific laboratories. It is about considering the totality of what needs to be done to get this going. There are many things that can be done through cooperation. I suggest that India and the rest of Asia consider collaborating on basic research. Collaborating on commercialised technology development is tricky and difficult, but we can and should collaborate on basic research. We all lack the resources for the basic research needed for development. So, I urge that this be done quickly.

My final comment is one most of you may not agree with, but I believe nationalism is obsolete. Economic systems do not respect national boundaries, and our ecological systems certainly don't. We have accepted that the only way to address climate change is through cooperative agreements between countries. No country can handle this alone. It doesn't matter if China and the US develop these technologies. They cannot handle carbon mitigation unless we all agree. Therefore, we must move beyond regional cooperation and consider a global approach that respects the reality that this is not a national problem, but a global one. We must rely on global cooperation to address this. I will stop here.


DANNY QUAH
SHYAM SARAN
INDIA IN ASIA
DEEPER ENGAGEMENT
CSEP


AJAY SINGH
JOMO KWAME SUNDARAM


ON-JE CHO


EMMANUEL JIMENEZ
BILAHARI KAUSIKAN


SUDIPTO MUNDLE
NISHAN DE MEL


SANJAY KATHURIA


BERNARD YIN YEUNG
AJAY SINGH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BHANDARI


RAKESH MOHAN


RAHUL TONGIA


SHUJIRO URATA

SESSION 5

New Growth Policy Paradigms for Asia in a Fragmenting Global Economy: Impact of New Industrial Policies

SESSION NOTE

Vikram Nehru[1]

Introduction

Traditionally common in the developing world, industrial policies have recently garnered attention due to their enthusiastic adoption by advanced economies.[2] This poses new risks to the global economy and new policy challenges to developing economies. Ever since World War II, the advanced economies have championed a liberal international economic order underpinned by global institutions such as the WTO, the IMF, and the World Bank. But now the advanced economies appear to have found many reasons to justify state intervention in support of individual industries: restoring hollowed-out domestic manufacturing capacity, raising remuneration of low-income workers, mounting a defense against Chinese industrial policies in manufacturing, reshoring or friend-shoring supply chains to enhance economic resilience, maintaining supremacy in cutting-edge defense-related technologies, promoting economic and national security in the face of China's rise, and responding to the existential threat of climate change. Whatever the motivation, these interventions – usually import tariffs, FDI restrictions, technology access controls, directed lending, and industry-specific production and R&D subsidies – impose externalities on

1 The author wishes to thank Rakesh Mohan and Danny Quah for comments on an earlier draft.

2 The economics literature defines industrial policies in a variety of ways. For the purposes of this session, however, the term industrial policy refers to the application of one or more government policy instruments to promote targetted firms, industries, or economic sectors to achieve strategic objectives. The common, implicit logic behind industrial policies is that the invisible hand of markets may promote efficiency, but it is incapable of generating socially desirable outcomes without the assistance of the visible hand of government. Moreover, it is the *targetting* of policy instruments to firms, industries, or sectors that differentiates industrial policies from the economy-wide policy alternative of investing in public goods more generally, like education, infrastructure, basic R&D, macroeconomic stability, a competitive real exchange rate, and good governance. Governments in advanced and developing countries (including Asia) have used industrial policies for a range of objectives: encouraging national champions in global markets; driving productivity growth through innovation and scale economies; accelerating the transition to clean energy; bolstering national (including health and energy) security and economic resilience; increasing economic opportunities in lagging regions, generating jobs and building a more inclusive economy; and shifting the balance of power globally or regionally.

other countries and disrupt trade, FDI, and technology flows.[3] Developing economies are being compelled to seek new growth policy paradigms that fit these new global realities.[4] This is particularly true in Asia, a region heavily dependent on trade and FDI flows that must now contend with potentially destabilising industrial policies in the world's largest economies.

This note provides a snapshot of the 'new industrial policies' being pursued by the advanced economies and examines their impact on Asian emerging markets and developing economies (EMDEs). The two session authors, the discussants, and conference participants are encouraged to consider what should be appropriate policy responses by Asian EMDEs assuming that this new policy direction continues into the future. To help stimulate discussion, this note ends with some issues for discussion.

Industrial Policies in Advanced Economies and Asia: Old Wine in New Bottles?

Industrial policies in the advanced economies have been used for decades, if not centuries.[5] Even as the US, Europe, and Japan were touting free trade, they were channelling large subsidies to their agricultural sectors. After World War II, Japan used 'administrative guidance' to stimulate the growth of manufacturing. The US government intervened in its semiconductor industry at various times to promote domestic capabilities. In Europe, the Airbus consortium received substantial financial assistance from the governments of France, Germany, Spain, and the UK.

Industrial policies have been ubiquitous in developing Asia too. Indeed, they were a key ingredient in the so-called 'East Asian miracle' (Theme of Session 2). In Korea, for example, the government promoted heavy and chemical industries to emulate Japan's industrialisation success. In China, industrial policies are a ubiquitous and permanent feature in the economy. In Taiwan industrial policies shaped import-substitution in the 1950s, export promotion in the 1960s and 1970s, and high-tech development from the 1980s onward.

Economists are divided on whether industrial policies helped or hindered the spectacular economic success of East Asian economies. But many argue that in South and Southeast Asia, industrial policy initiatives did not meet expectations. India's emphasis on heavy industries and state-led development is seen by many as a costly mistake. Malaysia's foray into automobile production through a state enterprise – the Proton conglomerate – did little to build an internationally competitive auto industry. Indonesia's multiple efforts to support specific sectors – steel, autos, rice – failed to accelerate growth and may even have dampened it. Myanmar's industrial policies that emphasised military and government ownership of key enterprises have all but destroyed any economic capacity in that country.

'New Industrial Policies' in the US and EU

What makes discussion of industrial policy topical today is the surge in their use by advanced economies. A study of nine OECD economies found that all had adopted industrial policies, spending about 1.4 per cent of GDP on average to push these initiatives through trade financing, state loans, financial grants, financial assistance in foreign markets, local sourcing, loan guarantees and import tariffs.[6,7]

The United States

Five forces have triggered the surge in US industrial policies. The first is China's rapid economic growth since 1978, the parallel decline in US manufacturing employment, and stagnation in the real earnings of low-wage US workers.[8] Second, the pandemic highlighted a fundamental weakness in US economic security – the vulnerability of US supply chains, especially to developments in the Chinese economy. Third, to counteract perceived instances of unfair competition, US policymakers have occasionally responded to Chinese industrial policies with industrial policies of their own.[9] Fourth, intensifying US-China geo-strategic rivalry and Beijing's growing military and technological capabilities and its assertiveness in Asia prompted the US to reconsider its responses to these perceived threats (Theme of Session 1). And fifth, the existential threat of climate change increased the urgency of implementing mitigation policies and accelerating the transition to clean energy.

An important casualty of these five forces was traditional first-best policies of liberalised trade, technology, and information flows, which gave way to more interventionist options: first, to defend against Chinese industrial policies; second, to re-shore parts of the supply chain in strategic sectors (semi-conductors, electric vehicles, battery production, and personal protective equipment); third, to maintain suprem-

3 Note that fragmentation in the global economy can be consistent with continued globalisation as measured by traditional indicators such as trade-GDP ratios.
4 Indeed, as the rest of this note shows, a relatively insignificant part of the recent spate of industrial policies adopted by advanced economies are for public goods, such as basic R&D or general infrastructure. Separate legislation providing public goods and services, such as the US Infrastructure Investment and Jobs Act (which finances roads, bridges, rail, airports, broadband, and so on), should not be considered part of the US industrial policy framework.
5 For instance, England, during the fourteenth century, employed tariffs, export restrictions, and other measures to stimulate its wool manufacturing.
6 The Organization for Economic Cooperation and Development. (2023). "Quantifying Industrial Strategies Across Nine OECD Countries", OECD Science, Technology and Industry Policy Papers, No. 150, June 2023.
7 Subsidies are the preferred industrial policy instrument of advanced economy governments. See Evenett, Simon, Adam Jakubik, Fernando Martín, and Michele Ruta. (2024). "The Return of Industrial Policy in Data", IMF Working Papers Wp/24/1, January 2024.
8 A recent paper estimates that for the period 2000-19, roughly 59 per cent of all job losses in US manufacturing can be attributed to increased import competition from China. See Autor, D., D. Dorn, and G. Hanson. (2021). "On the Persistence of the China Shock", NBER Working Paper w29401. Cambridge, MA: National Bureau of Economic Research. The other important economic factor driving job losses in US manufacturing was labour-saving technological change. https://www.nber.org/system/files/working_papers/w29401/w29401.pdf
9 A recent paper shows that there is a 73.8 per cent probability that a subsidy for a given product by one of the three large economies (the EU, US or China) will be met with a subsidy for the same product by another one of the three. See Evenett, Simon, Adam Jakubik, Fernando Martín, and Michele Ruta. (2024). "The Return of Industrial Policy in Data", IMF Working Papers Wp/24/1, January 2024.

acy in emerging dual-use technologies (notably in semiconductors);[10] and fourth, to weaponise economic policies as instruments of coercion. No longer are economic policies judged on whether they are best for the US but whether they are best for the US *relative* to China. US policymakers recognise that these policies may constrain US economic performance but calculate that they will constrain China even more.[11]

Starting in 2018, the US imposed tariffs, investment restrictions, export controls, and domestic subsidies, all aimed at reducing China's access to the US market and technologies. These were immediately followed by retaliatory actions from China. Today, US tariffs cover 66 per cent of all imports from China with an average rate of 19.3 per cent, while China's retaliatory tariffs cover 58 per cent of imports from the US with an average rate of 21.1 per cent (theme of Session 3).[12]

The Biden administration maintained the Trump tariffs it inherited and then added the 2022 Chips and Science Act which, together with other actions, strengthened export controls on advanced semiconductors, provided tax and other incentives to US chip manufacturers, placed several Chinese companies on a restricted entry list, restricted joint research project, and funded R&D manufacturers, placed several Chinese companies on a restricted entry list, restricted joint research projects with Chinese, and funded R&D on new advanced technologies.[13] This second major strand of industrial policy was justified purely on national security grounds and was intended to prevent China from acquiring the latest US-developed dual-use technologies for deployment in weapon systems.

The third major strand of US industrial policy is to accelerate the country's transition to clean energy and meet its climate targets (Theme of Session 4). But here too, there is an element of competition with China, manifested in the urgency to develop globally competitive solar power, electric vehicle (EV), and battery industries. The 2022 Inflation Reduction Act (IRA) offers over $360 billion in incentives to encourage clean energy and an onshore EV industry, imposes extensive local content requirements on the EV and associated battery industries, and even requires that critical minerals for battery production are either to be sourced domestically or from FTA partners.

The European Union

EU member states have followed the US lead, pursuing comparable objectives – enhanced international competitiveness, on-shoring and increased resilience, accelerating the transition to clean energy, and reducing dependence on China for advanced technologies. There have also been EU-wide initiatives such as the Green Deal Industrial Plan which, like the IRA, intends to invest large sums to promote the transition to renewable power production and clean technologies in manufacturing through state-provided loans and grants. To level the playing field for its manufacturing sector, the EU's Carbon Border Adjustment Mechanism imposes a fee on imported manufactures from countries that do not have carbon pricing arrangements like its own. And mirroring the US, the EU passed the European Chips Act to increase onshore chip production, grow global market share in microprocessors, and promote 'technological sovereignty'.

Asia's Response to the 'new' Industrial Policies of the US and EU

As one would expect, the impact of US and EU industrial policies on Asia has been as varied as the countries in the region and has elicited a correspondingly diverse set of policy responses. Below we consider the impact on, and policy responses by China, Japan, India, Southeast Asia, Korea, and Taiwan.

China

China's response is *sui generis* because it is perceived as a principal protagonist in the trade and technology war with the US and Europe. Its steady integration with global markets since 1978 was calibrated to strengthen economic security by building domestic capabilities and maximising resilience. Xi Jinping's recently announced 'dual circulation' strategy seeks to reduce China's dependence on the world while furthering increased foreign reliance on China. This policy is meeting with some success: China's trade-GDP ratio declined from a peak of 71 per cent in 2006 to a trough of 38 per cent in 2022, while its share in global exports has climbed from less than 2 per cent in 1985 to 13 per cent in 2020.[14]

China's latest industrial policy initiative, "Made in China 2025", targets ten sectors to transform its economy from labour-intensive, low-value-added mass production into a technology leader capable of competing successfully against the world's most advanced economies.[15] Similarly, its Standards 2035 strategy seeks to craft common industry standards within China that can then be promoted internationally. Chinese industrial policy has also been reactive,

10 Quantum computing, now considered viable but still in its early stage of development, could become the next battleground for competition between the large, technologically advanced powers, including China.

11 Some argue that these actions are likely to hurt the US economy more than they would the Chinese economy. See Hass, Ryan and Abraham Denmark. 2020. "Many argue that these calculations have not proved correct." See "More pain than gain: How the US-China trade war hurt America", August 7, 2020; https://www.brookings.edu/articles/more-pain-than-gain-how-the-us-china-trade-war-hurt-america/ and Sachs, Jeffrey. 2023. "The US economic war on China", The New World Economy, August 22, 2023. https://www.jeffsachs.org/newspaper-articles/us-economic-war-on-china#:~:text=Jeffrey%20D.-,Sachs,enjoyed%20until%20the%20late%202010s.

12 Bown, C. P. (2023). "US-China trade war tariffs: an up-to-date chart", Peterson Institute for International Economics). https://www.piie.com/research/piie-charts/us-china-trade-war-tariffs-date-chart

13 The R&D effort is likely to focus on improving the efficiency of graphic processing units (GPUs) and quantum computing, among other priorities. Recent breakthroughs in quantum computing have created the first-ever quantum circuit with logical qubits, a discovery that could (the technology is not completely proven) accelerate fault-tolerant quantum computing and potentially allow computers to solve problems in minutes that would take today's supercomputers millions of years.

14 Subramanian, Arvind, Martin Kessler, and Emanuele Properzi. 2023. "Trade hyperglobalization is dead. Long live...?", PIIE Working Paper, November 2023. https://www.piie.com/sites/default/files/2023-11/wp23-11.pdf

15 The ten sectors are: new generation information technology, robotics and high-end computerised equipment, green energy and green vehicles, aerospace, ocean engineering, railway equipment, power equipment, new materials, medical devices, and agricultural machinery. See Congressional Research Service. 2023. "Made in China 2025" Industrial Policies: Issues for Congress. https://sgp.fas.org/crs/row/IF10964.pdf

such as China's restrictions on exports of gallium and germanium compounds in retaliation for the US ban on exports of advanced chips.[16]

Japan

In 2000, the US was Japan's largest trading partner; by 2022, it was China. Japanese firms now have more than 10,000 subsidiaries in China. Facilitating this trend has been the Japanese government's embrace of regional trade agreements, the most recent being RCEP.

Japanese policymakers' concerns about economic security were heightened following the US-China trade war, the pandemic, the Russian invasion of Ukraine, and multiple instances of political friction with China since 2010.[17] Their 2022 National Security Strategy, allocated a budget of $2.3 billion to encourage Japanese firms based in China to relocate their Chinese operations to Japan or Southeast Asia. In addition, the new strategy provided additional protections to intellectual property in sensitive areas, financed new public-private partnerships for R&D in critical technologies, and increased security of vulnerable physical infrastructure.

It is too early to assess the efficacy of Japan's industrial policies, but so far Japan has not been particularly successful in on-shoring – or 'friend-shoring' – its strategic inputs away from China. Even the share of Japan's imports of rare earths from China, which had initially declined, has once again climbed to pre-2010 crisis levels.[18]

India

India's trade ramped up since its economic reforms of 1992; its trade (of goods and services)-GDP ratio is now 49 per cent compared to China's 38 per cent. India's trade and FDI policy changes in recent years have been driven by its bilateral relations with China, not by industrial policies in the advanced economies. The US is now India's largest trading partner, having overtaken China – the result of India's policy response to Chinese incursions along the India-China border. India introduced policies to lower imports from China and increase scrutiny of Chinese FDI in India, along with other measures. China's share in India's total trade has fallen, but bilateral trade with China has continued to grow along with India's bilateral trade deficit with China which reached $87 billion in 2022. And despite its efforts to diversify away from China, critical segments of the Indian economy remain highly dependent on China: for example, imports from China account for 100 per cent of India's active pharmaceutical ingredients (API) and 86 per cent of the solar equipment for its ambitious renewable energy programme.

India's trade tensions with the US, driven in part by industrial policies in both countries, have eased recently. For example, India retaliated against US tariffs on steel and aluminium (levied in 2018) by imposing import tariffs of its own. Several cases were brought to the WTO. These disputes have since been resolved, the last six during the G20 summit in September 2023. Similarly, India's willingness to transition from its digital services tax to the G20 global tax framework prompted the US to terminate its Sec. 310 tariffs against India. But in other areas, tensions persist. In 2019, the US removed India from the GSP, US service exporters continue to face market access restrictions in India, the US continues to restrict work visas in IT to protect its workers, and both nations differ on how to protect intellectual property rights.

India's ability to diversify away from China and to find a foothold in global and regional supply chains by encouraging FDI has been hampered by its trade and investment policies that have always been protectionist but have become even more so in recent years. To encourage domestic manufacturing and attract FDI, India recently introduced a production-linked incentive scheme which provides financial incentives to 14 sectors. Moreover, India appears unwilling to participate in multilateral regional trading arrangements such as the CPTPP or the RCEP, and has even opted out of the trade pillar in the US-driven Indo-Pacific Economic Framework (IPEF). Some have pointed to the G20 proposal to build an India-Middle East-Europe Economic Corridor (IMEC) as a promising development that will compete with China's BRI by connecting India with the Middle East and Europe. Even if IMEC were to be built (a questionable proposition),[19] a precondition for its success would be a reduction in the anti-export bias inherent in Indian trade policies.

Southeast Asia[20]

Southeast Asia's domestic or international economic policies have seen little change since the US and EU introduced their 'new' industrial policies. The reason is simple. Unlike other countries in Asia, the ten member countries of ASEAN have benefitted from these actions. ASEAN's shares in the imports and exports of China and the US have climbed. Vietnam saw its share of high-tech exports to the US double after the US imposed tariffs on high-tech imports from China. Partly responsible were multinationals and Chinese firms relocating to Vietnam to evade US tariffs levied on imports from China.

16 Not only does China command a dominant global market share in these two critical minerals, but also in rare earths (defined as the lanthanide series of elements together with yttrium and scandium), graphite, fluorspar, bismuth, magnesium, barite, silicon, and vanadium – as well as in cobalt, nickel and lithium through strategic investments in the Democratic Republic of Congo, Indonesia, Australia, Argentina, and Zimbabwe. It accounts for 80 per cent of global output of solar panels, has become the second-largest producer of electric batteries, and controls the supply chain in many critical materials used in EVs.

17 For example, the 2010 collision of a Chinese trawler with a Japanese coastguard cutter near the disputed island of Senkaku led the Chinese authorities to impose a ban on rare earths exports to Japan. Japan followed this by nationalising the Senkaku Islands which prompted a two-year diplomatic freeze by the Chinese.

18 There appears some evidence, however, that Japan is marginally diversifying away from China in non- strategic sectors like textiles, footwear, and home electronics.

19 Quite apart from the economic viability of the proposed IMEC project, financing for the project is expected to come from the G7's Partnership for Global Infrastructure and Investment (PGII), a $600 billion initiative for which funds have yet to be mobilised.

20 For the purposes of this conference, Southeast Asia could be considered to comprise the ten member states of the Association of Southeast Asian Nations (ASEAN). Timor Leste, located geographically in the region, can be excluded for three reasons: it is not a member of ASEAN; its GDP (in current dollars) is a quarter the size of Brunei's, ASEAN's smallest economy; and economic data on the country are scarce compared with the other countries in the region.

Indonesia has been another beneficiary. Chinese nickel producers were quick to invest in nickel smelters and stainless-steel production in Indonesia, partly driven by Indonesia's export ban on nickel ore but also to gain an advantage over competitors from the advanced economies. Chinese companies are now investing further upstream in battery and EV production. US investors, on the other hand, have been deterred from investing in Indonesia by the Inflation Reduction Act which requires that critical minerals for battery production are either to be sourced domestically or from FTA partners – which excludes Indonesia. Indonesian requests to the Biden administration to give tax credits for Indonesia nickel exports to the US have received no traction.

Technology policies in Southeast Asia have also remained largely unchanged. The region has sought to acquire rapidly improving Chinese technological capabilities to expand its transport, green energy, and ICT infrastructure. The Chinese have offered technologies close to the global frontier for the high-speed rail in Laos and Indonesia. Green energy projects – batteries in Indonesia, solar panels in Malaysia, EVs in Thailand – are increasingly dominated by Chinese investors financed by Chinese state banks.[21] Finally, digital platforms and ICT infrastructure using Chinese technology (the product of China's industrial policies) is now widely embedded in most Southeast Asian economies. Moreover, China's participation in the RCEP and many ASEAN-related organisations (where the US is largely absent) provide it a front seat to engage Southeast Asian countries in developing common standards for the exploding digital economy in the region, such as for ICT equipment, the burgeoning e-commerce sector, cross-border provision of digital services, and digital payment systems.

Korea and Taiwan

Korea and Taiwan face similar challenges in reacting to the industrial policies of the advanced economies and China. Both owe a large part of their success to their very tight integration with the Chinese economy. For example, China is Korea's largest market, especially for semiconductors, and its largest source of intermediates to its manufacturing sector; and Taiwan, the world's largest manufacturer of semiconductors, has more than half its cumulative stock of FDI (over $200 billion) in China, 30 per cent of which is in ICT. The pandemic may have paused the integration process, but momentum was restored soon after.

The close integration between Korea and Taiwan with China has meant that US tariffs, sanctions, export controls, and investment restrictions have affected Korean and Taiwanese companies operating in China. Both countries would like to see their facilities in China be exempted from the Chips Act, but the US refuses, as it considers these facilities important conduits for illegal technology transfers to China. For Korean and Taiwanese investors, moving out of China imposes costs: China's "Made in China 2025" requires a presence on the mainland to access the Chinese market; and relocating out of China could erode the competitive edge that made them globally competitive. At the same time, both countries wish to align their policies with the US because they need its security umbrella. The highly constrained options facing Korea and Taiwan make both these economies the proverbial grass beneath two fighting elephants.

A Glimpse Into the Future

Industrial policies in advanced economies are likely to stay, but they are also likely to evolve. Of concern are the externalities such policies would impose in the future on Asian EMDEs.[22] Three trends are already discernible.[23]

The first is the increasing stringency with which industrial policies in advanced economies will be implemented. The 'new industrial policies' – especially those aimed specifically at China such as the Chips and Science Act – are a recent phenomenon and bureaucracies in advanced countries are still translating legislation into regulations, programmes, and enforcement actions. The effects on Asian EMDEs will increase with time, placing pressure on them to accelerate existing responses and devise new ones. Northeast Asian investments in China are collateral damage of US industrial policies, and those seeking to diversify away from China will need to find new pathways to international competitiveness by exploiting intensive as well as extensive margins in different locations. Southeast and South Asian economies with the most conducive policies and connective infrastructure will be best positioned – like Vietnam – to attract firms and industries relocating away from Northeast Asia.

The second is the possible evolution of advanced technologies into two distinct digital platforms that employ different standards – one led by the US (with the support of Europe and Japan) and the other by China – with competition between the two blocs growing in intensity. Given the dual-use nature of such technologies, recruitment of users to each rival platform would expand the economic and strategic power of the promoters.[24] Competition between the two state-promoted platforms will only intensify as AI capabilities grow with the aid of increasingly powerful chip technologies.[25] The high cost of digital infrastructure will force Asian EMDE governments to eventually decide which

21 They include electric car giant BYD, battery maker Contemporary Amperex Technology (CATL), solar panel producer JinkoSolar, and wind turbine manufacturer Goldwind.

22 There is considerable debate in the US, for example, on 'place-based industrial policy' to overcome regional divides and tap under-utilised capacity in local communities. Similarly, there is debate on increasing subsidies to strengthen the care sector (childcare, care for the elderly and mental health patients). But such industrial policies would arguably have no externalities for EMDEs.

23 There are, of course, more than three. A trend not mentioned are industrial policies in support of material science research on finding substitutes for scarce critical elements in battery manufacture such as cobalt, graphite, and lithium. Another is restrictions on the movement of highly skilled scientists and technologists working at the cutting-edge of developing dual-use technologies (such as quantum computing, nuclear fission reactors and small modular nuclear reactors, robots armed with AI that are also adaptive, mobile, and autonomous, and so on).

24 Dual-use digital platforms, even if owned by private companies, are becoming increasingly interdependent with states seeking to regulate them for security, geo-strategic, and national interest purposes.

25 The power of large language models and transformational capabilities of AI depend on the power of GPUs (graphic processing units) which have the capability of performing several tasks at once. The market is currently dominated by NVIDIA (80 per cent) and AMD (Advance Micro Devices). GPUs are far more powerful compared to the older CPU (central processing units)-based technologies.

platform to opt for. Legacy investments, the costs of new systems, and assessments of each platform's long-term capabilities will be critical factors in the decision.

The third is increased emphasis that advanced economies will place on the clean energy transition and climate change mitigation. An instrument likely to become more widespread is the carbon border adjustment mechanism,[26] forcing a choice on Asian EMDEs to either be more aggressive in their clean energy transitions or risk losing their competitiveness in advanced country markets.

Issues for Discussion

The Asian EMDEs, exhibiting an enviable growth and development record, were the developing world's star economic performers of the past half-century. This was aided by an increasingly open industrial and trading system helped by a largely rules-based global economic order underpinned by certain shared policy directions and global institutions like the WTO and the Bretton Woods organisations. They are now being confronted by a significant policy shift among AEs toward industrial and trade policies that are more defensive and protectionist than before. Since Asian EMDEs still have a considerable development distance to traverse, what should be the features of new growth policy paradigms they should follow in the coming years in a possibly fragmented global economy?

With increasing rivalry between the US and China, equal access to the markets and technology of China and the Western AEs is becoming increasingly difficult, and Asian EMDEs must start choosing the sources and destinations of their trade, foreign direct investment, and technology flows. How should they respond? What issues should they take into consideration when deciding which policies would serve them best in the long term? Here are three issues for discussion that could be considered by conference participants:

- First, are the current policy responses among Asian EMDEs appropriate in the current context?
    - Given the heterogeneity among Asian EMDEs, should such policies have features with broad applicability, or will they need to be very country-specific?
    - In many Asian EMDEs, the policy response has been to keep policies unchanged, forcing the private sector to adapt to the surge in advanced country industrial policies without government support. Is this the right approach?
    - What can Asian EMDEs learn from each other's policies and their economic consequences?
- Second, what industrial policies, if any, should Asian EMDEs adopt themselves in response to those being adopted in the world's largest economies? Should they be similar in nature to the AE policies, or should they take into account their own particular growth and development objectives?[27]
- Third, contingent upon scenarios of the future, how can the Asian economies position themselves today to best deal with advanced countries' industrial policies of tomorrow?
    - A scenario worth considering is the possible escalation in industrial policies, leading to more and deeper externalities on the global economy.
    - What optimal policies could Asian EMDE governments introduce to help the private sector adapt with as little disruption as possible?
    - How could Asian EMDE supply chains be made resilient to withstand any broadening or strengthening of the new industrial policies?

26 While US policymakers are considering this, a prerequisite will be the introduction of a domestic carbon price or carbon tax imposed equally on domestically produced and imported carbon.

27 Studies estimating the positive effects of industrial policies fall short of determining causality and often overestimate the effects. A recent paper found that while optimally designed industrial policies could have non-trivial effects, they were unlikely to be transformative. See Bartelme, Dominick, Arnaud Costinot, Dave Donaldson, Andres Rodriguez-Clare. 2021. "The Textbook Case for Industrial Policy: Theory Meets Data", University of California, Berkeley working paper, November 2021 https://dave- donaldson.com/wp-content/uploads/BCDR.pdf

Chairperson's Remarks

Byung-il Choi

Good morning. I am Byung-Il Choi, and I am the moderator for this final session. We have arrived at the final day and final discussion sessions on the topic of what you can do with new industrial policy. This session is appropriately titled "New Growth Policy Paradigms for Asia in a Fragmenting Global Economy". While in the past few days, we have been discussing, do we have evidence of real fragmentation that is dividing the world into two opposing camps for certain aspects of de-risking? While a definitive answer remains elusive, this session, expertly curated by Vikram, has illuminated the critical crossroads at which Asia stands.

Vikram's insightful framing reminded us of the historical context shaping our current reality. He mentioned "China 2025" because in the past few days, we mainly talked about industrial policy, mainly about the US, EU, and advanced countries. But when you recall the early days of how it began, I think we need to go back to 1999 when the US decided to accord China normal trade relations. That's how China was able to accede to the WTO in 2001, ever since we have seen the rise of China. But there were very important underlying assumptions on each side. From China's side, they said it was the peaceful rise of China until they hit a certain status. So, if you follow Deng Xiaoping's very famous phrase, "you need to hide your strengths and bide your time until you are strong enough to contest the global stage and to avenge past humiliations." On the other side of the equation, the US thought if China traded with the West, China would slowly shift to a softer authoritarian regime. It was not just about the economy alone. From the beginning, it has been about the political economy.

Today, it's evident that these assumptions have been fundamentally shaken. There was a time when we saw the two rival candidates in the US—Hillary Clinton and Donald Trump—both speak of China as a rogue state. I think the contest has been ongoing ever since.

This contest between the West, led by the US, and the East, led by China, will continue to shape the global order, assuming, as Vikram mentioned, that a lot of countries in these regions—Southeast Asia and India—will stay neutral, sitting on the fence without taking sides. But assuming that the time will come, especially in the high-tech area, where it has huge security implications, then, assuming we have two different incompatible technology ecosystems, what is going to be the choice of ASEAN? What is going to be the choice of India? I think India and Japan have already decided; I think Korea is still hesitating, but depending on when the choice becomes very clear. And Taiwan has already decided. So, I don't think we have a one-size-fits-all reaction to this very important question. Asia, with its vibrant tapestry of cultures and economies, will likely react not with a monolithic voice but rather with a multi-faceted, "neon-coloured" spectrum of approaches. But a time will come—that means you cannot have your cake and eat it too. With that in mind, we have two prominent scholars and two discussants.

Professor Mari Pangestu's insightful presentation powerfully reinforced this reality. She brought to the fore the dynamism and ambition that characterise the Asian region, particularly highlighting India's burgeoning role on the global stage. This sparked a compelling recollection on my part. Over two decades ago, I attended a workshop in Budapest, where experts were presented with a seemingly simple question: which nation—China or India—would rise to become the next IT powerhouse? Well, can you guess what the response was from those 15 or so participants? Without any hesitation, it was unanimously India. Because a lot of them were economists, political scientists, sociologists, and intellectuals, their framework was that there is a contest between liberal democracy and authoritarianism. IT means creativity, imagination, non-interference, and inspiration. The question is obvious. I have thought about this question for the past 15 years. It looks like the winner was China. And now the story is getting interesting because, in Silicon Valley, all those big tech firms are assigning and appointing Indians as CEOs. The discussions that followed, particularly the nuanced perspective offered by Bibek Debroy, provided insight into India's evolving position within this intricate global landscape.

With that, we are about to close our session. As the moderator, I would like to share what has been regarded as conventional wisdom in different parts of the world. One, it is quite obvious that fighting is about to take place, and you have to join the winning side. I think it is when you come back to Vikram's question if the event is that the world is going to have two incompatible technological standards—say 6G or something like that—and the choice is inevitable. Then I think some hearsay in this room is that we still refuse to take a stand. I think that is quite interesting. With that, I would like to conclude the session. Thank you for your active participation. Thank you very much.

PAPER 1

Navigating New Industrial Policies: Southeast Asian Perspective

Mari Elka Pangestu

Introduction

The aim of this paper is to examine how new industrial policies in advanced countries impact Southeast Asia, and how Southeast Asian countries should best navigate and respond to these changes. The global setting is that the rise of new industrial policy by advanced countries is likely to continue, with legitimate strategic objectives but coloured by geoeconomics, geopolitics, and technology competition.

The paper starts with a review of how industrial policy has been used by developing countries in Southeast Asia as part of their industrialisation and development strategy over the last three decades.[1]

The second section reviews the new industrial policies in advanced countries and their impact on Southeast Asia, and how Southeast Asia has responded to these shifts. The focus is on three areas of the new industrial policies: responding to perceived unfair trade and competition (general and specifically vis-à-vis China); green industrial policy; and technology and national security in the case of dual-use technologies such as advanced semi-conductors.

The final section looks ahead, and asks how Southeast Asian economies could best respond at the national, regional, and global levels.

I. The Before: Industrialisation in Southeast Asia and the Role of Industrial Policy

Southeast Asian economies have achieved high growth rates in the last three decades by pivoting from import-substitution (in the 1970s) to export-oriented industrialisation (in the 1980s). Import-substitution policies used tariff protection, local content requirements, tax incentives, subsidised credit, and fiscal subsidies. The result was a failure to have internationally competitive domestic firms emerge and an inability to deal with the economic shocks faced in the 1980s. Lacklustre export performance (Indonesia and Malaysia), endemic balance of payments deficits, and high debt service burdens led to IMF structural adjustment packages (Philippines, Thailand) that encouraged the Southeast Asian economies to shift toward export-oriented policies underpinned by foreign direct investment. Multinational companies shifted production to lower-cost Southeast Asian locations, as Northeast Asian countries moved up the value chain and lost their comparative advantage in labour-intensive manufacturing.[2]

1 Southeast Asia is here defined as the 10 members of ASEAN (Association of Southeast Asian Nations): Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.
2 This phenomenon is often referred to as the 'flying geese' pattern of economic development.

The Southeast Asian economies introduced various policies such as special economic zones, tax incentives, and fewer restrictions on foreign ownership for export-oriented firms (Pangestu, 2002; Rasiah, 2020). Trade facilitation measures to ensure the smooth flow of goods and services were also important, such as streamlining customs and the establishment of National Single Windows for the clearance of goods.

Singapore has always been an exception given its size and lack of resources. It promoted labour-intensive, export-oriented FDI from the start and pivoted to capital and technology-intensive industries relatively early. Exports and 'strategic' industries were promoted through financial incentives and government R&D grants and facilities, together with support for continuous industrial upgrading and phasing-out of industries that were no longer competitive (Rasiah, 2020).

Tariff liberalisation under the ASEAN Free Trade Agreement (from 1991) and commitments under the GATT, and then the WTO, since 1995 led to a reduction in tariffs[3] (Pangestu, 2002), as well as eliminated the use of industrial policy instruments such as export subsidies, local content requirements, and import-export requirements for foreign investment. Unlike the time when Korea adopted industrial policies, international commitments under the WTO no longer allowed late adopters (including Southeast Asia) to use such instruments as export subsidies or subsidised export credits. APEC's (Asia Pacific Economic Cooperation) non-binding agreements also played a role in exerting peer pressure and instilling confidence in pursuing open trade and investment policies in the 1990s (Pangestu & Armstrong, 2021).[4]

In summary, due to its later start in industrialisation, the Southeast Asian (SEA) model especially since the mid-1980s was based on open trade and investment underpinned by regional and international commitments and an open, rules-based multilateral trading system. This development model served the ASEAN countries well, accelerating growth and development, and increased intra-ASEAN as well as extra-ASEAN trade and investment (especially with East Asia).

The production network model morphed into a GVC model in the 2000s. Beginning in the early 2000s, China's accession to the WTO and developments in transportation and ICT facilitated the entry of ASEAN economies into regional and global value chains (GVCs). Trade growth in emerging economies since then has largely been driven by GVCs: the share of GVCs in total trade quadrupled between 1990 and 2015, such that by the end of the period more than half the exports from emerging economies were related to GVC participation. East Asia led the world in GVCs and a number of the ASEAN countries were integral to these, due to their competitiveness in processing manufactured goods. In contrast, South Asia has the lowest participation rates in GVCs (Pangestu & Armstrong, 2021).

Southeast Asia's development model was based on export-orientation, integration with the world market, market processes, competition, macro stability (including stable and competitive exchange rates), and a conducive business climate. After the Asian Financial Crisis (AFC) in 1997-98, those fundamentals were considered necessary but not sufficient. New thinking emphasised the importance of strengthening institutions, improving governance, ensuring a level playing field for domestic and foreign investors, increasing public investments in infrastructure and human capital, and addressing inequalities in outcomes and opportunities.

Debates continued, however, on the use of Industrial policy and state-led development strategies needed to correct for negative externalities and market failures. Lessons from the East Asia miracle on the appropriate governance of industrial policies pointed to the importance of efficient bureaucracies and such policy instruments as time-bound and performance-related financial support as well as fiscal incentives for manufacturers. There was also recognition that the success of export-driven strategies needed to be based on ensuring international competitiveness as well as export diversification and upgrading which, in turn, necessitated public investments in quality infrastructure and human capital (health, education and training), and developing eco-systems that fostered innovation (Weiss, 2005). Post-AFC and the entry of China into the WTO in 2001, Southeast Asia's industrialisation and development path was also much affected by the dramatic rise of China.

Notwithstanding the continued rapid growth in Southeast Asia, the Asian Financial Crisis in 1997-98, the global financial crisis in 2009, and the lack of significant industrial and technological upgrading combined to lower the region's industrial growth rate as well as the share of industry in GDP. Rodrik termed this 'premature deindustrialisation' (Rasiah, 2020 Oxford handbook). Rodrik and Stiglitz (2024) argue that an export-oriented and GVC model based on the above fundamentals is a *necessary but not sufficient condition* for sustained development. They argue that sustained transformation requires

3 Under the ASEAN Free Trade Agreement (AFTA) which began in 1991, ASEAN countries were to reduce intra- ASEAN tariffs to zero by 2005, which was accelerated to 2001. Many ASEAN countries reduced intra-ASEAN tariffs but also reduced tariffs overall on an MFN basis. Export subsidies were utilised by Indonesia and other ASEAN countries, for instance, through duty drawback schemes for exporters that gave back more than the duties paid, but were stopped when these countries had to sign onto the then GATT Agreement on Subsidies and Countervailing Measures (later embedded in the WTO agreement) which prohibited the use of export subsidies by countries with per capita incomes above $1,000. Only legitimate duty drawback schemes were allowed. Under the WTO Trade-Related Investment Measures (TRIMs) agreement, trade-related investment performance requirements that discriminated against foreign products or led to quantitative restrictions were not allowable. Thus, countries like Indonesia at the time had to phase out local content requirements and trade-balancing requirements which limited imports related to exports.

4 In 1993, APEC agreed on the Non-Binding Principles of Investment of which national treatment was one of the main principles, and which subsequently influenced the reform of investment policies. Being chair of APEC also led to liberalisation-championing by host countries, such as Indonesia's APEC Bogor Goals of free trade and investment in the region by 2010-20 (for advanced/developing countries) and liberalisation by Indonesia of its foreign investment that year. This was followed by the Philippines tariff liberalisation at the 1995 APEC and there were other examples. In the 1990s, APEC undertook an exercise of highlighting the trade and investment impediments in each APEC country, and set targets for their reduction; a similar exercise was undertaken for Trade Facilitation and targets of reducing measures to enhance cross-border flows. APEC also pioneered the APEC Business Card which facilitated travel within APEC for business travellers.

an industrialisation strategy driven by industrial policies. This is discussed further in the last section of this paper.

II. The Now: Impact of the New Industrial Policies of Advanced Countries[5]

The Setting for the 'Now'

Southeast Asia now faces a different global setting in which the new industrial policies of advanced countries require a rethink of their own development strategies. The current global setting is characterised by 'polycrises' and multiple challenges.

First, is the slowdown in the world economy which is likely to persist, with growth rates expected to be two-thirds or half of pre-pandemic growth levels. This poses challenges for developing countries in achieving the SDGs by 2030 (World Bank, 2023).

Second, the pandemic and the Russian invasion of Ukraine heightened concerns about secure and resilient supply chains. Moreover, most global projections warn of increased frequency of shocks, whether from pandemics, natural disasters (mostly related to climate change), conflicts (contributing to energy and food insecurity, as the Ukraine war showed), and the weaponisation of trade as an instrument of statecraft.

Third is the existential climate crisis which requires ambitious climate action by all, including developing countries where the impact of climate-related events are likely to be greatest.

The fourth challenge is rapid technological change, whether driven by new digital technologies or AI, which risks rendering developing economies internationally uncompetitive even in labour-intensive production.

A larger fifth challenge is the slowdown in hyper-globalisation (as measured by the trade-GDP ratio) since the global financial crisis. Explanations range from maturation of GVCs, considerable localisation in China, and increased protectionism, especially in advanced economies. The pushback against globalisation began after the global financial crisis, after which we have seen the emergence of 'slowbalisation' or, alternatively, a reshaping of globalisation.

Finally, key parts of the 'now' are the geopolitics and geoeconomics around the US-China rivalry and the emerging nexus between economics, security, and technology. A key driver was the unilateral shift in the US administration's trade and industrial policy since 2016 which has weakened the rules-based multilateral trading system. Earlier, the US approach was to internationalise China and make it 'a responsible stakeholder' in the rules-based order. The US policy shift was not dramatic but rather a response to China's application of non-market measures to help it acquire greater global market share. Previous efforts to counter China's non-market measures included use of the WTO dispute resolution mechanism and the completion of ongoing FTA negotiations, especially the Trans Pacific Partnership (TPP) which excluded China and was designed to be the gold standard of trade agreements.

The Trump administration, however, ended US participation in the TPP, renegotiated NAFTA, and hobbled the WTO as it was seen as harmful to US interests.[6] Instead, the US adopted a unilateral approach to addressing a mixed set of perceived challenges such as unfair trade practices, the hollowing-out of US industries, export of US jobs, and the US' narrowing lead in advanced technologies. An executive order identified 16 countries enjoying the largest bilateral trade surpluses with the US and threatened a range of retaliatory trade measures, with China at the forefront alongside ASEAN nations such as Indonesia and Thailand.

The US largely used three policy instruments to address these perceived challenges: Section 301 of the 1974 Trade Act to target a variety of intellectual property, investment and discriminatory practices of China; GSP renewal in the case of Indonesia and Thailand to extract certain policy changes that advanced US interests; and the national security and trade provision of Section 232 of the Trade Expansion Act 1962 to impose a 25% tariff on steel and 10% tariff on aluminium imported from Europe. In addition, since January 2018 the US has imposed tariffs on a wide range of Chinese imports, which have led to retaliatory tariffs by China on a similarly wide range of imports from the US.

Under President Biden, the focus of US trade policy became more domestically oriented. He prioritised the protection of workers' rights, sustainable environmental practices, and initiatives such as the Indo-Pacific Economic Partnership Framework (IPEF) to counter Chinese influence in Asia. More importantly, the Biden administration maintained Trump's tariffs on China and did nothing to roll back the damage done to the WTO dispute settlement mechanism. The TPA, which expired in July 2021, was not renewed, raising questions about US willingness to maintain an open global trading system while improving its governance. Not only that, under Biden the USTR chose to ignore a WTO ruling on US tariffs on steel and aluminum, invoking national security as the key motivation. **In short, trade policy became part of US industrial policy in terms of direction and choice of instruments.**

The Biden administration understandably wants to address rising US income and wealth inequality – driven by the skewed distribution of gains from innovation and growth, declining productivity, and competition from a rising China. But the policy solutions it has adopted have imposed negative externalities on the rest of the world, not just China. In the last few years, US-China relations have been dominated by political and security concerns which have shaped its new industrial policies, in large part to enhance and protect US global leadership in new technologies (especially semiconductor and green technologies) by bolstering domestic investment, cooperating with allies and like-minded countries (friend- or ally-shoring), and restricting Chinese access to the latest dual-use US technologies.

Initial announcements by senior US officials pointed to decoupling from China. This motivated the passage of new industrial policies such as the Inflation Reduction Act (IRA) and the CHIPS Act, as well as the imposition of US

5 Parts of this section draw on Pangestu (2023a, 2023b).
6 The US allowed the appointment of appellate judges in the dispute settlement process to lapse, causing a break in the enforcement of international rules.

investment and export controls. Since April 2023, however, there have been attempts to de-escalate US-China tensions by replacing the term decoupling with 'derisking'. Jake Sullivan has also used the metaphor 'small yard, high fence' to emphasise that derisking is based on security concerns in a few sensitive sectors (the 'small yard') which would be subject to tough scrutiny, controls, and restrictions (the 'high fence').

The reality is that advanced country use of trade policy to achieve domestic industrial policy objectives and industrial policies themselves is likely to affect GVCs, fragment trade, and hurt countries that have in the past benefitted from GVCs but now have to navigate the growing rift between the US and China.

In sum, GVCs should now not only be efficient (just-in-time) but also resilient (just-in-case) to geopolitical shocks, rapid changes in technology, and climate events.

In the next sections, we will look at three sets of industrial policies from advanced countries which have implications for Southeast Asia: trade policy with industrial policy objectives; green industrial policy; and technology-related industrial policy. The main instruments being used are import tariffs, export restrictions, FDI restrictions, technology access controls, directed lending, and industry-specific production and R&D subsidies. Many of these instruments are inconsistent with, or in violation of, the rules-based multilateral trading system and are a sharp departure from the past, when advanced countries created the rules-based trading system and urged its disciplined use by developing countries.

Trade Policy with Domestic Industrial Policy Objectives

Whilst the US goal to contain China's rise preceded the Trump administration, it escalated into a trade war under the Trump administration. Under the banner of 'fair trade', the Trump administration identified 16 countries with the highest bilateral trade surpluses with the US, including three ASEAN countries (Indonesia, Thailand and Vietnam), and subjected them to additional scrutiny. The main instrument used was to hold the GSP hostage to actions to be taken by each ASEAN country.

China had by far the largest bilateral trade surplus, and a broad range of its exports to the US became the target of US import tariffs in January 2018. Initially, targeting specific sectors such as solar panels, washing machines, steel, and aluminum, the scope of tariffs gradually expanded, affecting approximately 66.4% of Chinese exports to the US with an average tariff of 19.3%. In retaliation, China imposed tariffs on 58.3% of US exports to China with an average tariff of 21%. This tit-for-tat escalation resulted in both countries raising tariffs on trade worth $450 billion. The impact on the US economy has been substantial, with tariffs targeting 18% of its imports (equivalent to 2.5% of GDP), while China's tariffs target 11% of its imports (equivalent to 3.6% of GDP). These figures surpass the impact of the 1930 Smoot-Hawley tariffs which targeted 1.4% of GDP.

Trends in US-China trade reveal that by 2022, imports from China had returned to pre-2018 levels. However, US trade actions against China led to a surge in imports from the rest of the world, surpassing pre-2018 levels. Partial decoupling is evident, particularly in goods facing high tariffs. Imports from China of products subject to a 25% duty remain 22% below pre-2018 levels, causing adverse effects on US firms relying on intermediate products crucial for manufacturing. Notable diversions include IT hardware to Mexico and Taiwan, auto parts to Mexico, furniture to Vietnam and Mexico, semiconductors to Taiwan and South Korea, clothing and footwear to Vietnam and Bangladesh, PPE and COVID-19 products to Malaysia and Mexico, exercise equipment to Taiwan, and lithium batteries for electric vehicles to South Korea and Japan.

For products subject to 7.5% tariffs, there is less decoupling, with imports from China being 3% below pre-trade war levels. Non-tariffed products, on the other hand, have seen a surge of almost 50% compared to pre-2018 levels, indicating increased coupling rather than decoupling. This surge was largely the result of increased demand (due to COVID-19) for products such as laptops, computer monitors, phones, video game consoles, and toys. Overall, US imports from the rest of the world climbed by 45%.[7]

For products with higher US-China tariffs, 'bystander' countries increased their exports to the US, barely changed their exports to China, and increased their exports to the rest of the world. In terms of market share gains, Vietnam leads with a 1.9% increase, followed by Taiwan (1%), Canada (0.75%), Mexico (0.64%), India (0.57%), and Korea (0.53%). Other ASEAN countries such as Thailand, Cambodia, Indonesia and Singapore also benefitted but to a smaller degree. These 'bystander' countries have capitalised on the trade diversion occasioned by the US-China trade war, growing their exports to both the US and China and the rest of the world (Fajgebaum et al., 2023). They were able to do so because they were already part of the GVCs and/or part of trade agreements.

The costs of decoupling to the US economy have proved to be extensive, but the lengthening of supply chains has benefitted Southeast Asia. However, this has only been to the extent that the final stage of production (assembly and packaging) has been relocated while the intermediate inputs/components are still imported from China. For IPEF members, which include seven ASEAN countries, import sources and export destinations have become less diversified on average since 2010 with deeper bilateral linkages to China driving the change. While the dependence of IPEF countries on Chinese suppliers has increased, IPEF's objective (as well as that of the G7) is to enhance supply chain resilience with monitoring and coordination, although this runs counter to competitive forces driving these supply chains. Most IPEF countries increased their share of exports to both China and the US, underscoring the importance of access to both major markets and their suppliers (Dahlman & Lovely, 2023). Southeast Asia's supply chain dependence on China turns out to be especially important if the US intends to replace China's role in strategic industries.

7 A detailed analysis of the US-China trade war and its impact on US, China, and by-stander countries can be found in Chad Bown (2022).

Green Industrial Policy[8]

The first-best policy to internalise the negative externalities of CO2 emissions is to ensure that the price of carbon reflects its social marginal cost. This requires, among other things, removing fuel subsidies and imposing a tax on carbon. But for many countries, such policies are neither politically nor practically feasible. As a result, governments worldwide have pursued green industrial policy (GIP) using instruments such as subsidies, tax incentives, infrastructure development, research and development (R&D) support, and regulations to meet their Net Zero commitments. GIP becomes necessary when the market does not work, or at least not well enough to fast-track the green economy transition.

Consider China. Its dominance in clean energy technology and EV supply chains has been driven by its decade-long production subsidies, tax exemptions for EV purchases, state-driven strategic investments, and regulatory framework. Its state-driven clean energy investments, technological development, and market size have lowered wind, solar and battery technology costs to make them competitive with fossil fuels. As a result, in 2021 China had a 70% share in global production of solar panels, 50% in wind turbines, and 90% in storage batteries.[9] Another key strategic area for its investments has been in extraction and processing of critical metals needed for its green transition. Globally, it refines 68% of nickel globally, 40% of copper, 59% of lithium, and 73% of cobalt.[10] This has led to policy responses by the EU and US to protect their green industries through on-shoring or friend-shoring with allies, thereby developing resilient supply chains that do not depend on China. By 2023, the EU Fit for 55 Plan[11] aims to cut GHGs by 55% from 1990 levels. The instruments for this ambitious target include emissions trading system reforms and the carbon border adjustment mechanism (CBAM). Additionally, the EU Critical Raw Materials Act[12] covers 17 (out of 34) economically important and strategic critical minerals to diversify sources of raw materials and technologies for its green transition. The Act aims to transfer 10% of extraction, 20% recycling, and 50% processing to within EU borders, and no more than 65% of EU's annual consumption of any strategic raw material to be sourced from a single third country. These are ambitious targets given the absence of these critical minerals in Europe, the gestation periods of mining projects, and local resistance to mining expansion.

Furthermore, the Renewable Energy Directive[13] only allows renewable fuels of non-biological origin (RFONBOs),[14] which implicitly imposes restrictions on agricultural products like palm oil, a major export commodity of Indonesia and Malaysia that together supply 90% of global palm oil. The two affected countries have formed a joint taskforce with the EU to identify policies that seek to serve the common interests of producing and consuming countries.

Apart from a few states, the US does not use carbon pricing at the national level and relies mostly on tax credits and subsidies. The Inflation Reduction Act (IRA),[15] Infrastructure Investment and Jobs Act, and sections of the CHIPS and Science Act[16] are part of the US green industrial strategy with multiple goals, which are to: (a) achieve ambitious climate goals of 40% reduction in emissions by 2030; (b) boost growth and jobs; (c) counter China's dominance in clean energy technologies and rare earths; and (d) diversify supply chains of clean energy manufacturing, EV batteries and critical minerals. The US Congress authorised $4 trillion in new investments, $500 billion of which was to finance the green transition. The main instruments include extending energy tax credits by 10 years with credits tied to domestic content requirements; five-year production tax credits for clean energy manufacturing; grants for EV factories; and $7,500 rebate for purchases of new EVs assembled in North America with more than 40% minerals extracted or processed within the US (80% by 2027) or by nations which have FTAs with the US.

FTA partners of the US have moved fast to take advantage of this policy. Japan signed a Strengthening Critical Minerals Supply Chain Agreement[17] in March 2023, and the EU is negotiating a similar one. Korea has an FTA with the US and plans to move EV and battery manufacturing to the US, although China's supply chain dominance may prevent any quick relocation. But US legislation does provide a loophole for Korean EV producers who do not meet local content requirements: businesses would still be allowed to receive tax credits provided the EVs are leased to customers, which allows car dealers to pass on their tax savings to individuals. This effectively permits Korean EV manufacturers (and perhaps other FTA partners who do not meet local content requirements) to access the US market, albeit solely through car leasing companies.[18]

Developing countries have also adopted green industrial policies, using policy instruments very similar to those in the US and EU, except for subsidies because of limited fiscal space. Indonesia, for example, banned the export of nickel ore to increase downstream value added in ferro nickel and stainless steel. Indonesia's export values jumped from $3 billion to $30 billion. Subsequently, Indonesia combined export restrictions, domestic supply obligations, local

8 This section draws on Pangestu and Xu (2023b).
9 https://www.woodmac.com/press-releases/chinas-renewables-boom-year-poses-major-challenges-to-western-markets/
10 https://www.brookings.edu/wp-content/uploads/2022/08/LTRC_ChinaSupplyChain.pdf
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15 https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/
16 https://www.whitehouse.gov/briefing-room/statements-releases/2023/08/09/fact-sheet-one-year-after-the-chips-and-science-act-biden-harris-administration-marks-historic-progress-in-bringing-semiconductor-supply-chains-home-supporting-innovation-and-protecting-national-s/
17 https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2023/march/fact-sheet-agreement-between-government-united-states-america-and-government-japan-strengthening
18 See Congressional Research Service (2024) for a detailed explanation of this policy loophole.

content targets, and tax incentives to encourage investments in industries further downstream with the ultimate aim of making it an EV production hub. The continued use of coal rather than renewable energy for processing nickel and production along the EV supply chain, however, affects how 'green' this policy is.

EV exports from Indonesia and other developing countries, however, will face formidable barriers in advanced country markets. Moreover, the IRA discourages US companies from investing in nickel smelting in Indonesia by denying them tax rebates on their US exports. This is not, however, preventing US companies (Ford and Stellantis, for example) from locating battery production in Indonesia for export to third-country markets. Indonesia's request to sign a critical minerals agreement with the US has so far not met with a positive response.

Indonesia's other trade and investment policies appear to oppose its 'green' industrial policies. For example, investments in renewable energy have been discouraged by local content requirements for solar panels and EV batteries, fossil fuel subsidies, and low feed-in tariffs for renewable energy. The social tension between local and immigrant labour is another unintended consequence of its 'green' industrial policy. At this point, it is hard to acknowledge that Indonesia's GIP is 'green' when the environmental and social implications appear not to be addressed yet. A more in-depth analysis of costs and benefits is certainly needed.

Technology

The CHIPS and Science Act 2022 restricts US companies from exporting advanced dual-use technologies, including advanced computing chips, to China. Its budget of approximately $280 billion is designed to support the growth of the domestic semiconductor industry. The US has also pressured other countries to do the same; Japan and Netherlands have agreed to tighten export controls of chip manufacturing equipment and technologies to China. Chinese semiconductor companies no longer have access to equipment for the manufacture of the most advanced chips. While strengthening domestic manufacturing of advanced chips in the US, the CHIPS and Science Act has exacerbated the dependency of Asia-based technology companies on China for their supply of chips. Key growth products dependent on the latest chips include automotive applications as the primary driver of semiconductor revenue, followed by wireless technology, IoT, cloud, and AI sensors/MEMS. Exports of electronics and machinery exports to the US from China and ASEAN declined after passage of the CHIPS Act and IRA. Some segments of the semiconductor value chain (largely packaging and assembly) have been relocated, mainly to Singapore and, to some extent, Malaysia.

III. The After: How Could and Should SEA Economies Respond?

The preceding section described the expanded use of industrial policies in advanced economies and the US-China trade and technology war, and examined their consequences for Southeast Asia. The use of industrial policy by China and the advanced countries will likely expand in the coming years and we may even see the US unilaterally close its markets. Trump has announced that, if elected, he would impose a 10% tariff on all imports across the board and a 60% tariff on imports from China.[19]

Developing Southeast Asia should not react with retaliation, protection, and the proliferation of industrial policy (EAF, 2024; Irwin, 2023). Instead, Southeast Asia needs multi-pronged national, regional and global development strategies to navigate the new industrial policy landscape and sustain their development progress. Certainly, there is room to use industrial policies provided the lessons from the past are incorporated in their implementation.

The reshaping of global value chains provides opportunities in many sectors such as semiconductors, green technologies (including renewable energy), electric vehicles, and critical minerals. McKinsey (2020) uses firm surveys to estimate that 16-26% of global exports ($2.9 trillion-$4.6 trillion in 2018) could be affected, whether that involves import substitution, nearshoring, or offshoring to new locations.

Sectors where value chains are likely to be affected most are pharmaceuticals, apparel, and communication equipment. Labour-intensive value chains such as furniture, textiles and apparel are already experiencing shifts away from their current top producers (in particular, China) where the cost of labour has climbed.[20]

Value chains in the global innovations category (semiconductors, automotives, aerospace, advanced machinery, telecommunications, and pharmaceuticals) are most likely to be targets of government intervention given their strategic importance – but the economic case for shifting these value chains to new locations is low. The automotive industry already has intricate and regionalised value chains and it is estimated that 15-20% of export value has the potential to shift, driven predominantly by non-economic factors. As for semi-conductors and US-designed advanced chips, manufacturing is highly concentrated in South Korea and Taiwan. While economies of scale and high barriers to entry leave little incentive for semiconductor production to relocate, new industrial policies in the US and EU are potentially shifting an estimated 9-19% of global trade flows.

As for other sectors less affected by new industrial policies, there are growing opportunities for growth whether by increasing productivity, moving up the value chain, or/and increasing the share of modern services (especially with the application of modern digital technologies).

To leverage these opportunities, Southeast Asian economies need to adopt strategies at the national, regional, and global levels.

19 In comparison, the US Smoot-Hawley tariff was 20% across-the-board and not only triggered trade wars but also exacerbated and prolonged the Great Depression (EAF, 2024).

20 In 2005, China exported 71% of the finished apparel goods it produced, but only 29% by 2018. Apparel and textiles feature the highest proportion of trade that could feasibly shift due to economic factors (36-57% in apparel and 23-45% in textiles); some might nearshore in US and EU markets, but most are likely to shift to Southeast Asia (McKinsey, 2020).

National Response: Old Wine in a New Bottle

To benefit from the relocation, diversification and reshaping of GVCs, basic fundamentals at the national level will still matter – markets and competition, macroeconomic stability, openness to trade and investment, flexible factor markets, public investment in infrastructure and human capital, equality of opportunity, and effective government.

Rodrik and Stiglitz (2024) make the argument that the traditional formula of getting the fundamentals right is necessary but not sufficient; structural transformation will also be necessary for sustained development based on increasing value-added in existing sectors and growth in new ones. They also argue that the manufacturing sector, while important, will not provide the transformative changes needed to create adequate employment opportunities and ensure sustained economic development. What is needed, according to them, is some form of industrial policy either in new areas of growth such as climate transition or the growth of modern services (or both). Industrial policies will also be needed to reduce the concentration of value chains linked to China by encouraging investments in 'sensitive sectors' such as semiconductors and green technologies (including renewables and critical minerals).

Green industrial policy would be a fertile area for reform in Southeast and South Asia. The urgency and scale of decarbonisation in Asia is clear, especially considering the region is continuing to grow and already accounted for 53% of the global CO2 emissions[21] in 2021. Since COP26, many of these countries have set their Net Zero targets,[22] including Vietnam for 2050 and China, Indonesia, and India for 2060.

First and foremost, national policies will need to ensure that the price of carbon reflects its long-term social marginal cost. This would require politically difficult decisions to eliminate fuel subsidies and coal price caps,[23] raise feed-in tariffs for renewable energy to realistic levels, establish emissions trading systems and/or introduce carbon taxes, retire legacy investments in coal-fired power plants, and improve energy efficiency, among other things.

Finally, à la Tinbergen, a single GIP instrument should not serve multiple objectives. Subsidies and tax credits could support innovation, manufacturing capability and diversification, but job creation would require skills upgrading and complementary human resource development policies. Furthermore, all the lessons learned about the principles of good industrial policy should also be adhered too, such as ensuring the policies are well targeted and transparent to minimise state capture by vested interests, contain clear performance requirements and sunset clauses, and most importantly, that there is administrative capacity in the implementing institutions.

Regional Response

A regional strategy will be needed to complement national strategies to better capture greater benefits from shifting global trade, investment, and technology flows. Options would include deepening FTAs – within ASEAN and between ASEAN and its major markets (RCEP, CPTPP, bilateral ASEAN-EU, and ASEAN-US FTAs); limiting trade agreements with the US, EU, and Japan (covering critical minerals, for example); strengthening trade facilitation to lower trade costs; and responding proactively and coherently to US and EU initiatives (IPEF, EU Indo-Pacific strategy). These initiatives will need to focus on making regional value chains more resilient to frequent geoeconomic shocks, and maintaining engagement with China as appropriate while increasing cooperation with the US and EU.

ASEAN could also use its heft to negotiate financial support for the green transition in its member countries, transfers of green technologies and capacity building from the AEs, phase in responses to perceived carbon leakages, and help its members fashion responses to CBAMs in advanced economies and the need for limited minerals trading agreements with key trading partners. There are signs of ASEAN cooperation in renewable energy such as realisation of the ASEAN Energy Grid, with recent initiatives of exports of clean energy from Laos to Singapore and from Riau Islands in Indonesia to Singapore.

An ASEAN regional strategy will need to recognise that China is positioned to be the largest beneficiary of RCEP15, even in the context of the ongoing trade war. Although the RCEP is expected to offset only about one-third of the negative effects of China's trade war with the US, it is anticipated to enhance China's prospects for regional leadership. In stark contrast, India is projected to be the biggest loser from Asian trade agreements. While a trade war could potentially increase income for India, its absence from CPTPP and RCEP is expected to diminish those gains. However, there remains an opportunity for India to regain potential gains by seeking entry into these FTAs, becoming a constructive participant in APEC, and fashioning its own bilateral FTAs (including deepening the ASEAN-India FTA) and investment treaties with its principal trading partners.

Global Response

If ASEAN were one economy it would have a combined gross domestic product of about $2.6 trillion, making it collectively the third-largest economy in Asia and the seventh-largest in the world. It could constructively use this heft to acquire greater agency in shaping the emerging global economic agenda. Achieving this would require fashioning a common ASEAN position on key global trade, investment, and technology issues such as: investment facilitation of investment; e-commerce;[24] cross-border digital finance; regulations governing the cross-border delivery of services; plastics pollution; the introduction of carbon border adjustment mechanisms; the multi-party interim appeal arbitration arrangement;[25] trade-related climate measures; fuel subsidy reform; and so on. These are initiatives as well as ongoing negotiations at the WTO, and

21 https://globalcarbonatlas.org/emissions/carbon-emissions/
22 https://zerotracker.net/
23 Coal price caps are an important distortion in Indonesia.
24 Including, among other things, the free flow of data across borders, data localisation, and customs duties on electronic transmissions.
25 This relates to ongoing discussions within the WTO to provide an alternative dispute resolution mechanism for WTO members in the absence of a functioning Appellate Body.

Indonesia and ASEAN can play a major role because it is in their economic and political interest to have a continued open and trade investment global order.

IV. Conclusions

The main conclusion, is that given the global challenges, there are challenges but also opportunities to transform the development strategy of the Southeast Asian countries. An open trade and investment regional and global order is still a priority and ASEAN has the middle power potential to take a lead and benefit from the reshaping of regional value chains which are more resilient, take advantage of the opportunities for diversification as well as new growth areas such as green transition and services, and moving up the value chain. This requires national policies that enable such a transformative development strategy and if there is use of well-targetted industrial policies, adherence to the principles of good industrial policy will be important. It will also require ASEAN to strengthen and expand existing regional FTAs and frameworks, as well as to play a role in ensuring that the multilateral rules or principles-based global economic order remain an anchor, whilst adjusting to new realities.

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Discussant Comments

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This paper is timely and relevant as global interest in industrial policy has been revived, with global value chains being realigned amid geopolitical tensions. Trade diversion and the relocation of industries have continued since 2017, when US-China trade and tech wars erupted, resulting in rising de-globalisation. The impacts are felt on developing countries as multinational companies redirect trade and investments to countries that are considered allies or friends with their country of origin. This has resulted in trade diversion and friend-shoring from China or other countries. In Asia, developing country beneficiaries from the supply chain realignment include India, Vietnam, Indonesia, and Thailand.

Nevertheless, in the increasingly de-globalised global economy with many uncertainties and risks looming, developing countries in Asia should pursue further trade and investment integration in order to reduce risks from production or demand disruptions. This includes greater integration between India and the Southeast Asian countries. India, for example, is competitive in technology products and services and can increase these exports to Southeast Asia.

Technology plays an important role in the new industrial policies as modern industries utilise a greater number of technology products and services, such as semiconductors and digital and telecommunication services. This underscores the increasing importance of supply chain resilience of these products and services in India and Southeast Asia amid geopolitical tensions. Most Southeast Asian countries are users of technology services particularly digital and telecommunications systems. As these systems are increasingly divided between the US and Chinese camps, telecommunication connection between the two camps will become increasingly difficult and may require users to adopt both systems in the future. This will raise costs to countries and firms. Hence, future industrial policies must take this into consideration.

New industrial policies also need to consider the promotion of green industries or reduction in greenhouse gas emissions. This has strong links to trade, investment, and technology. Regulations such as the European Union's Carbon Border Adjustment Mechanism (CBAM), domestic standards, and demands from consumers, investors, and multinationals are examples of pressures for production to become greener, in order for businesses to be competitive and sustainable in the future. Industrial policies therefore need to take into consideration Scopes 1, 2, and 3, which include the reduction of carbon emissions from electricity and supply chains, especially small and medium enterprises. Moreover, industrial policies around new products that have low carbon emissions, such as electrical vehicles, sustainable aviation fuels, and others that are derived from plants through bio-technology such as plant-based proteins, cosmetics, and biodegradable containers, will enhance trade and investments of these industries. Lastly, industrial policies should also promote the use of technologies such as digital technologies and artificial intelligence (AI) that can enhance productivity, while reducing waste and carbon emissions of products and services.

PAPER 2

Japan and India in the Deglobalising World: Geopolitics, Democracy, and Industrial Policy

Takatoshi Ito[1]

Abstract

The emergence of new industrial policies in numerous countries can be attributed to two pivotal factors: the global economy's fragmentation, which has been accelerated by intense US-China competition and the West's sanctions on Russia following the Ukrainian invasion, and the race towards CO2 reduction. The global economy is now gravitating towards fragmented blocs, namely the democratic West, the authoritarian China-Russia sphere, and the neutral Global South. This fragmentation has led to the relocation of investments and the formation of strategic alliances. Notably, some countries in the Global South, such as India, have reaped benefits from this fragmentation by expanding their trade with both the West and the China-Russia sphere. However, in a fragmented world, individual countries' efforts to curb CO2 emissions may not lead to globally optimal resource allocation. In the long run, large countries in the Global South may find themselves at a crossroads, torn between aligning with the West or with the China-Russia sphere.

Acknowledgment

I am deeply grateful for the invaluable insights shared by Montek Ahluwalia, Vikram Nehru, Rakesh Mohan, and Danny Quah during the Neemrana conference, 'New Growth Policy Paradigms in a Fragmenting World Economy: Impact of New Industrial Policies' in March 2024. Their comments on the conference version have significantly improved this paper.

Introduction

The new industrial policies in many countries have two origins: fragmentation of the global economy and the race to CO2 reduction.[2] Fragmentation has accelerated due to US-China competition and the West's sanctions on Russia after the Russian invasion of Ukraine. The global economy is divided into the democratic West, the authoritarian China-Russia sphere and the neutral Global South. Fragmentation leads to on-shoring and friend-shoring investment. Some countries in the Global South, including India, have benefitted from fragmentation by increasing trade with both the West and the China-Russia sphere. In a fragmented world, individual countries' efforts to reduce CO2 emissions will not result in globally optimal resource allocation. In the long run, large countries in the Global South may face a challenging decision, torn between the West and the China-Russia sphere, which could significantly impact their future.

Industrial Policies: Old and New

Old Industrial Policy in Asia

Industrial policy was quite common in Asia in the 1950s through the 2000s. In East Asia, the government pushed particular industries to gain competitiveness in the global economy. The industries were chosen based on the

1 The earlier version was submitted to the CSEP 2nd Annual Conference, India in Asia: Deeper Engagement. Session 5: "New Growth Policy Paradigms for Asia in a Fragmenting Global Economy: Impact of New Industrial Policies. March 1-3, 2024.

2 To be precise, the reduction is expressed in greenhouse (GHG) gas in the official UN document. However, since CO2 is most of GHG, CO2 is used in this paper.

country's technological capabilities and resource constraints at the time of policy planning. Using industrial policy, many East Asian countries decided to climb the ladder of industrialisation, from light to heavy industries, including steel, cement, and automobiles, to electronics, optical, and precision instruments. Exports of these goods were promoted to earn foreign exchange that was then used for investment into and imports of natural resources. The old industrial policy in East Asia succeeded partly because exports were the judge of a policy's success (World Bank, 1992). Once a leading country, namely Japan, climbed a step up the ladder, its followers climbed up a step at a time. The role of government was to make available limited resources, such as foreign exchange and low-interest loans, to promote particular industries which change over time, and to allow private companies to compete for domestic and export markets. Most of the investment was financed by domestic savings in Japan, Korea, and Taiwan. Large companies led investment and growth in Japan and Korea. Such a mix of guiding policies and private sector competition was used in Japan in the 1950s and 1960s, and South Korea, Taiwan, and Hong Kong in the 1970s and 1980s. In the 1980s and 1990s, some of the other ASEAN countries joined in the climb up the ladder, and this process was termed the 'flying geese pattern' (Ito,1992, chapter 2; Ito, 1996; Ito, Isard & Symanski,1998).

China joined this form of industrialisation in the 1990s. It invited foreign direct investment, and asked foreign companies to form joint ventures with Chinese companies to enable more rapid technological transfer. Joining the WTO in 2001 also helped China increase its export, as it could avoid high tariffs of importing countries. A massive inflow of foreign investment combined with the large Chinese workforce, and the apparently endless internal migration from rural areas to the cities kept wages low. China leapfrogged the industrialisation ladder rather than climbing it one step at a time. It quickly became the foremost producer and exporter of many industrial goods, from low-tech to sophisticated high-tech.

India has been conspicuously absent from the list of flying geese countries. After it became independent in 1947, its economic policies followed Soviet-style socialism, and some industries, such as banking and airlines, were nationalised. It adopted a policy of import substitution rather than export promotion, and its government promoted heavy industries instead of labour-intensive industries. In the 1950s, its large and increasing population, part of the poverty trap narrative, was regarded as a hindrance to economic development. India underwent a brief period of economic reform following its balance of payments crisis in 1991, which coincided with the collapse of the Soviet Union. However, reforms stalled, and the economy did not take off in the second half of the 1990s and 2000s. Panagariya (2025) ascribes this reversal to the socialism ideals ingrained in Indian policymakers.

Most Western economists have been sceptical of the role of the government and the flying geese model in general. However, in the face of the clear divergence in economic growth and development between East Asian countries and other regions, a persuasive argument for the role of the government can be made (World Bank, 1992). The best theoretical defence of the role of government in the East Asian economic miracle is as the principal coordinator of the allocation of scarce resources (capital and technology) when there are scale economies with demand spillovers (Murphy, Shleifer & Vishny, 1989).

New Industrial Policy

In this subsection, I will argue that two types of new industrial policy have emerged since the mid-2010s: defensive new industrial policy that tries to minimise the negative effects of decoupling and deglobalisation; and offensive new industrial policy that tries to accelerate decarbonisation.

Since the mid-2010s, there have been several important global trends. First is the China factor. The country's rapid rise in military and industrial power has put the US and Western allies on the defensive. Its authoritarian regime, which increased the concentration of power of Xi Jinping, has been extending its sphere of influence. This has raised alarm bells in some cases among the Western and neighbouring countries. Since China has become the primary trading partner for many countries, including the US and Western countries, severing trade ties with China over concerns about political and military challenges has been considered impossible. However, a gradual reduction in reliance on exports to and imports from China has begun. More drastically, trade in high-tech semiconductors and mobile devices, and the machine tools used to make them, has been drastically reduced.

Second is the COVID pandemic and the disruption of supply chains. In the first year following the outbreak of COVID, the production of many manufacturing goods fell due to disruptions in supply chains. China introduced one of the harshest city lockdowns under its 'zero-COVID' policy. Factories shut down, and transportation suffered significant delays. Other glitches in transportation occurred globally.

These two trends are behind the movements towards 'on-shoring,' 'near-shoring,' and 'friend-shoring.' For example, in 2023, Mexico became the primary origin country of US imports, replacing China. The US and Japan decided to provide huge subsidies to semiconductor makers to invest in their countries; some critics have labelled these subsidies, along with the US' CHIPS Act, as protectionist.

Third is the Russian invasion of Ukraine. Without any provocation from Ukraine, Russia invaded Ukraine on February 24, 2022. The initial invasion of the Ukrainian capital was resisted, and fighting still continues in the eastern and southern regions of Ukraine. The Russian action was condemned in the UN General Assembly, but this did not stop Russia from continuing to advance to taking control of the eastern region. The West imposed severe trade and finance-related sanctions on Russia, which included selected trade sanctions and a freeze on Russia's central bank assets, such as foreign reserves, in Western countries. They excluded major Russian banks from the SWIFT network, essential in international bank transfers. Russia turned to China and other countries that did not participate in the West sanctions for trade and financial settlements. China provided access to CIPS, which could act as an alternative to SWIFT and the dollar-denominated USD clearing system, CHIPS (Clearing House Interbank Payments System). Russian military ties to China and North Korea became stronger.

A consequence of the Russian invasion

and the Western response was an acceleration of the fragmentation that started with the first and second factors described above. Ties between Russia and China strengthened. The Russia-friendly nations, some of which are a legacy of the Cold War, and the China-friendly nations may join together to form a loose economic and political bloc. The fragmentation or deglobalisation due to the three factors mentioned above is hardly good news for the global trading system and growth.

A new industrial policy has been adopted to address issues arising from fragmentation, such as subsidies for inviting cutting-edge semiconductor factories (on-shoring) and for R&D research for security-sensitive industries. There is no deep theory of new industrial policies for deglobalisation. The higher priority given to national and economic security justifies higher government spending, mostly financed by government bonds in many countries, including the US. A defensive policy is a new industrial policy to minimise or address the damage in trade and output from decoupling and deglobalisation.

Fourth is raising awareness and fighting against global warming. As more scientific evidence mounts and an increasing number of 'extreme weather' events occur, more people, young to old and rich to poor, and more firms, large and small, are eager to contribute to activities with less CO2 emissions. Countries impose direct controls, introduce price incentives, and give outright subsidies, which can be regarded as the second reason for new industrial policy. The only shortcoming is that these efforts to reduce CO2 emissions may not contribute to the CO2 reductions needed to stop global warming.[3] Moreover, voluntary targets expressed by individual countries under the Paris Agreement may not be achieved. Developing and emerging market economies have a target year of net zero later than the advanced countries. There is no penalty for not achieving the self-declared intermediate or final targets of net zero. The amount of CO2 reduction may not be fair to countries that have already reduced CO2 emissions, or to latecomers who have not emitted much CO2 in the past but hope to achieve high economic growth. Typically, China, India, and other emerging market economies fall into the latter category. This is one of the reasons that China and India are allowed to have their peak CO2 emissions and net zero target years much later than advanced countries.

Climate is the ultimate global public good. No one can claim property rights to the atmosphere, and clean air consumption (replacing it with CO2) cannot be monitored and stopped easily. The theory of public goods offers several ways of addressing the issue of a shortage of public goods (in this case, lower CO2 emission). To efficiently reduce the amount of global 'bad,' the Global Consortium or governments, or COP (UN Climate Change Conference), should intervene in one or more of the following ways: (a) direct control of or a quota for CO2 emission in all countries – a la the Kyoto Protocol, but with universal coverage; (b) taxation on the bad (CO2 emission), namely carbon tax/pricing with a globally uniform tax rate; (c) subsidies to directly reduce CO2 and to conduct R&D into reducing CO2; and (d) allowing negotiations between those affected by climate change and those affecting climate by emitting CO2, which in the case of global warming is unrealistic.

Theoretically, the efficient allocation of resources (atmosphere within the CO2 limit) can be achieved by any of the above options (the Coase Theorem). However, the consequences of income and cost distributions cannot be determined by theory. Economists typically favour a carbon tax/pricing solution. A globally efficient reduction in CO2 emissions will be achieved with an appropriate uniform carbon tax rate (or its variant) across countries and industries (see, for example, Chateau et al., 2022; Arimura & Sugino, 2021).

Fragmentation Into the Three Blocs

Fragmentation of the global economy started with US-China 'competition,' or as some prefer to call it the 'de-coupling'. The US gradually changed its view of China from a partner for global growth to a source of concern and risk. Many events contributed to this shift in the US, and to a lesser extent European, view of China: China's aggressive assertion, its building of man-made islands with military bases, its sovereign claim over the South China Sea, application of the National Security Law in Hong Kong crushing the democratic movement, the One-Belt-One-Road initiative that created a debt trap for some developing countries, its 'Made in China 2025' and Anti-espionage Law (2014), and its application to arrest foreign nationals in China. The consolidation of power with President Xi Jinping by removing the presidential term limit also made clear to the West that China was different and would not change easily. Those who believed that China would promote free speech and democratic political processes as its income levels rose were completely disappointed and discredited by actual developments.

US perceptions of a heightened geopolitical risk resulted in the Trump administration imposing high tariffs on imports from China and the Biden administration restricting US exports of high-tech products, like cutting-edge semiconductors, to China.

Fragmentation of the global economy entered another, more serious, stage when Russia invaded Ukraine on February 24, 2022. The US and its Western allies imposed financial and other sanctions on Russia. Major Russian banks were excluded from the SWIFT system. Russia's central bank assets held in Western allies' financial institutions, including their central banks, were frozen. Imports of Russian goods, like oil and gas, were either banned or severely restricted, and Western companies in Russia exited in a hurry.

The West's sanctions on Russia pushed the latter to rely on China for exports, imports, and economic services. Being excluded from the SWIFT system, Russian banks started using CIPS, the Chinese interbank messaging service, to transfer money. China did not criticise the Russian invasion of Ukraine, and abstained from the UN General Assembly resolutions which criticised Russia. A China-Russia sphere was formed with countries that rely on Russian arms and Chinese direct investment, exports, and imports.

Oil and gas prices soared because of fears that the amount of Russian pro-

3 According to Maizland (2023), "The policies of Paris signatories as of late 2022 could result in a 2.7°C (4.9°F) rise by 2100, according to the Climate Action Tracker compiled by Germany-based nonprofits Climate Analytics and the NewClimate Institute."

duction would reduce total supply. This later turned out to be false, as countries that did not support the West's sanctions imported Russian oil and gas.

These developments related to China and Russia prompted companies in the Western alliance to reduce the risks of operating in these two countries by investing domestically (on-shoring) or in friendly countries (friend-shoring). Some of the policies applied for on-shoring and friend-shoring could be considered new industrial policies.

China has grown to be the primary export destination and/or primary import source for many countries. It is unrealistic to imagine that trade with China will evaporate in a few years. Still, Mexico has become the main source for US imports, replacing China for the first time in 20 years.[4] However, foreign investment in China is declining quickly; a net capital outflow was recorded in the third quarter of 2023.[5]

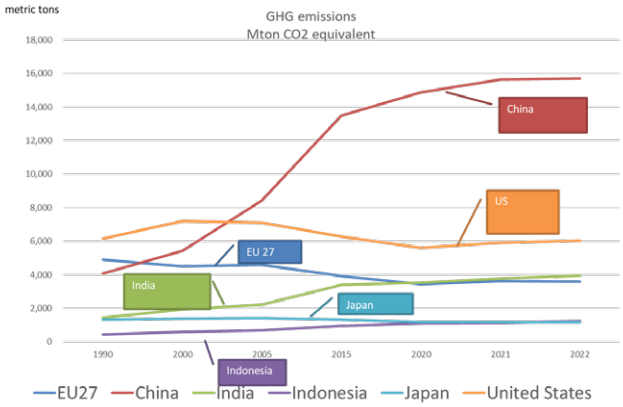
Some countries do not belong to either the West or the China-Russia sphere. Many of these are developing and emerging market economies, and they continue to trade with China and Russia.

So, the fragmented world is divided into three groups: the Western allies; Russia, China, and their closest allies; and the Global South. Countries of the Western allies are almost all democracies, and countries in the China-Russia camp are almost all authoritarian. Some countries in the Global South are beneficiaries of trading with both the West and China-Russia. One such country is India. India is a member of the Shanghai Cooperation Organisation (SCO), a security alliance led by China, and at the same time a member of the Western Quadrilateral Security Dialogue (the QSD or QUAD). It has benefitted from cheap oil from Russia and political courting from Japan and the US. India and other Asian countries have maintained a relationship with Russia and the US, and they do not need to come down from sitting on the fence. India is a genuine democracy but is not fully committed to the Western allies. More analysis of fragmentation will be done in a later section.

Decarbonisation

Many countries use policy tools—regulation, taxation, and subsidies—to meet their self-imposed Greenhouse Gas (GHG) emission reduction goals. Most of the West, including Japan, the US, and most European countries, is committed to achieving zero net carbon emissions by 2050, and the recent trend in their emissions is a downward slide. China and India target 2060 and 2070, respectively. Past trends of the top emitters in 2022 are shown in Figure 1. China and India have not crested their respective emission path. In other words, their emissions have been increasing in recent years and will continue to over the next several years at least. The targets and projections remain highly uncertain.

Figure 1: GHG Emissions: Top 5 Countries and EU27



The global climate affected by accumulated GHGs is an ultimate international public good. Individual countries' efforts may not be sufficient as externalities are not internalised. The Paris Agreement set self-declared targets for each country's emissions. If all countries adhere to their targets, a climate disaster may be avoided, but achieving net zero by 2050-70 may not be guaranteed yet.

The most effective way to reduce CO2 emissions would be a carbon tax that penalises industries with large CO2 emissions, combined with subsidies to ease the transition pain. New green industrial policy favours companies that contribute to reducing CO2 emissions and punishes those that continue to emit CO2 using various policy tools. This should be commended from the viewpoint of a global fight against global warming. However, global warming and more frequent extreme weather are global public goods problems. One country or region (such as the EU) cannot solve the global warming problem. Factories in countries and regions that introduce tough environmental regulations and high carbon tax rates would be disadvantaged by the higher production costs they face in global industrial competition. To make the playing field level, at least within the borders of high-tax countries, those with higher carbon taxes would like to introduce border adjustments. This should be defendable as long as the green industrial policy with border adjustment is implemented with transparency and in a non-discriminatory manner.

Analysis of Fragmentation

It is difficult to clearly define geopolitical fragmentation. It is also difficult to quantify which country is close to the West and which is not. Sometimes, actions may differ from the rhetoric. One litmus test can be the voting in the UN when serious conflicts arise between the West and its adversaries.

Russia invaded Ukraine on February 24, 2022. In the following months, the United Nations General Assembly passed six resolutions blaming Russia in an attempt to restrain it, as shown in Table 1.

4 New York Times, "For First Time in Two Decades, U.S. Buys More From Mexico Than China," February 7, 2024. https://www.nytimes.com/2024/02/07/business/economy/united-states-china-mexico-trade.html#:~:text=New%20data%20released%20on%20Wednesday,Beijing%20are%20altering%20trade%20flows.
5 Nikkei Asia, "Foreign investment in China turns negative for first time: Money flows out of country on concerns over U.S. tensions, anti-spy laws" November 4, 2023. https://asia.nikkei.com/Economy/Foreign-investment-in-China-turns-negative-for-first-time

Table 1

UN Resolutions on the Russian invasion of Ukraine March 2022-March 2023	
–March 2, 2022. Resolution A/ES-11/1 "Aggression against Ukraine"	• Yes 141; No 5; Abstain 36; Non-voting 12
–March 24, 2022. Resolution A/ES-11/2 "Humanitarian consequences of the aggressions against Ukraine	• Yes 140; No 5; Abstain 38; Non-voting 10
–April 7, 2022. Resolution A/ES-11/3 "Suspension of the rights of membership of the Russian Federation in the Human Rights Council	• Yes 93; No 24; Abstain 58, Non-voting 18
–October 12, 2022. Resolution A/ES-11/4 "Territorial integrity of Ukraine: defending the principles of the Charter of the United Nations	• Yes 143; No 5; Abstain 35; Non voting 10
–November 14, 2022. Resolution A/ES-11/5 "Furtherance of remedy and reparation for aggression against Ukraine"	• Yes 94; No 14; Abstain 73; Non voting 12
–March 2, 2023. Resolution A/ES-11/6 "A comprehensive, just and lasting peace in Ukraine based on the principles of the Charter of the United Nations	• Yes 141; No 7; Abstain 32; Non voting 13

Source: Author's creation. Data source: United Nations.

In these resolutions, "Yes" implies siding with the West, blaming Russia for its actions; "No" indicates siding with Russia to oppose the resolution. Although many countries voted "Yes" in all six resolutions, some countries switched between "Yes" and "Abstain," or "Abstain" and "No." For example, China abstained in the first four resolutions but voted "No" in the last two resolutions. India consistently abstained from all six resolutions.

To aggregate the number of UN votes, "Yes" is converted to "1," "No" is converted to "-1," and "abstention" and "non-voting" to "0." Countries with a score of 6 are the Western countries and their allies. The higher the negative value, the closer is a country's ties to Russia. Belarus, North Korea, Russia, and Syria scored -6; Eritrea scored -5; Nicaragua scored -4; and Mali scored -3. The category of -2 includes the Central African Republic, China, Cuba, Ethiopia, Iran, and Zimbabwe.

Now, what motivates countries to vote one way or another? There are at least three possible motivating factors. A hallmark of the West is democracy and respect for rule of law. The US, European countries, and Japan share the values of democracy, so it is a decisive uniting factor in defining solidarity with the West. The second factor is exports from the country in question to the West vs. to Russia and China (R&C). If the country heavily depends on R&C as its export destinations, this may discourage it from blaming Russia in the UN. The third factor is the country's imports from R&C. If some crucial commodities, such as military equipment and energy sources, are imported from R&C, it may influence the country's decision on the UN votes.

It is difficult to define how much a country is committed to institutionalising or practicing democracy. We rely on an aggregate index of democracy calculated by independent institutes, specifically, the index quantified and published by the V-dem Institute. Here, we use the Liberal Democracy Index (LDI) score and the Electoral Democracy Index (EDI) score.[6] We are interested in a correlation (and causation) between the democracy index and UN voting behaviour. To make a possible causal relationship between democracy and UN votes, we take the democracy index for 2021 and examine whether it has an explanatory power for voting behaviour in 2022-23; then, democracy may be a factor in deciding the voting in the West.

Figure 2 shows the relationship between the LDI in 2021 (on the horizontal axis) and the UN vote score in 2022-23 (the vertical axis). The tendency of more democratic countries to vote "yes" to the six resolutions is evident from the upward-sloping relationship of the dots. The democratic countries think alike and express their voices. India abstained from all six votes to earn "0" for the UN votes. This is rather low on the UN score for the level of democracy. Only one country (Bolivia) with a comparable democracy index voted "no" once for the UN resolutions, and six countries (Armenia, Mongolia, Namibia, South Africa, Sri Lanka, and Tanzania) which have a higher democracy index than India abstained from all six resolutions like India. Put differently, India is one of seven countries that abstained from all six resolutions or voted "No" for the maturity of democracy.

Figure 3 shows the relationship between the EDI and UN vote scores. Its observation is essentially the same as Figure 2.

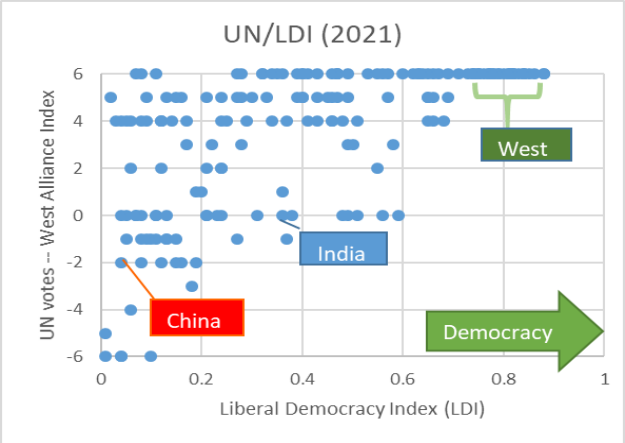
Another factor that may influence UN voting behaviour is trade relationships. When a country has strong export and import ties with Russia, it may hesitate to vote "Yes," blaming Russia. We first calculate exports (and imports) to G7 countries and to R&C, then divide the exports (and imports) to the G7 and R&C by the total exports (and imports). Then, these G7 and R&C ratios are defined for exports and imports. By subtracting the R&C ratio from the G7 ratio, the net G7 exports (and imports) index is obtained.

Figures 4 and 5 show the scatter diagram of net G7 exports (and net G7 imports) and the UN vote scores. The correlation between the UN vote score and trade is less obvious than the correlation with democracy. In exports, India is more inclined to trade with the G7 than with R&C. However, in terms of

6 The EDI measures the principle of electoral or representative democracy, including whether elections were free and fair, as well as the prevalence of a free and independent media. This index is part of all the other indices as a central component of democracy; The LDI incorporates measures of rule of law, checks and balances, and civil liberties along with the concepts measured in the electoral democracy index.

imports, India's imports from G7 are about the same as its imports from R&C. These two figures show that trade relationships are not as crucial in choosing the West.

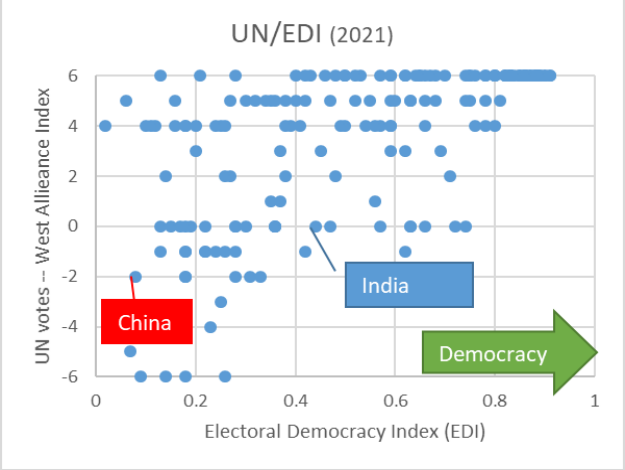
Figure 2. Correlation Between UN Votes and the Liberal Democracy Index (LDI)



Source: Author's creation.

Data: United Nations and V-dem Institute.

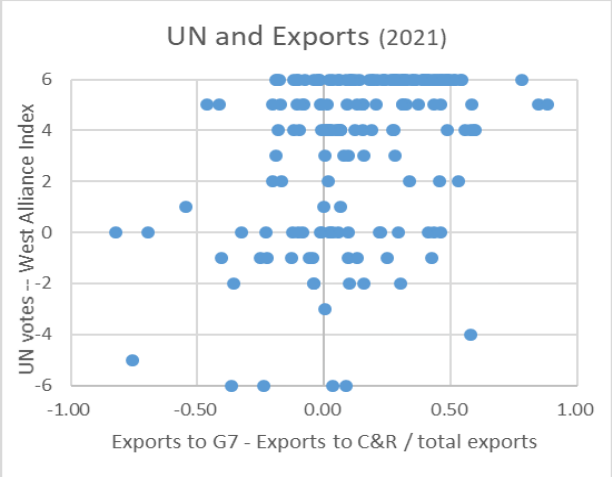
Figure 3. Correlation Between UN Votes and the Electoral Democracy Index (EDI)



Source: Author's creation.

Data: United Nations and V-dem Institute.

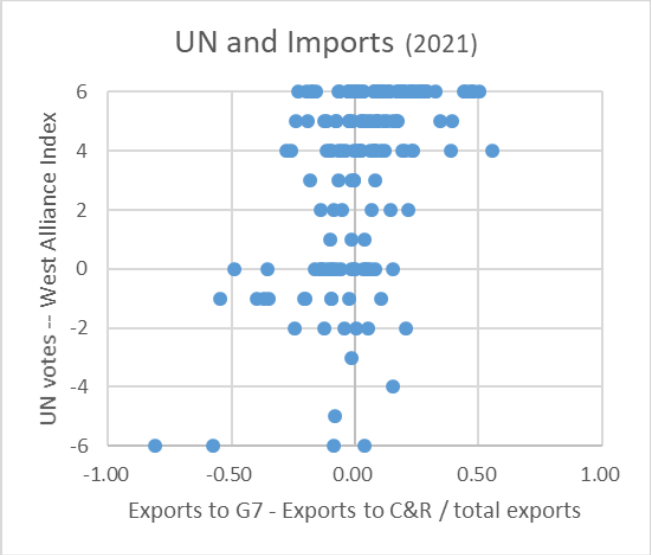
Figure 4. More Exports to G7 (as opposed to R&C) and UN Votes



Source: Author's creation.

Data Source: IMF Direction of Trade and United Nations.

Figure 5. More Imports From G7 (as opposed to R&C) and UN Votes



Source: Author's creation.

Data Source: IMF Direction of Trade and United Nations.

Regression

In order to quantify the observations made in the preceding section, UN votes are regressed on the LDI and the export ratio to the West for a sample of 171 countries where both indices are available.

Observations from Figure 2 reveal that the relationship between UN votes and democracy may be nonlinear. We try the following specifications:

$$\mathrm{UN}_i = \beta_1 \mathrm{LDI}_i + \beta_2 (\mathrm{LDI}_i)^2 + \beta_3 \mathrm{Export}_i + \beta_4 \mathrm{Import}_i + \varepsilon_i$$

Where index *i* denotes a country; UN is the UN index defined above; LDI is the LDI democracy index; Export is the export ratio to the West less the export ratio to R&C; and Import is the import ratio from the West less the import ratio from R&C.

(Eq.1) assumes $\beta_3 = \beta_4 = 0$.

(Eq. 2) assumes $\beta_4 = 0$.

(Eq. 3) does not constrain any coefficient.

The estimation results are shown in Table 1.

Then, for each equation, Eq. 1—Eq. 3, the eight countries with the largest residuals are identified. The list is identical for all specifications. These countries did not vote "Yes" considering the value of the democracy index. Put differently, these countries are surprisingly not siding with the West, given their reasonably high democracy index. Table 2 shows such a list.

Table 2 provides evidence for the narrative in the preceding section. Along with the other seven countries, India did not vote "yes" for any of the six UN resolutions. These countries' behaviour is a surprise considering the maturity of their democracies.

Table 1. Estimation Results

	Eq. 1			Eq. 2			Eq. 3		
	Coefficient	Sig.	T-stat	Coefficient	Sig.	T-stat	Coefficient	Sig.	T-stat
LDI	41.4	***	21.3	40.5	***	20.8	40.2	***	19.8
LDI^2	−34.5	***	−12.1	−34.3	***	−12.2	−33.7	***	−11.2
Export				2.2	**	2.5	2.5	**	2.4
Import							−0.9		−0.6

*Notes: *** denotes significance at 1% level; ** at 5% level.*

Table 2. Countries With the Largest Negative Residuals

Country	Eq. 1	Eq. 2	Eq.3
Armenia	−6.3	−5.2	−5.5
Bolivia	−5.6	−5.6	−5.7
Burkina Faso	−5.9	−5.6	−5.5
India	−4.4	−4.6	−4.7
Mongolia	−6.0	−3.8	−4.0
Namibia	−6.1	−5.2	−5.2
South Africa	−6.4	−6.4	−6.5
Sri Lanka	−4.7	−5.4	−5.7

Decarbonisation Will be a Challenge For All

The West can boast solidarity in geopolitical fragmentation. However, divisions among the Western countries—the US, EU, and Japan, among others—are acute in policy toward decarbonisation and how to implement green industrial policy. The fundamental problem is that the efforts of the Western countries would not be enough to stop the atmosphere's temperature from rising beyond 2 degrees Celsius, as it is a global public good. Large non-West emitters of CO2 are China now and India in the future.

Under the Paris Agreement, countries have agreed to reduce GHG emissions according to their self-declared schedules with a target year of net zero. How they achieve their targets is left to the individual county.

Europe has implemented a carbon tax and is ready to introduce a carbon border adjustment mechanism (CBAM) in order to prevent other countries from being free riders. Some parts of Japan have introduced carbon pricing, but it is ineffective because of its sub-regional mechanism. Japan should seriously think of introducing a full-fledged carbon tax.

There are several challenges for Northeast Asia and South Asia. Among others, Japan's green industrial policy should be strengthened for its own benefit. It should hasten the introduction of a carbon tax so that it would be exempt from extra tax when European countries impose extra fees under the CBAM.

Japan has insisted on transition finance, and financing technology and factories that reduce CO2 emissions from coal-burning factories. If this is recognised as part of green finance, it would help the Japan-India green tie since Japan can help India accelerate its efforts to achieve its own target of net zero emissions by 2060.

In the US, a major risk is the presidential election of 2024. If Trump wins, and the country repeats what it did during the first Trump administration – it will pull out of the Paris Agreement. The Trump administration would also encourage fossil fuel production by relaxing environmental regulations.

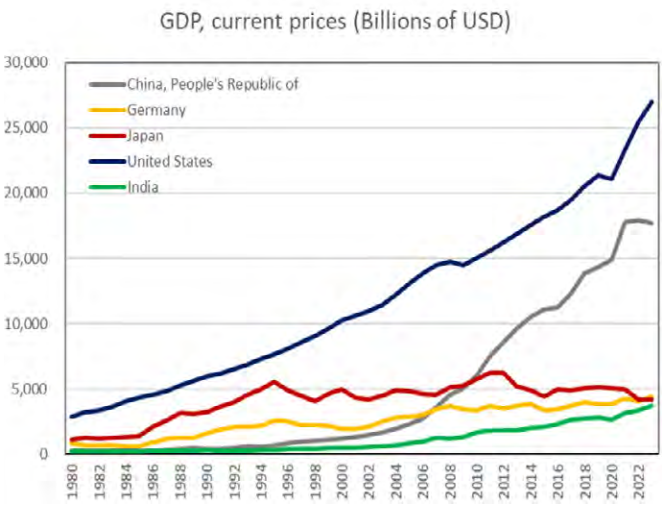
India

India is a key player in the geopolitically fragmented world, and can tip the balance in the geopolitical conflict. Along with China, India is a key country in the global efforts toward decarbonisation. It should be a leader in the Global South in moving ahead with the decarbonisation race, otherwise it could become the largest GHG gas emitter in the 2050s.

India's steady growth in the last decade has been remarkable. It is estimated that it will overtake Japan and Germany in the late 2020s, becoming the third-largest economy in the world (see Figure 6). Whatever India does regarding geopolitics, growth, and decarbonisation will profoundly affect the courses of global growth and global warming.

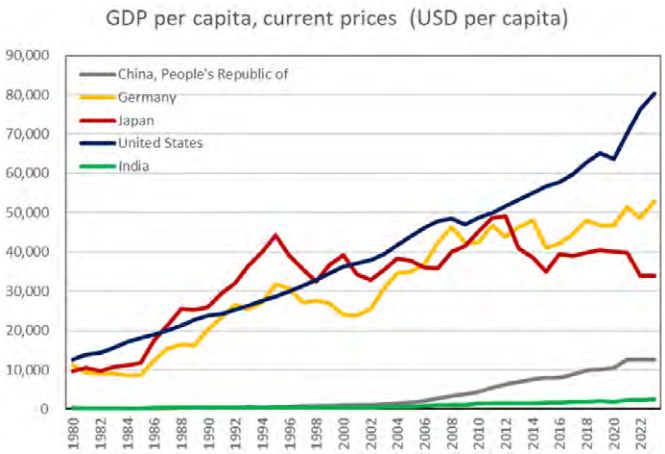
It has been pointed out that although India could be the third-largest economy, its per capita income still lags behind (see Figure 7). This was also a concern in China a few decades ago. Greater productivity increases in its manufacturing sectors are necessary to lift India's average households to prosperity. Inviting foreign direct investment and technological transfers from the West may be key for continuing high growth. The remarkable rise of China's per capita income and GDP may be a model.

Figure 6



Source: IMF, World Economic Outlook, October 2023.

Figure 7



Source: IMF, World Economic Outlook, October 2023.

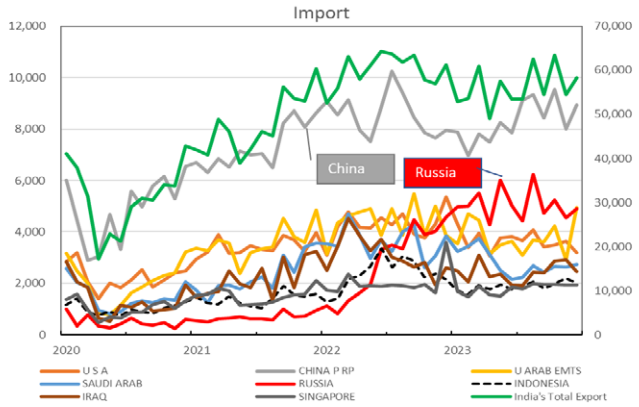
Geopolitical fragmentation is increasingly widening the gap between the West and Russia-China, and India has been sitting on the fence. On the one hand, India shakes hands with Russia and China as it is a member of the BRICS and the Shanghai Cooperation Organization (SCO); on the other, it belongs to the QUAD (US, Japan, Australia, and India) for security dialogue in the Indo-Pacific area. In June 2023, Prime Minister Modi was invited for a four-day state visit to the US, and was invited to address the US Congress, for the second time since he became prime minister. In July 2023, he was invited to the G7 in Hiroshima, Japan.

One tangible benefit of sitting on the fence for India has been a sharp increase in its oil and gas imports from Russia. India maintained neutrality in the geopolitical fragmentation and did not participate in sanctions against Russia. Russian oil and gas, shunned by the West, found in India a customer, which the latter could purchase at supposedly bargain-low prices. Figure 8, which depicts India's monthly imports between January 2020 and December 2023 clearly shows a sharp rise in its imports from Russia after March 2022, to 5-6 times the 2021 level.

Imports from China and Russia totalled a quarter of India's total imports, but India's primary export destination is the US, followed by the UAE. Its exports to China have declined since 2021. India's stance of sitting on the fence is evident in its trade structure: it imports from China and Russia but exports to the US. It is a bit surprising that its ties to Southeast Asia are rather weak both in imports and exports.

There are tough questions that India has to answer in the coming years. How long can it remain on the fence? Wouldn't being a member of both the SCO and QUAD eventually cause a problem? Wouldn't relying on imports from Russia and China pose some risks in the future? Moreover, when it pushes its agenda of a new industrial policy in green transformation, would it be better to rely on Russia and China or cooperate with the West? It has been argued that India needs to improve its infrastructure, relax regulations on doing business, and achieve inclusive growth; would it be better to rely on Chinese loans for infrastructure improvements or come up with its own financial resources, including issuing infrastructure bonds?

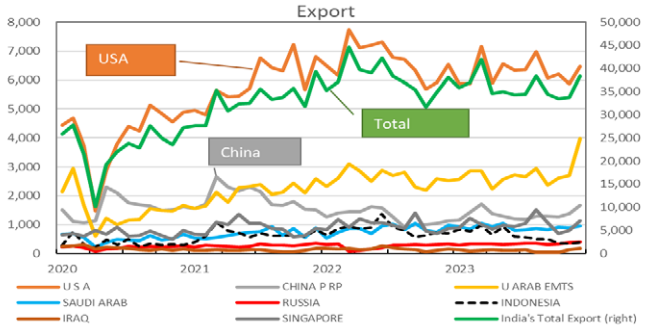
Figure 8. India's Imports by Origin Country



Source: Author's creation.

Data: Department of Commerce, System on India's Monthly Trade.

Figure 9 India's Exports by Destination Country



Source: Author's creation

Data: Department of Commerce, System on India's Monthly Trade

Concluding Remarks

India will play a pivotal role in the 'competition' between the West and China and the military conflict between Russia and the West. Along with China, India is crucial to achieving the global goal of net zero emissions of CO2 in time.

In the positive analysis of how countries voted in the UN resolutions criticising Russia for invading Ukraine, India was an outlier: its voting with the West is low, considering its reasonably high scores in democracy. It deviates from the correlation line between democracy and UN votes. This is consistent with the narrative of its sitting on the fence.

Although a normative analysis is not intended here, India has to choose the right course of action in the fragmented world in the future. If and when it climbs off the fence, would it land on the side of the West? How it will achieve decarbonisation without hurting its economic growth may depend on its new industrial policy. Would it employ industrial policies with direct controls or with market-based incentives? Cooperation with the West may increase the probability of successful decarbonisation.

Developing more political and economic relationships with Northeast and Southeast Asian countries will also benefit the Indian economy. Joining RCEP and CPTPP would be the obvious first step. Enhancing cooperation with Japan will also be crucial, as the two economies complement each other: Japan has a declining population, but India still has a popu-

lation pyramid with a large young population; Japan is more advanced in decarbonisation technology and infrastructure, from which India can benefit greatly. As India is solicited by many countries for economic partners due to its economic size and its leading tech sector, it has the luxury of choosing its partners. It is important it takes advantage of its favourable position to enhance its growth and decarbonisation.

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Discussant Comments

Bibek Debroy

Good morning, ladies and gentlemen. I agree with Professor Ito that we should not waste time thanking people, but I would like to briefly express my gratitude to Rakesh, Laveesh, and CSEP.

Across various sessions, we have discussed similar issues, resulting in some overlap. I am confident CSEP will continue these conferences and, at some point, employ adaptive AI to revise papers as they are presented. Many of the issues raised by Professor Ito were addressed by Dr Jaishankar in the Q&A session, so we have already explored these topics.

I thoroughly enjoyed reading Professor Ito's paper, which is based on two premises: fragmentation and CO2 emissions. From my perspective, the paper reminds me of Mercator maps. While we are accustomed to them, they show distortions, such as displaying Africa, Asia and the Pacific, and Australia as smaller than they are.

The fragmentation described by Professor Ito focuses on the US–China relationship. However, from an Indian perspective, fragmentation began much earlier. It started with the end of the Cold War, whether we date it to 1989 or 1991. It coincided with the global growth engine shifting to the Asia-Pacific and Africa. It stemmed from the West's failure to recognise the shifting power centres, leading to a retreat from globalisation and a return to protectionism long before recent events.

Professor Ito mentioned old industrial policies. They are important historically, but they became somewhat irrelevant due to WTO disciplines. The premise of these policies was export promotion, import substitution, and TRIMs. However, the WTO agreements on subsidies and countervailing measures prevent the use of local content requirements and export subsidies. This is an issue India has faced while trying to implement the Production-Linked Incentive (PLI) scheme, discussed earlier.

Professor Ito also mentioned global public goods. We have the West, a paragon of democracy; Russia and China, representing autocracy; and the neutral Global South. India, however, is expected to bear the burden of delivering these public goods. But who defines what constitutes a global public good?

We often use the term "public good" loosely, and not necessarily in the strict economic sense defined by Samuelson. If we consider positive externalities, we find such benefits from switching to a metric system, something the US hasn't done, or from having uniform power sockets worldwide. These are also global public goods.

More importantly, should we not be discussing the institutions responsible for delivering these public goods, such as the WTO and the IMF? Shouldn't we talk about reforming these organisations, represented here, and consider the US and Europe relinquishing control over them?

Does the UN deliver public goods? If so, should we not discuss the contributions of various countries to the UN, not just the General Assembly but the broader organisation? The US has repeatedly defaulted on contributions to the UN. While it no longer defaults, we should remember the scale: last year, the US contributed $3 billion to the UN, while the New York Fire Department budget was $2.2 billion.

The case against India on the global stage is often based on voting in the General Assembly, especially after the Russian invasion of Ukraine in February 2022. India has consistently opposed cross-border use of force, whether in Ukraine, Iraq, or Gaza, and whether the matter is taken up in the General Assembly. To understand India's performance, we need to track its actions back to the 1950s, and we will find that a consistent pattern emerges.

The argument against India also relies on two particular indices: the V-Dem index and others. India gained independence in 1947 and became a republic in 1950. Unlike many countries with separate heads of state and government, India has both functions combined in one person. We often forget that cross-country perception indices involve value judgements. From a democratic perspective, one of the key variables should be whether the head of state is elected or not. Why should that not be a variable?

This would significantly change our perception of democracy worldwide. Most people aware of India will know that it has been a democracy except for the brief aberration of the Emergency in the 1970s. However, last year's V-Dem index shows a deterioration in India's standing comparable to that during the Emergency. Though we may want to look into the questions asked, and the sample size and design, V-Dem doesn't provide these details. It only mentions anonymity, meaning we don't know if individuals like Vikram Nehru participated. We have a right to know, for transparency's sake, about the sample size and design, which V-Dem fails to disclose. Therefore, I am extremely sceptical of using such indices.

On CO2 as digits, the *Kyoto Protocol,* Jeffrey Sachs and his colleagues routinely track what different countries have done. India's relative performance has been far better than that of several other countries. We can discuss the costs of technology and India's role in the International Solar Alliance. Last year, 40% of India's energy addition was from renewables, as Nitin Desai mentioned at this conference. It's not just energy, but biodiversity as well. Earlier, I mentioned New York. Do you know how many electric buses New York has? Only 15. Delhi has 1,050, and within three years, India will have 50,000 electric buses.

Let me quickly highlight some issues related to India's new industrial policies. The digital public infrastructure mentioned earlier is based on the premise of market failure, including the fact that the cost of private capital is often higher than the cost of public capital. Private capital struggles to sustain itself during economic downturns. There's a recognition of increasing returns to scale. India's 1948 and 1956 industrial policy resolutions were based on arguments regarding what should be reserved for the public sector and what for the private sector. Today, the debate centres on what exactly to do, assuming we want an industrial policy. Should we implement sector-specific policies, which could distort resource allocation based on static comparative advantage, or should we focus on broad-based infrastructure capital investments? How do we approach regulation in this context? This brings me back to the question of global public goods. If we examine jurisprudence across jurisdictions, we see significant differences in how the US, EU, and Asia approach these matters—for example, AI regulation. This highlights the fact that we will never achieve consensus on what constitutes a global public good and how to address it.

I should avoid quoting the current Indian Prime Minister, as it would be perceived as biased. Instead, let me quote a past Prime Minister, Indira Gandhi, from 1980. I am not sure if she was responding to the 1973 song, but she was asked in Washington if India leaned left or right. Her response was: "India stands upright." This is similar to what Dr Jaishankar says: India does what it does in its own interest, not because of what others expect.

Finally, two last points. Our learned curator, Vikram Nehru, quoted John Donne's "No Man Is An Island", specifically the last lines, "It tolls for thee." Let me quote the first: "No man is an island, entire of itself." This applies to every country, including India, as an economy, society, and nation. India recognises this. Looking forward, what is the lesson for fragmentation? Again, Vikram, being polite, couldn't quote the relevant sentence from the middle, not the beginning or end: "Europe is the less." This, I believe, is the moral of the fragmentation occurring worldwide. Thank you.

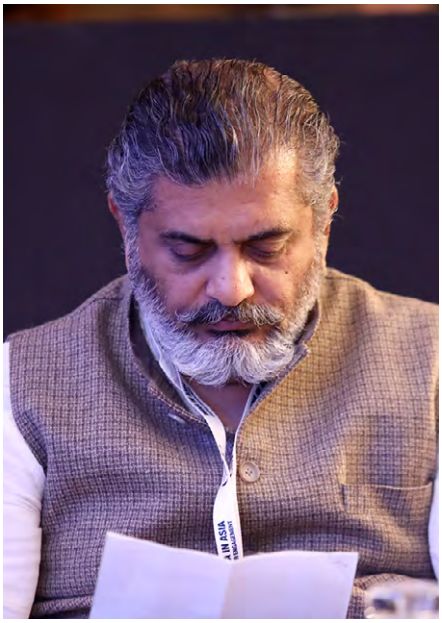

SUDIPTO MUNDLE
NISHAN DE MEL
ANOOP SINGH
RADEN PARDEDE
SHIVSHANKAR MENON
SUTHIPHAND CHIRATHIVAT


KRISTY HSU
UMESH PANDEY
MUHAMAD CHATIB BASRI


ARSENIO M BALISACAN


MONTEK SINGH AHLUWALIA
DANNY QUAH


KEISUKE IIDA
KRISTY HS

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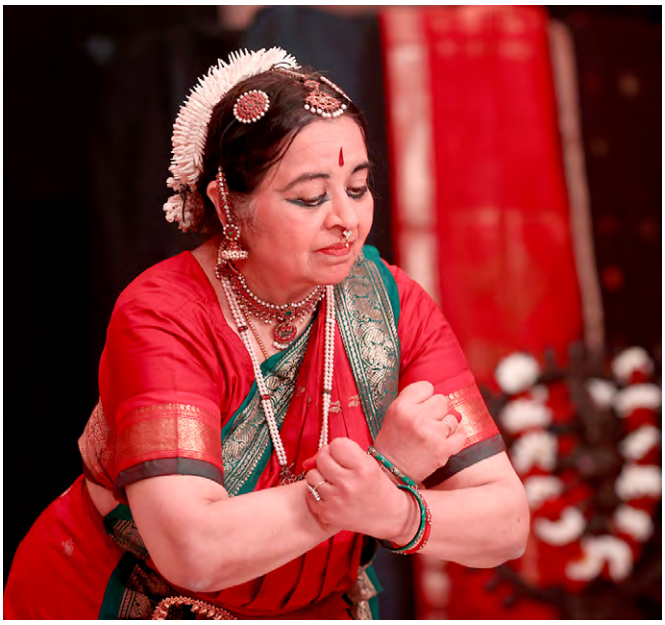
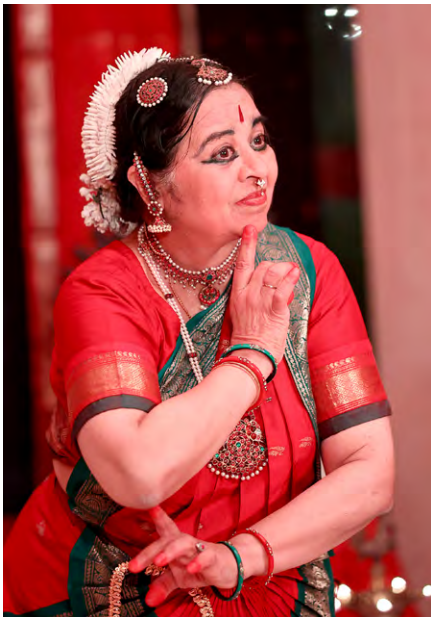
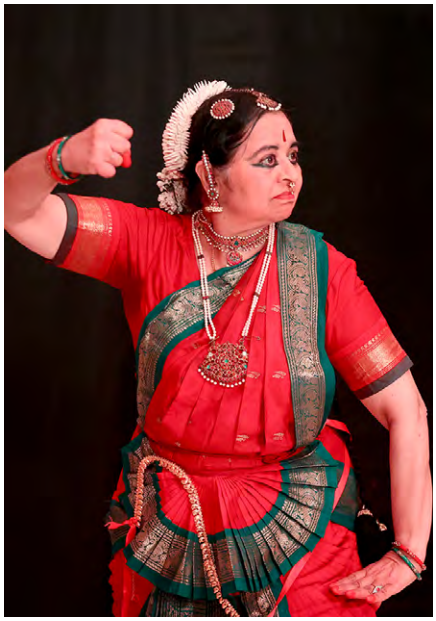
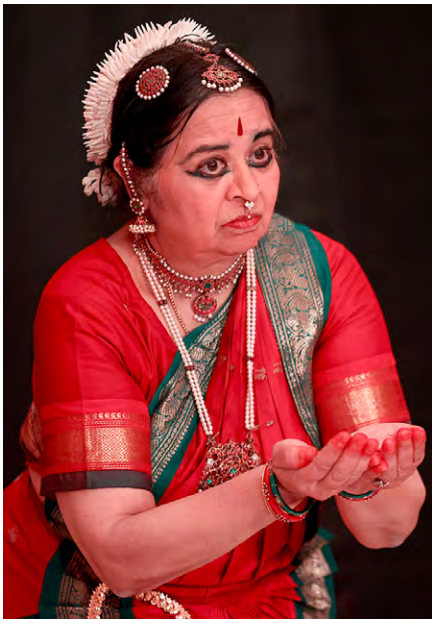
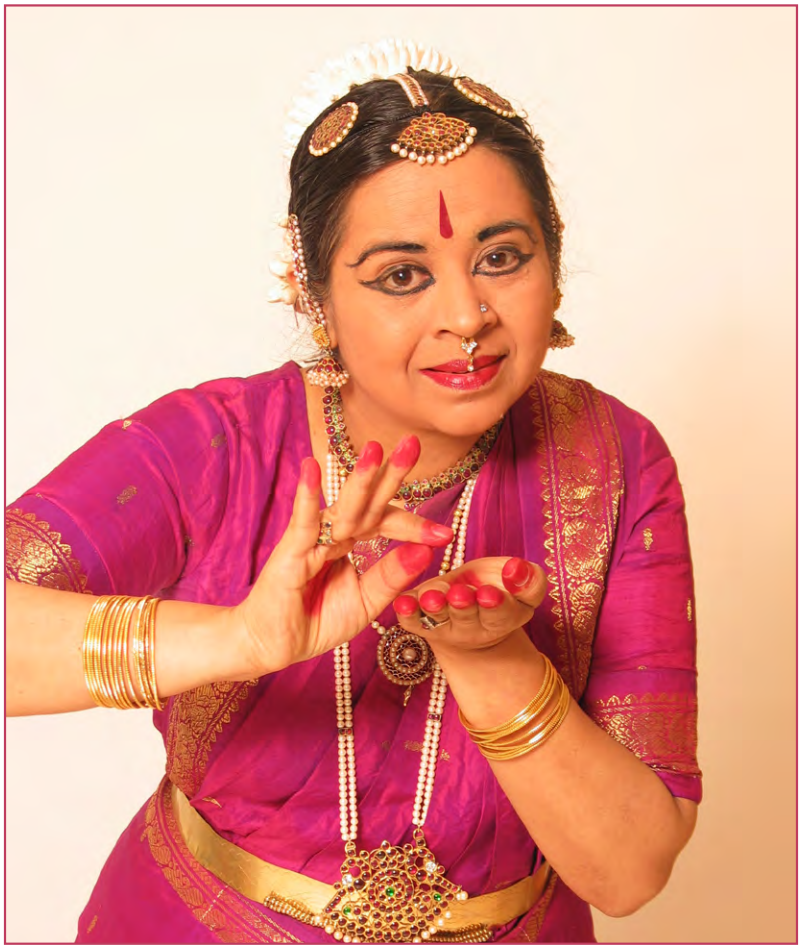




The Deities of Dance

A Bharatanatyam presentation by

Rasika Khanna



Venue: Badroon Mahal, Neemrana Fort-Palace

Date: Saturday, March 2, 2024 • Time: 7.00 pm

Born in Mumbai, Rasika Khanna is the daughter of Renu and Krishen Khanna, the artist. She was fortunate to be initiated into Bharatanatyam by the legendary Balasaraswathi as a child in Chennai. Her love for Bharatanatyam as a solo art form was later nurtured by her subsequent gurus, Smt. Lalitha Shastri, Shri Adayar Lakshman, Guru Nana Kasar and Smt. Kalanidhi Narayanan, each of whom gave her a different insight into the art form.

Rasika has performed professionally on many prestigious platforms both in India and abroad. In Asia she has performed in Jakarta and Bali in Indonesia, Singapore, Sri Lanka and Pakistan. She has taken her art further to the US, Europe, Canada, Chile, Colombia, Brazil, Tanzania, South Africa and Russia in Moscow and the Hermitage in St. Petersburg.

CLOSING SESSION

Valedictory Address

Arsenio M. Balisacan

Good day, everyone.

With profound gratitude, I address you today, deeply honoured by the opportunity to deliver the valedictory address at the culmination of the second conference, "India in Asia: Deeper Engagement." I sincerely thank Vikram Nehru for recommending my participation to the conference organisers and Rakesh Mohan for graciously extending the invitation to deliver the valedictory address.

I commend the Centre for Social and Economic Progress for leading this annual conference, which serves as a crucial platform for academics, former and current policymakers, influencers, and movers to engage in insightful discussions and exchange knowledge on the evolving role of India in Asia.

The conversations we have engaged in over the past two days and this morning have been enlightening, deep-diving, and forward-looking. Amid dynamic geo-economic and geopolitical shifts, including climate change and energy transition issues, these discussions have become both timely and imperative. As we navigate through the altered circumstances of our times, it is evident that our collective efforts in understanding and shaping industrial policies for development are more crucial than ever.

Notice that my phrasing is industrial policies FOR development to stress the point made at this conference that industrial policy (IP)—whether referring to the old IP or the new IP—is broadly understood to serve development, not to stifle development, in the sense of improving overall economic welfare.

Indeed, these discussions hold immense significance beyond India and China for the economic development and policy frameworks of smaller, emerging economies across Asia. The aftermath of the COVID-19 pandemic, geopolitical tensions, border conflicts such as the South China Sea issue in Southeast Asia, and the climate change crisis have helped shape public opinion regarding the necessity for strategic industrial policy and nuanced alliances.

For example, although the Philippines had more than its fair share of failed industrial policies in its postwar economic history, it recognises the imperative for strategic policy responses to the challenges of the times, particularly maritime conflict in the South China Sea, global food supply chain disruptions, health security, energy transition, and the impact of climate change.

What can make an Industrial Policy work for development? The five conference sessions—including the tea break or offside conversations—provide glimpses of the elements that make an IP a force for development. As has been made abundantly clear in this conference, IP is just that – a policy that can be designed, applied, and reformulated, applying the lessons that history has taught us. Let me characterise these elements as follows:

First, we define what IP is (or is not), specifically. This involves specifying the IP's objective, area, or sectoral target. An IP with many objectives—e.g., high-quality employment generation, inclusion and poverty reduction, environmental sustainability, industrial leapfrogging, national security, and energy transition—risks costly economic and social tradeoffs, crowding out, mismatches, or resource conflicts and misallocations, especially for emerging economies.

Second, we identify the costs and benefits ex-ante, mindful of the opportunity costs of scarce resources, especially in the context of developing countries where tradeoffs across critical areas for development are likely severe, and where fiscal consolidation following the COVID-19 pandemic has been a priority on the development agenda. Not losing sight of the lessons learned from past IP initiatives is—or must be—part of the ex-ante evaluation. For example, globalisation has tended to result in faster and sustained growth in countries that have, to begin with, market policies and institutions, particularly governance structures that enable efficient resource allocation, fair competition, human capital formation, and innovation.

Third, we choose the most appropriate policy instrument or process to achieve the IP objective or target. For example, a well-designed carbon tax or an emission trading system is arguably a sharp instrument to achieve the decarbonisation goal. But context, including political economy, is critical.

Across countries, even among emerging economies, there's no one-size-fits-all system for an IP, even if the objective is the same. Further, in countries with relatively underdeveloped mechanisms for economic governance, there is significant risk of rent-seeking where lobbyists, under the guise of promoting the common good, are able to successfully push for interventions that are ill-suited to address a particular objective, resulting in significant economic waste. Worse, we know that once they become accustomed to enjoying such benefits, it becomes an uphill battle to change or remove such interventions.

Fourth, we design a credible implementation governance and institutional platform for IP. Cooperation and coordination within and between governments are currencies of success, especially IP initiatives responding to new challenges (e.g., climate change crisis and global supply chain disruptions). I know that this is far easier said than done, considering that each actor in this coordination game may be considering a host of other objectives and scenarios playing out. Still, I believe that it is still the better way forward.

Fifth, we mobilise support for IP for development. This involves identifying the winners and losers and mobilising the champions or influencers for the influence-peddling game. Many of us at this conference know that a well-informed development policy reform is never a free lunch and that there are always losers or sacrifices to be made, especially in the immediate or short run. In theory, in such reform, the winners can compensate the losers. Too often, the winners – for example, the consumers hurt by import-substituting protectionist regime – are not necessarily the most effective in mobilising resources in the influence-peddling game. Social media and artificial intelligence, increasingly, are now part of the currency that can shape the game's outcome.

And sixth, we monitor and measure performance and evaluate the policy's impact vis-à-vis stated goals and overall economic welfare. A clear performance metric and credible carrot-and-stick policy are crucial elements of IP architecture, enabling the government to contain costs if IP is not succeeding or moving to the next level if it is meeting expectations. Where strong government intervention is present, so must an equally robust check on such interventions be applied. There must be mechanisms that allow for consistent and transparent evaluation.

Let me turn to another observation. Amidst the resurgence of industrial policies, it is noteworthy to observe the repositioning of Competition Policy (CP), which, after making significant strides in Asia over the past two and a half decades, is now taking a backseat. Curiously, not once did I hear CP in the conversations at this conference (or maybe I might have just missed it). By CP, we mean the administrative and judicial measures ensuring that markets are not restricted in ways that reduce economic welfare and stifle economic development. Of course, we note the observation (and criticism) that CP is often perceived to be a policy 'imported' from more developed jurisdictions and economies. It has also been argued that competition policy was not a major policy lever that was utilised during the period of rapid economic growth for many of the rich economies we observe today.

The challenge lies in striking a delicate balance – how do we mainstream Industrial Policy and Competition Policy within the development agenda? How can they coexist synergistically to achieve strategic objectives while advancing sustainable economic growth?

If both IP and CP are mainstreamed in the development architecture and not seen as working independently, the effect of either one would be more robust. That is the emerging evidence in Asia, and that is how I see competition policy as we started crafting it in the Philippines, where our approach was to mainstream it as part of the overall development policy architecture. Broadly, the returns to the activities – the investments of a competition agency (whether enforcement or merger work)– depend on how the other policies work. For example, suppose we find critical infrastructure inadequately provided because we have not addressed the coordination between and among government and the private sector (a case for IP). In that case, we do not expect competition policy to work well in those sectors that highly depend on efficient, well-functioning infrastructure. Only when these two work together can you get the maximum outcomes from the interventions. As has been mentioned, when designed properly, IP can also harness elements of market competition to enhance its effectiveness.

Let me turn next to a topic in which, admittedly, I have little comparative advantage—politics and its art. Without geopolitical knowledge, we cannot find a lasting solution for many of today's development issues. Arguably, geopolitical considerations are an essential part of the equation in addressing domestic economic problems facing nations, large or small. We economists, must expand our paradigms and analytical tools from, or at least enhance collaboration with,

other disciplines, as is the unique feature of this conference. For example, we can only be as responsive to evolving policy issues with a good understanding of how artificial intelligence (AI) works and how algorithmic platforms influence how we think about the world. So, our analytical tools must also expand and evolve.

The risk that the global economy will further deteriorate is on the upside. Geopolitical tensions are high. As the discussions at the conference indicate, partnership at the regional and international level is more crucial now than ever before. But leadership appears wanting. The G7 leaders and those from the less-advanced countries in Asia, including India and Indonesia, would need to work harder to stave off the crisis. What is required is coordination and cooperation—a collective action—in policy response to the global decline in trade, investment, and technology flows. Unfortunately, even within Asia, that is not less challenging. Because of these geopolitical and border tensions, trust is low, making collective action costly and more challenging to address the inadequate provision of regional or global public goods. For small economies in Southeast Asia, including the Philippines, national interests dictate that we perform a careful balancing act, including not taking sides with one country or the other but diversifying and reducing the risks arising from these tensions. Of course, we are all caught up in the geopolitical struggle, but we have to find our place within that struggle so that we can maintain our progress toward better socioeconomic outcomes.

Ideally, the world would be better if we had more open trade. Still, the US decision to tighten its industrial policy to protect its industries may work as it is a big country, but it may be at the expense of many smaller countries. In the long run, it may not work for the US because the policy will force other countries, including China and India, to invest aggressively in their high-tech industries, so the gains will likely be short-lived, even for the US. Of course, for emerging economies like the Philippines, this can result in positive spillovers from knowledge generation and technology transfer – provided that we put in place the policies, physical and social infrastructure, as well as institutions that will enable us to take advantage of such spillovers while building our own capacities. There must be corresponding social investments in human capital for open trade policy to work. Questions of upskilling and even addressing the most fundamental needs must be confronted squarely in this regard.

As we reflect on the theme of this conference series, "India in Asia: Deeper Engagements," it is imperative to ponder India's evolving role in the region in the future. The complexities of our interconnected world demand a nuanced understanding of India's position and its potential to influence regional dynamics positively. What is certain, at the very least, is that its actions carry much weight and will surely affect the strategic responses of its neighbours and trading partners.

In closing, I eagerly anticipate the continuation of these enriching conversations in the third conference of the series. Let us remain committed to fostering deeper engagements, transcending borders, and collectively shaping a prosperous, equitable, and sustainable future for all. It is an honour and a wonderful opportunity to have met you.

Thank you.

CLOSING SESSION

A Vision for India in Asia

Shyam Saran

What are the key takeaways from the two days of intensive discussions anchored on some of the most erudite presentations and sharp analysis from our distinguished delegates?

One, while the theme of our conference is "New Industrial Policies: Asian Perspectives", what has really preoccupied us during our deliberations is geopolitics. Industrial policy is really a marker for an incipient economic war, which may have dangerous consequences across the board. Industrial policy dominates economic thinking because security considerations overwhelm economic logic. The economic war is directed against China and will impact the entire network of dense economic and commercial relationships which China has not only with the US but with countries across the world.

Two, what makes industrial policy a topical issue is that it is being practiced by the US on an unprecedented scale. China has all along pursued an across-the-board industrial policy. The 'China 2025' document is a comprehensive charter in this respect, and is being pursued with utmost determination. The US has also used industrial policy in the past. For example, during the Cold War, it used COCOM (Coordinating Committee for Multilateral Export Controls) restrictions against the Soviet bloc and countries associated with it, including India, on security grounds. A sense of acute scientific and technological competition with the Soviet Union – remember the Sputnik moment in 1957 – led to the setting up of DARPA (Defense Advanced Research Projects Agency) and the state-funded space agency, NASA (National Aeronautics and Space Administration), and financial support to several high-technology industries. Today, rivalry with China has replaced that with the then Soviet Union, but the difference is that, unlike the Soviet Union, China is deeply embedded in the global trade, investment and financial networks. Any policy of exclusion, even on a limited scale, can, and already is, hurting both perpetrator and victim alike.

Three, the frustration with a lack of results may lead to a further expansion of industrial policy measures and this may cross the threshold of tolerance of the target country, in this case, the 'red lines' set by China. Between 1937 and 1942, there were a series of US trade restrictions and an oil embargo imposed on Japan, and additionally the freezing of Japanese assets in US banks (sound familiar!). This is what triggered the attack on Pearl Harbour on December 7, 1941, and the ensuing Pacific war. Are semiconductors the oil of the 21st century? This train of events may not be repeated. The international situation is very different, the balance of power, including the nuclear balance is more even. But this is a lesson of history one must never forget.

Four, the US-China equation should neither be characterised by collusion nor by confrontation. India would seek to locate itself somewhere in between but closer to the confrontation end of the spectrum. This will be a shifting location, staying on which will be a challenge for Indian foreign policy.

Five, for India as for China, Asia is its primary space for charting its development trajectory. India will not accept Chinese hegemony in Asia, but there will be a willingness to explore with China areas of possible convergence and common action. This was true at least since the 1980s up to the global financial and economic crisis of 2007-08. India and China had similar interests in the adjustment of existing regimes of global governance, such as the WTO to better reflect the interests of emerging economies. They also tended to work together in the shaping of emerging global regimes such as on climate change and the safeguarding of space-based assets. Since the global financial and economic crisis, China is bench-marking itself with the US. It believes it now has both the power and agency to go it alone, head-to-head with the US. This may be changing as China faces serious economic headwinds, which may be more persistent than is often assumed. One should not exclude the possibility of a more nuanced Chinese rivalry with India going forward; perhaps also between the US and China. If the future is of two-track US-led and China-led technological pathways, India will likely go with the former.

Finally, it was disturbing to hear that India is not on the radar screen of ASEAN countries. This may not be true of state-to-state relations, as Minister Jaishankar pointed out, but at the people-to-people level, India is apparently absent. This poses a significant challenge and must be addressed.

A hundred years ago, towering intellectuals like Rabindranath Tagore of India, Okakura Tenshin of Japan and Liang Qichao of China, envisioned Asia as a shared civilisational space, with deep cultural and philosophical affinities that had accumulated, layer upon layer, through centuries. This was a space traversed by traders, pilgrims, adventurers and, yes, even invaders since ancient times and who have left their imprint on the peoples of Asia. A sentiment of mutual empathy and shared destiny can be built on that legacy of easy cosmopolitanism and instinctive embrace of plurality. While state-to-state relations are crucial, we have neglected the people-to-people dimension. We must create spaces for our civil societies, our scholars and artistes to engage more deeply, drawing upon the affinities that flow beneath the surface. The invisibility that has been spoken about is mutual. India's orientation remains directed towards the West. This must change.

Lastly, India's re-engagement with Asia must begin with its own sub-continental neighbourhood. The next "India in Asia" conference must bring together participants from Nepal, Bhutan, Bangladesh, the Maldives, Sri Lanka, and Pakistan. I have always asserted, with a conviction born out of my years of diplomatic experience, that unless India leads the economic integration in its own neighbourhood, pursuing a Neighbourhood First policy, becoming, as it can, the engine of growth, the provider of security and other public goods to its neighbours, its aspirations for a larger Asian and global role will remain sub-optimal.

Thank you for your attention.

CLOSING SESSION

Reflections

Danny Quah

Let me offer reflections along two dimensions. First, a set of three observations that I feel I have learned from the many presentations. And second, three lessons, slightly more distant, about the pressing issues that we need to take forward.

The three observations about industrial policy are these:

1. These are actions that are costly. They are going to take a huge number of financial resources, administrative bandwidth, and focal attention. They will take the actions of participants in our economies—a lot of energy and resources to implement.

2. Industrial policy tilts the playing field. If it doesn't tilt the playing field, it's not doing what it sets out to do. Whether we think tilting the playing field is good or bad depends on which end of the playing field you are seated at. So, we have to go into this with our eyes wide open, understanding that this is not going to be a win-win-win kind of situation. Someone is going to be penalised. You can think about whether they are penalised absolutely or whether they are penalised relatively, but the playing field will be tilted with industrial policy.

3. The third feature I drew from our discussions is that the mindset of industrial policy is an explicit rejection of open markets—laissez-faire, uninterrupted, undisturbed, open markets.

So, these three things—that this will be costly, that it tilts the playing field, and that it is a rejection of open markets—are the three points I want to make.

My first point is about small states, smaller nations in the world. I am mindful of how we are now sitting in the world's number one most populous nation, the biggest state that there is. But a large number of stakeholders in the global economy come from states that are very different from India. They come from small states. And small states show a wide variety of behaviours: there are very many very poor small states, and there are successful small states. But for all small states, the fact that industrial policy is costly, the fact that it tilts the playing field, the fact that it's a rejection of an open-market trading system, works against us. All three of these things work against small states. And as we pursue our understanding of industrial policy, we need to be mindful of the distributional consequences across the world. There is an easy description of this, which I don't like, but it's an easy one to remember: this is going to create global inequality. Small states cannot afford to pay the large cost of industrial policy. Small states do well on a level playing field. Small states do well with open markets and trading systems. All these things that come with new industrial policy work against small states.

Now, let me be very clear, my view is that as we look around the world, all of the world's successful states are small, except for the United States. So, if you look at the nine richest countries in the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world by per capita GDP, aside from the United States, they are all small. The average population of the world's nine richest states, abstracting from the United States, is only 4.2 million—that's smaller than Singapore. So, as a rule of thumb, the way the world has gone for the last five decades, the world's successful states are all small. At the same time, there is a huge tail in the distribution of many small states that are very poor. All of these small states are going to see, as we carry forward this industrial policy, unless we do it in a concerted, multilateral-thinking kind of way—which seems to be antithetical to the spirit of nation-oriented industrial policy—that it would work against them.

This is extremely alarming for those of us who live and work in small states, who believe that the global system works best when it takes care of all and allows everyone to prosper.

Let me make my second point. That second point relates to East Asia previously, under its version of industrial policy, versus today's version of industrial policy, globally. As has been pointed out a number of times at this conference, East Asia's industrial policy from the 1970s and the 1980s focused on self-improvement. It focused on improving research and development, and upgrading the skills of its population; it lifted itself. And by lifting itself through the forces of economic competition, it lifted those around it. Everyone grew better off. There is an interpretation that East Asia, from the 1970s and 1980s, practised an industrial policy that was win-win, that benefited everyone.

Today's industrial policy is 180 degrees different. Today's industrial policy, as we have all already discussed, carries parts where nations are willing to do self-harm, as long as the harm that that policy engenders is even worse in those nations they consider their competitors. This is a dramatically different kind of industrial policy that we are moving into today. Those of us who feel that even if our nation pursued that national self-interest, the world is safer, better, more assured when the whole world prospers, we need to take this into account as we carry forward this discussion of industrial policy.

Let me end by reflecting on how there was a different time in global economic history where again, all eyes were focused on the capital city of the United States, and all eyes were focused on ideas emerging from those who work in Washington, DC. And that time was the time of the Washington Consensus. Now, many of you here have worked with and against the Washington Consensus, and you all know that John Williamson, the originator of the Washington Consensus, himself acknowledged that everybody he met could not say the words "Washington Consensus" without foaming at the mouth. (Laughter) For those countries that the Washington Consensus benefited, they then ran away with a narrative of neoliberalism and market fundamentalism, which Williamson never intended. For those countries that did not do well under the Washington Consensus, they blamed Williamson, they blamed the Peterson Institute, they blamed Washington, DC for this monstrosity that was the Washington Consensus.

The Washington Consensus was born at a time when observers felt first-hand the devastating implications of macroeconomic and financial instability. And they worked on stabilising the markets. And at the same time they did that, they said we should spend on things that improve the entire population's education, health, research, and development, and they emphasised openness of markets and a level playing field.

Washington Consensus, we might have railed against you then, but many of the things you offered seemed to me not so unattractive now. But we have come full circle, and we now live in a world where the Washington Consensus today is not the Washington Consensus of the 1990s. And we need to recalibrate the world; we need badly to recalibrate the world to take care of the world's small states, to once again bring about a win-win mentality, and to look at policies that will be good for everyone rather than those that are good for no one. That's what I took away from this weekend's discussions of industrial policy. It was hugely enriching, and I thank you all very much.

CLOSING SESSION

Reflections

Rakesh Mohan

Danny, thank you very much. You have given a sort of 9,000-feet-high view of what we have been doing. My work in life has always been in the trenches, so that is what you are going to hear from me.

Let me first just give my reflections on what we have done in this conference. I have been involved with industrial policy in India since the late 1980s, along with Montek (Ahluwalia) and others. We were very involved in our then-new industrial policy in 1991. This is a subject that has been close to my heart for a long time, even though I have kept moving to different areas of interest over the years. This conference has been really fruitful. I learned a great deal both from first reading up on industrial policy to be able to write the first background note for this conference, and what has been amazing to me is that so many new things have come out through the discussions. What I also learned is that this has become an overarching topic now. This is a topic that concerns all of us—and here I am confining this to Asia. It doesn't mean that it doesn't concern others in the world.

The key issues, as everyone has mentioned, are: geo-economic fragmentation; the issue of trade—the old view, maybe current view, the new view, whether we need to be export-oriented or not; trade diversion; issues on technology policy, which came up a number of times in the conference, but that is a whole topic in itself, which we have not covered that much. But this is clearly going to be a major issue, and a lot of the new industrial policies are to do with technology policies.

What is interesting on the new technology policy issue is that, in general, we have had the view that science and technology are public goods to be shared. Though this is tempered by patent policy, science and technology are generally viewed as public goods, which are to be shared publicly. Of course, there are limits to that, but now industrial policies have also become winner-take-all or a zero-sum game. That is something new.

A lot of new industrial policy has purported to come from concerns related to climate change and the green transition. The question is whether the new industrial policies will promote actions to curb climate change and promote the green transition, or work against it. If there is one thing everybody agrees on, it is that action against climate change is the real public good in the world. But the question is, will the industrial policies do the opposite? I think that is a key issue that has come up.

One thing that hasn't come up much, interestingly, is the huge variation in incomes in Asia. On the one hand, there is South Asia—including India, Bangladesh, Sri Lanka, Nepal, Pakistan, and Bhutan—and Myanmar and Laos in ASEAN, which have per capita incomes in the low-middle-income range; while on the other hand, there are Japan, South Korea, Singapore, Taiwan, and Hong Kong, which are in the advanced economy category. So, there is a huge income range in this region. So, something has been missing in our discussions. Though we talked about diversity in Asia, the question is: How did the lower-middle-, low-income, or even middle-income countries cope—those with different,

new industrial policies as different from the higher-income countries in Asia?

What I have also gained from the conference is that it highlighted—and this is very much a work in progress—we don't really know where we will go in the future, which was illustrated in the last session. We didn't get much guidance. This illustrates there is much, much more thinking to be done on this issue because it is still new. Industrial policy has to be enacted. We don't know what else will come in industrial policy and whether it will be the US or China or Japan or Korea, anywhere, and India for that matter. I think that is an important point: there is a huge degree of uncertainty. Probably we will know more in two or three years.

Now, I will just illuminate what I think we have learned from this conference.

Minister Jaishankar highlighted in his remarks—among the many things he said—economists are at peril if they ignore geopolitics, security, and safety concerns. So, I think that's an idea that's important from my viewpoint. When I first became an economic advisor to the Government of India, I asked my former professor, Professor Al Harberger—since he advised many governments—what advice he had for me as I was becoming economic advisor in the Indian government. He said, "Remember, you are an economic advisor. You are being paid to be an economic advisor, not a political or strategy advisor. You obviously have views on those issues, but you are being paid to be an economic advisor. And, therefore, you should give clean, straight economic advice. Someone else is paid to do the political thinking and strategy thinking in terms of security …" I don't mean economic strategy, but strategy or thinking for defence, etc. In general, I kept to that. But one learning now from what Dr Jaishankar said, but also from a lot of the discussion, is that economists are at peril if they ignore geopolitics, security, and safety concerns.

I forget who said it, but it really came home to me: cooperation for the common good is fragile. Cooperation is much easier if it is against someone. It was much easier for the US to gain support from many countries in the West, in Europe, in particular, against Iraq, even though they were misled by the actual reality over there. Similarly, Ukraine. Similarly, if I may say so, ignoring the 1.5% of the population of Gaza that has been killed (it is completely off the topic)—but the point is, it seems to be easier to get cooperation when you are against something. This is very important because, as we go ahead (and a lot of the last session did talk about this), we have to work together in many things in Asia, in ASEAN, ASEAN Plus Two, and ASEAN Plus Three. I think this is a big lesson I have learned in this conference: that it is not going to be easy because this cooperation won't be against anyone. This cooperation is for us.

There's a clear need—this, of course, has been the whole objective of this **'India in Asia: Deeper Engagement'** conference—that India needs to cooperate much more with ASEAN, ASEAN Plus Two, and—I hope—ASEAN Plus Three. I hope you can see what I am conveying. And, as was remarked also by Ambassador Shyam Saran, to the extent that India is missing or invisible in many parts of ASEAN in terms of popular impression, that is something that we have to work on, on both sides. There is also little understanding between ourselves of each other—people to people, Shyam mentioned, officially, etc.

Something that didn't come up at all—so I didn't learn this from the conference—the flying geese seem to have flown away, perhaps to Siberia! This was not mentioned at all in the whole conference, and I am the first fellow who has mentioned this term 'flying geese'. This is connected to what I said a bit earlier, that no one's talked about global income, etc., and where we would go. I think the flying geese are still important. There are four billion people in Asia (Southeast Asia, South Asia, East Asia) whose incomes will keep growing. So, there is going to be a huge continuing demand for consumer goods in the region for at least the next two decades. There will be a huge need for labour-intensive products among ourselves. There will not be as much incremental demand from the West because their population is going down, and incomes are already becoming stagnant. We haven't talked about new industrial policies in Asia for labour-intensive industries. I think Danny Rodrik has talked about premature deindustrialisation. So, we have not really devised new industrial policies for labour-intensive products in the face of new industrial policies being enacted in the West. What kind of new industrial policy do we need for this?

India and ASEAN, I have learned in the last few sessions, have many common issues and concerns. Therefore, India and ASEAN need to work much more together. There should be a significant framework for continuous interaction among ourselves. We need to figure out how best to deal with China in a positive direction so that we can take advantage of this huge market. China's GDP is five times India's. There is huge demand out there. People always talk about large exports from China, but China also has the largest imports. The current account is no longer in large surplus, as it was. The point, therefore, is that in dealing with China, we have to look at the positives as much as the difficulties they pose on the security and geopolitical front.

One area where we clearly can have cooperation globally, but certainly within Asia, is on measures to deal with climate change. China is the number one emitter, and India could rapidly approach being number two, in spite of the fact that our per capita emissions are low and will remains so for quite some time. We are going to cross the EU quite soon. This is one issue on which the whole world must cooperate. We must understand this in Asia, in particular. The question is, for India in Asia, how do we do this?

I have now run out of the points that I have learned. The basic issue is that there is a lot of distance to cover on the general issue of **'India in Asia'**; and second, on this year's theme—the new industrial policy as well. I hate to admit it, but I owe it to Danny for introducing this topic.

One point I would say is how we can do some joint research—and I don't mean just with CSEP but with other institutions in India also. How do we forge the kind of relationships we could have in ASEAN, within ASEAN, to do joint research? We talked about the Washington Consensus. The question is, in Asia, do we move from the Washington Con-

sensus to the Neemrana Consensus for Asia's economic strategy in the future?

Before I conclude, I would like to thank a few people.

First, I have to practise nepotism, so I have to thank my wife, Rasika, for her wonderful Bharatanatyam performance yesterday. I have never done this before in 40 years!

Second, after Rasika, I would like to thank our Prime Minister. He has been very, very generous to have given us a message of support last year in writing and this year as well. I hope that this demonstrates our government's interest in forging these ties with the rest of us in Asia. And, as Shyam said, first in the neighbourhood, then, of course, beyond. So, that's second.

President Tharman Shanmugaratnam, for first inspiring me when I asked him to undertake the exercise last year, and again now. Last year, he was here for a day and a half. This year, again, he has sent a very thoughtful message.

Third, our inaugural speaker: External Affairs Minister, Dr Jaishankar. He has been very generous with his time in coming here, spending the night and having breakfast here, along with his wife. If you read the media, if you look at the media, he is everywhere at the same time! Moreover, he has been very supportive of this conference in both years. And, of course, his presence here really cemented that support.

I hope that none of you who are here had any visa issues because his whole Ministry cooperated to send messages to the relevant offices to facilitate the visas. So, I thank the Ministry of External Affairs—the Minister himself and all his staff.

Fourth, my colleague and friend Bibek Debroy, Chairman of the Economic Advisory Council to the Prime Minister, for being gracious enough to accept our invitation, despite all the vagaries of Neemrana. But he has really been very generous. Since I see here, Suparna, his wife, I have to thank her also for making him come and for looking after him here to make sure that he is comfortable.

Your Excellency, Minister Balisacan, it is very kind of you to accept the invitation, especially because we have not known each other before. So, to accept this invitation coming out of the blue is very generous. So, thank you very much for coming and for the really thoughtful, inspiring lecture.

Mari, for agreeing to do the address that you just did. I am not sure if she remembers: the first time I met Mari was in Shanghai. I don't know which meeting I had gone for. The memorable thing about meeting her there was that she took my wife and me to a restaurant—a good Chinese restaurant—and, for the first and only time, I have eaten snake. So, this is clearly a long association because of the snake that I ate. Thank you very much, Mari.

I want to also, for the first time actually, thank the donors who are listed here: the Tatas, Bajaj Foundation, and Mitsui O.S.K. Lines. We have representatives from Mitsui here. We thank them very much. Of course, we wouldn't be here without their support.

All the session curators: I won't name them, but all the session curators did a lot of work prior to the conference. The chairpersons. All the people who were presenters really did great work. And the discussants. Thank you all.

I would also like to thank all my colleagues in CSEP for all the very hard work that they have done to make this conference possible. Please stand up so that everyone can see you and acknowledge your contributions.

And, of course, Danny, my co-chair. Again, really happy. And the only thing remaining now is: what the hell will *I* do the next few months? Laveesh?


KRISHNU SRINIVASAN
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SHIVSHANKAR MENON

CLOSING SESSION

Way Forward

Laveesh Bhandari

A very good afternoon. It has been an amazing, enriching set of conversations. I am highly encouraged by the active participation of everyone present here today. And I have no doubt that we have together laid the foundations of what is a major initiative, and I hope that it will continue to inform us in the years and decades to come.

So, the motivation behind this conference was a consensus that there is inadequate engagement by Indian scholars, policy influencers, and policymakers with their counterparts across Asia. Almost all our engagements have traditionally been with the West, at least on the Indian side. And despite very significant economic successes across Asia, we have limited scholarly contact with each other. Today, after two successful editions of the India in Asia: Deeper Engagement conferences, it gives me great pleasure to report that more than 50 scholars from across Asia, from across 10 countries, and as many from India have participated in these conferences. In our own small way, we have taken the initial steps to make up for lost time and built momentum for deeper engagement across geographies and disciplines.

It is quite remarkable that in just two editions of the India in Asia conference, we have been able to cover a wide variety of areas including industrial policy, foreign policy, environment, sustainability, growth, and development. These subjects are at the heart of our research at CSEP, which I have shared with you. We encourage our scholars to do deep dives and at the same time encourage cross-pollination of ideas and multi-disciplinarity. Our endeavour continues to be to break silos and make recommendations that take a comprehensive view of policy changes. I must say that the richness of the deliberations has only strengthened our views.

So, let me conclude with a call to action. Over the last few sessions, lunches, dinners, tea, and coffee breaks, many formal and informal engagements have occurred. Scholars from across countries and disciplines have interacted on various topics. Let me invite all of us to take these interactions forward and share expressions of interest in partnerships, both formal and informal. These partnerships could include, but are not limited to, joint research, scholar exchange programmes, co-hosting seminars, and roundtables, amongst others. I invite you to consider the possibilities of deepening engagement and look forward to strengthening our collaboration. The issues are pressing, time is limited, and the steps we take, I am confident, will have a large-scale positive impact and shape the lived reality of our people. Thank you once again. Safe travels.


NOBUO TANAKA
BYUNG-IL CHOI
DANNY QUAH
SHYAM SARAN
KEISUKE IIDA
UMESH PANDEY
AJAY SINGH
N DESAI

Conference Agenda
India in Asia: Deeper Engagement

New Industrial Policies: Asian Perspectives

Co-Chairs: Rakesh Mohan and Danny Quah

Neemrana Fort-Palace, March 1-3, 2024

DAY 1: FRIDAY, MARCH 1, 2024	
09:45	Assembly at Lobby of **ITC Maurya Hotel** (Sardar Patel Marg, Diplomatic Enclave, Chanakyapuri, New Delhi)
10:00	Departure for Neemrana
13:00	Arrival at Neemrana Fort-Palace
13:30	Keynote Address by **Bibek Debroy**, Chairman, Economic Advisory Council to the Prime Minister of India Followed by Lunch *Venue: Jalgiri Mahal*
17:00 – 17:50	High Tea *Venue: Qanat Lobby*
18:00 – 20:00	**Opening Session: Continuing India's Engagement with Asia** *Venue: Qanat Hall* Chairperson: **Rakesh Mohan**, Conference Co-chair Welcome Address: **Vikram Singh Mehta**, Chairman and Distinguished Fellow, CSEP Message from Prime Minister of India, **Shri Narendra Modi** Message from President of Singapore, **Tharman Shanmugaratnam** Inaugural Address: **S. Jaishankar**, Minister of External Affairs, Government of India Keynote Address: **Mari Elka Pangestu**, Former Minister of Tourism and Creative Economy, Indonesia Conference Theme by Conference Co-chairs: **Danny Quah**, Dean and Li Ka Shing Professor of Economics, Lee Kuan Yew School of Public Policy, National University of Singapore **Rakesh Mohan**, President Emeritus and Distinguished Fellow, CSEP
20:00 – 22:00	Cocktail and Dinner *Venue: Mukut Bagh & Uncha Bagh*

DAY 2: SATURDAY, MARCH 2, 2024	
07:30 – 09:00	Breakfast *Venue: Jalgiri Mahal*
09:15 – 09:30	**CSEP and Asia** *Venue: Qanat Hall* **Laveesh Bhandari**, President and Senior Fellow, CSEP
09:30 – 11:00	**Session I: Geopolitical Rivalry and Use of Industrial Policy as a Strategic Weapon** *Venue: Qanat Hall* Curator: **Shivshankar Menon**, Distinguished Fellow, CSEP Chairperson: **Thitinan Pongsudhirak**, Professor, ISIS Thailand, Faculty of Political Science, Chulalongkorn University, Thailand ***Paper 1: The Risk of Conflict in Asia*** *Author:* **Bilahari Kausikan**, Chairman, Middle East Institute, National University of Singapore and Former Permanent Secretary, Singapore *Discussant:* **Rudra Chaudhuri**, Director, Carnegie India ***Paper 2: Industrial Policy and Geopolitical Rivalry: The Semiconductor Industry at a Crossroads*** *Author:* **Keisuke Iida**, Dean and Professor, Graduate School of Public Policy, The University of Tokyo, Japan *Discussant:* **Nitin Pai**, Co-founder and Director, The Takshashila Institution, India **Open Discussion**
11:00 – 11:20	Tea/Coffee Break *Venue: Qanat Lobby*

DAY 2: SATURDAY, MARCH 2, 2024	
11:30 – 13:00	**Session II: New Industrial Policies: How are They Different From Those That Promoted Growth in Asia?** *Venue: Qanat Hall* Curator: **Sanjay Kathuria**, Visiting Senior Fellow, CSEP Chairperson: **Jomo Kwame Sundaram**, Senior Adviser, Khazanah Research Institute, Kuala Lumpur Sentral, Malaysia ***Paper 1: Japan's Industrial Policies: Past and Present*** *Author:* **Shujiro Urata**, Chairman of the Research Institute of Economy, Trade and Industry, Japan *Discussant:* **Ong Kian-Ming**, Director, Philosophy, Politics and Economics Programme, Faculty of Business & Law, Taylor's University, Malaysia ***Paper 2: Recreating Industrial Policy: East Asian Experience and Beyond*** *Author:* **Keun Lee**, Distinguished Professor, Department of Economics, Seoul National University, South Korea *Discussant:* **Yang Yao**, Professor, The China Center for Economic Research, Peking University, China *(to be confirmed)* **Open Discussion**
13:00 – 14:15	Lunch *Venue: Aatam Sukh Bar*

DAY 2: SATURDAY, MARCH 2, 2024	
14:30 – 16:00	**Session III: New Industrial Policies and Geo-economic Fragmentation: Implications for Trade and Global Value Chains** *Venue: Qanat Hall* Curator: **Amita Batra**, Senior Fellow, CSEP Chairperson: **Krishna Srinivasan**, Director, Asia Department, International Monetary Fund, USA ***Paper 1: From Free Trade to Industrial Policy: Assessing Policy Shifts in Major Developed Countries and the Implications for Developing Asia*** *Author:* **Kristy Hsu**, Director, Taiwan ASEAN Studies Center, Taiwan *Discussant:* **Bernard Yin Yeung**, Stephen Riady Distinguished Professor in Finance and Strategic Management, National University of Singapore Business School, Singapore ***Paper 2: Geo-economic Fragmentation and the Regional Trade Architecture: An ASEAN Perspective*** *Author:* **Denis Hew**, Senior Research Fellow, Lee Kuan Yew School of Public Policy, National University of Singapore *Discussant:* **Suthiphand Chirathivat**, Professor Emeritus of Economics, Chulalongkorn University, Thailand **Open Discussion**
16:00 – 16:20	Tea/Coffee Break *Venue: Qanat Lobby*

DAY 2: SATURDAY, MARCH 2, 2024	
16:30 – 18:00	**Session IV: Climate Change, Decarbonisation, Energy Transition: Options for New Industrial Policies?** *Venue: Qanat Hall* Curators: **Montek Singh Ahluwalia**, Distinguished Fellow, CSEP & **Laveesh Bhandari**, President and Senior Fellow, CSEP Chairperson: **Nobuo Tanaka**, Executive Director Emeritus, the International Energy Agency (IEA) and CEO, Tanaka Global Inc., Japan ***Paper 1: Unraveling the Energy Complexities to Meet Carbon Neutrality in ASEAN*** *Author:* **Tetsuya Watanabe**, President, Economic Research Institute for ASEAN and East Asia (ERIA), Indonesia ***Paper 2: Deglobalization and Carbon Emissions*** *Author:* **Heiwai Tang**, Director, Asia Global Institute and Victor and William Fung Professor in Economics, Hong Kong University Business School, Hong Kong *Discussant for Papers 1 & 2:* **Tao Zhang**, Chief Representative for Asia and the Pacific, Bank of International Settlements, Hong Kong *(to be confirmed)* ***Paper 3: New Industrial Policies for Climate Change and Energy Transition*** *Author:* **Muhamad Chatib Basri**, Senior Economist of Indonesia and Chairman, PT Bank Mandiri, Indonesia *Discussant:* **Nitin Desai**, Chairman, The Energy and Resources Institute (TERI), India
19:00 – 19:45	The Deities of Dance: A Bharatanatyam presentation by **Rasika Khanna** *Venue: Badroon Mahal*
20:00 – 22:00	Cocktail and Dinner *Venue: Mukut Bagh & Uncha Bagh*

DAY 3: SUNDAY, MARCH 3, 2024	
07:30 – 09:15	Breakfast *Venue: Jalgiri Mahal*
09:30 – 11:00	**Session V: New Growth Policy Paradigms for Asia in a Fragmenting Global Economy: Impact of New Industrial Policies** *Venue: Qanat Hall* Curator: **Vikram Nehru**, Senior Fellow, Foreign Policy Institute, Johns Hopkins School of Advanced International Studies, USA Chairperson: **Byung-il Choi**, President, Korea Foundation for Advanced Studies, South Korea ***Paper 1: Navigating New Industrial Policies: Southeast Asian Perspectives*** *Author:* **Mari Elka Pangestu**, Former Minister of Tourism and Creative Economy, Indonesia *Discussant:* **Kirida Bhaopichitr**, Director of TDRI Economic Intelligence Service (EIS), Thailand Development Research Institute, Thailand ***Paper 2: Japan and India in the Deglobalizing World: Geopolitics, Democracy, and Industrial Policy*** *Author:* **Takatoshi Ito**, Professor, School of International and Public Affairs, Columbia University, USA *Discussant:* **Bibek Debroy**, Chairman, Economic Advisory Council to the Prime Minister of India **Open Discussion**
11:00 – 11:20	Tea/Coffee *Venue: Qanat Lobby*

DAY 3: SUNDAY, MARCH 3, 2024	
11:30 – 13:00	**Closing Session: Further Engagement: Looking Into the Future** *Venue: Qanat Hall* Chairperson: **Danny Quah**, Conference Co-chair Valedictory Address: **Arsenio M. Balisacan**, Secretary, National Economic and Development Authority, Philippines Vision: India in Asia: **Shyam Saran,** Former Foreign Secretary of India Reflections: **Danny Quah**, Dean and Li Ka Shing Professor of Economics, Lee Kuan Yew School of Public Policy, National University of Singapore **Rakesh Mohan**, President Emeritus and Distinguished Fellow, CSEP Way Forward: **Laveesh Bhandari**, President and Senior Fellow, CSEP
13:00 – 14:00	Lunch *Venue: Aatam Sukh Bar*
14:00	Departure for New Delhi

We request all delegates to arrive at Qanat Hall 5 minutes ahead of the scheduled start of sessions.

The India in Asia: Deeper Engagement Conference will be held under Chatham House Rules.

INAUGURAL ADDRESS

S. JAISHANKAR

Minister of External Affairs, Government of India

S. Jaishankar is India's External Affairs Minister since May 30, 2019. He is a Member of the Upper House (Rajya Sabha) of India's Parliament from the state of Gujarat.

He was Foreign Secretary from 2015-18; Ambassador to the United States (2013-15); China (2009-2013); and the Czech Republic (2000-2004). He was High Commissioner to Singapore (2007-2009).

He has also served in other diplomatic assignments in Embassies in Moscow, Colombo, Budapest and Tokyo, as well in the Ministry of External Affairs and the President's Secretariat. He was also President – Global Corporate Affairs at Tata Sons Private Limited from May 2018.

He is a graduate of St. Stephen's College at the University of Delhi. He has a Master's in Political Science and an MPhil and PhD in International Relations from Jawaharlal Nehru University, Delhi.

He is a recipient of the Padma Shri award in 2019 and has written a widely acclaimed best-selling book: *The India Way: Strategies for an Uncertain World*, which was published in 2020.

KEYNOTE ADDRESS

(At the Welcome Lunch)

BIBEK DEBROY

Chairman, Economic Advisory Council to the Prime Minister of India

Bibek Debroy is an economist and was educated at the Ramakrishna Mission School, Narendrapur; Presidency College, Kolkata; Delhi School of Economics; and Trinity College, Cambridge. Presently, he is Chairman, Economic Advisory Council to the Prime Minister (EAC-PM), and Chancellor, Deccan College Post-Graduate and Research Institute, Pune, Government of Maharashtra. He has worked at Presidency College, Kolkata (1979-83); Gokhale Institute of Politics and Economics, Pune (1983-87); Indian Institute of Foreign Trade, Delhi (1987-93); as the Director of a Ministry of Finance/UNDP project on legal reforms (1993-98); Department of Economic Affairs (1994-95); National Council of Applied Economic Research (1995-96); Rajiv Gandhi Institute for Contemporary Studies (1997-2005); PHD Chamber of Commerce and Industry (2005-06); Centre for Policy Research (2007-15); Member, NITI Aayog (2015-19); and President, Indian Statistical Institute (ISI) (2018-22). He has authored/edited several books, papers and popular articles and has also been a Consulting/Contributing Editor with several newspapers.

He was awarded the Shriram Sanlam Award for Financial Journalism (in 2013); Padma Shri, the fourth highest civilian award of India (in 2015); D.Litt. (Honoris Causa) by KIIT University (in 2015); D.Phil. (Honoris Causa) by Amity University (in 2016); D.Phil. (Honoris Causa) by Jagran Lakecity University (in 2017); D.Sc. (Honoris Causa) by University of Engineering and Management (in 2018); a Lifetime Achievement Award by the US-India Business Summit (in 2016); Skoch Challenger Golden Jubilee Award (in 2017); a Lifetime Achievement Award by Prestige Institute of Management and Research (in 2018); and "Bharatiya Manavata Vikas Puraskar" by Power Brand (in 2018). He was conferred the title of "Vachaspati" by the Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha (in 2018) and "Sir R.G. Bhandarkar Smriti Puraskara" by the Bhandarkar Oriental Research Institute (BORI), Pune (in 2023).

KEYNOTE ADDRESS

(At the Opening Session)

MARI ELKA PANGESTU

Former Minister of Tourism and Creative Economy, Republic of Indonesia

Mari Pangestu was the World Bank Managing Director of Development Policy and Partnerships, March 2020-2023. Prior to joining the Bank, Mari Pangestu served as Indonesia's Minister of Trade from 2004 to 2011 and as Minister of Tourism and Creative Economy from 2011 to 2014.

She has a vast experience of over 30 years in academia, second track processes, international organisations and government, working in areas related to international trade, investment and development in multilateral, regional and national settings. She is highly regarded as an international expert on a range of global issues and has served on a number of boards and task forces such as the Chairperson of the Board of Trustees of the International Food Policy Research Institute (IFPRI) in Washington DC and Commissioner for the Low Carbon Development Initiative of Indonesia as well as an Executive Board Member of the International Chamber of Commerce (ICC). She has also served on the board of a number of private sector companies and is currently a Non-executive Director on the Board of AIA.

Currently, she is a Professor of International Economics at the University of Indonesia and a Board Member of the Centre for Strategic and International Studies (CSIS), Jakarta. She is also a Distinguished Fellow at the Peterson Institute for International Economics; Senior Fellow at Columbia School of International and Public Affairs; and Honorary Professor at the Crawford School of Public Policy, Australian National University.

She obtained her Bachelor's and Master's degrees in Economics from the Australian National University, and her doctorate in economics from the University of California at Davis.

VALEDICTORY ADDRESS

ARSENIO M. BALISACAN

Secretary, National Economic and Development Authority, Philippines

Arsenio M. Balisacan is presently a member of the Philippine President's Cabinet, serving as the government's Chief Economic Planner and Secretary (minister) of the National Economic and Development Authority, a post he had previously held from 2012 to 2016. He also served as the inaugural Chairperson and Chief Executive of the Philippine Competition Commission from 2016 to 2022.

Before his initial Cabinet appointment in 2012, he was Professor and Dean of the University of the Philippines School of Economics; Director-Chief Executive of the Southeast Asian Regional Centre for Graduate Study and Research in Agriculture (SEARCA); and Undersecretary of the Department of Agriculture. Before joining the University of the Philippines faculty in 1987, he was a Research Fellow at the East-West Center in Honolulu, Hawaii, and an economist at the World Bank in Washington, DC.

He has authored and co-edited seven books and published, both locally and internationally, close to 100 academic papers and book chapters on various development issues, particularly in the Philippines and East Asia. He is author and co-editor of the upcoming book *Designing Competition Policy for Economic Development in Asia.*

He has advised and consulted with numerous development agencies and multilateral institutions, including the World Bank, Asian Development Bank, OECD, ASEAN, and various United Nations agencies.

He holds a PhD in Economics from the University of Hawaii, an MS in Agricultural Economics from the University of the Philippines Los Baños, and a BS in Agriculture *(magna cum laude)* from the Mariano Marcos State University.

DELEGATES

SHANKAR ACHARYA

As the longest-serving Chief Economic Adviser to the Government of India (1993-2001) Shankar Acharya was deeply involved in the economic reforms of the 1990s and served three successive governments of the Congress, the United Front and the National Democratic Alliance. He also served as Member of the Securities and Exchange Board of India (1997-2000); Member, Twelfth Finance Commission (2004); National Security Advisory Board (2009-2013); and as a member of the Reserve Bank of India's Advisory Committee on Monetary Policy (2005-2016). Earlier, he worked in the World Bank (1971-82) where he led the World Development Report team for 1979 and was Research Adviser to the Bank (1979-82). He returned to India in 1982 as Senior Fellow, National Institute of Public Finance and Policy, before joining the Government as Economic Adviser, Ministry of Finance (1985-90).

Since September 2023 he has been the Chancellor of the Central University of Andhra Pradesh. Since 2001 he has been Honorary Professor at the Indian Council for Research on International Economic Relations. He has authored eleven books (mostly on Indian economic issues and policies) and a number of scholarly articles in academic journals. His two latest books, published in 2021, are *India's Economy, 2015-2020: Contemporary Commentary* (Academic Foundation) and *An Economist at Home and Abroad* (Harper Collins). Since 2003 he has been a regular columnist for the Business Standard. He was non-executive Chairman of Kotak Mahindra Bank for 12 years (2006-2018), one of India's newest and most successful private commercial banks.

Shankar Acharya has a BA from Oxford and a PhD from Harvard University. He has been Senior Visiting Fellow at Merton College, Oxford (2000) and Stanford University (2002) and Resident Scholar at Bellagio, Rockefeller Foundation (2013).

MONTEK SINGH AHLUWALIA

Montek Singh Ahluwalia, an economist, and civil servant, was former Deputy Chairman of the Planning Commission, Government of India. He joined the Government in 1979 as Economic Adviser in the Ministry of Finance, after which he held a series of positions including Special Secretary to the Prime Minister; Commerce Secretary; Secretary in the Department of Economic Affairs; Finance Secretary in the Ministry of Finance; Member of the Planning Commission; and Member of the Economic Advisory Council to the Prime Minister. In 2001, he was appointed as the first Director of the newly created Independent Evaluation Office of the International Monetary Fund. He resigned from that position in 2004 to take up the position of Deputy Chairman of the Planning Commission which he held from 2004 to 2014.

Montek S. Ahluwalia has been a key figure in Indian economic policy. He writes on various aspects of development economics and has been published in prominent Indian and international journals and books. He co-authored *Re-distribution with Growth: An Approach to Policy*, which, published in 1975, was a path-breaking book on income distribution. In February 2020, he published his book, *Backstage: The Story Behind India's High Growth Years*, an insider's account of policymaking from 1985 to 2014.

For his outstanding contribution to economic policy and public service, he was conferred the prestigious 'Padma Vibhushan' in 2011, India's 2nd highest civilian award for exceptional and distinguished service.

He graduated from Delhi University and holds an MA and an MPhil in Economics from Oxford University. He is an Honorary Fellow of Magdalen College, Oxford.

DEWI FORTUNA ANWAR

Dewi Fortuna Anwar is an Academician of the Social Science Commission of the Indonesian Academy of Sciences (AIPI); a Research Professor at the Research Center for Politics, National Research and Innovation Agency (BRIN); Chairman of the Board of Directors of The Habibie Center (THC); and Co-Founder of the Foreign Policy Community of Indonesia (FPCI). From 2001-2010 she was Deputy for Social Sciences and Humanities, Indonesian Institute of Sciences (LIPI). From 2010-2017 Dewi served as a Deputy Secretary to the Vice-President of the Republic of Indonesia. Dewi was a Distinguished Visiting Professor at the S. Rajaratnam School of International Studies (RSIS), NTU, Singapore from 2017-2018; and a Distinguished Visiting Professor at SAIS, Johns Hopkins University in 2007. She has

written widely on Indonesia's foreign policy and ASEAN regional political and security issues. Dewi sits and has sat on a number of national and international advisory boards: Centre for Humanitarian Dialogue (HD) since 2019; Stockholm International Peace Research Institute (SIPRI) from 2010-2020; and the UN Secretary General Advisory Board on Disarmament Matters from 2008-2012.

She obtained her PhD from Monash University, Melbourne, while her MA and BA (Hons) were from SOAS, University of London.

MUHAMAD CHATIB BASRI

Muhamad Chatib Basri, is a former Minister of Finance of Indonesia and former Chairman of the Indonesian Investment Coordinating Board. He currently serves as the Co-chair of the Pandemic Fund (hosted by the World Bank with technical support from WHO). He is the Chairman of the PT Bank Mandiri tbk. and also, Chairman of the PT XL-Axiata tbk.

He is also a member of numerous International Advisory councils including the World Bank Advisory Council on Gender and Development; the Independent High-Level Expert Group on Climate Finance for COP27 and 28; and the Climate Overshoot Commission. As part of the adjunct faculty of distinguished former and current Ministers to the Harvard Ministerial Leadership Forum at Harvard University, Muhamad Chatib Basri teaches regularly on this program. He also sits on the Governing Board of the Lee Kuan Yew School of Public Policy, National University of Singapore.

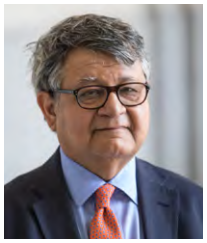
In addition to his various leadership positions, he teaches at the Department of Economics, University of Indonesia and co-founded CReco Research, an economic consulting firm based in Jakarta. He was an Ash Centre Senior Fellow at the Harvard Kennedy School (2015-2016); a Pacific Leadership Fellow at the Centre on Global Transformation, University of California at San Diego (2016); NTUC Professor of International Economic Relation, RSIS, NTU, Singapore (2016); and Thee Kian Wie Distinguished Visiting Professor at the Australian National University (2016-2017).

His expertise is International Trade, Macroeconomics and Political Economy. He is the author of a number of papers in international journals and actively writes for various leading newspapers and magazines in Indonesia.

AMITA BATRA

Amita Batra is Senior Fellow at the Centre for Social and Economic Progress (CSEP), on leave from Jawaharlal Nehru University (JNU) where she is Professor of Economics at the Centre for South Asian Studies, School of International Studies. She was also Senior Visiting Fellow at the Department of Political Economy, University of Sydney in 2018 and Visiting Professor at the University of Edinburgh in 2013. She has been Visiting Professor at the Indian Institute of Management-Ahmedabad. Amita Batra served as a member of the Advisory Group for the G20 Finance Track Agenda, Ministry of Finance, Government of India (January 2022-December 2023). She is on the editorial committee/board of several national/international journals. She writes a monthly column 'Straight Talk' for the Business Standard, a leading financial daily in India. She has written and published extensively on economic integration, preferential trade agreements, international trade and India's trade policy issues. Her latest book is titled *India's Trade Policy in the 21st Century*, Routledge, London, 2022.

She has an MA, MPhil, PhD from Delhi School of Economics, University of Delhi.



SUMAN BERY

Suman Bery is Vice-Chairperson, NITI Aayog. He has served as Director-General of the National Council of Applied Economic Research (NCAER) in New Delhi and Chief Economist of Shell International, based in The Hague. He has also served as a member of the Prime Minister's Economic Advisory Council; India's Statistical Commission; and Reserve Bank of India's Technical Advisory Committee on Monetary Policy. His professional writings include contributions on the political economy of reform, financial sector and banking reform, and energy trends and policy.

He holds an undergraduate degree from the University of Oxford and did graduate work in public policy at Princeton University.

JAIMINI BHAGWATI

Jaimini Bhagwati is a former Indian Foreign Service officer and a financial sector and derivatives specialist. He was appointed India's High Commissioner to the United Kingdom in 2011. Immediately prior to this appointment, Bhagwati was India's Ambassador to the European Union, Belgium, and Luxembourg. Earlier, he was an Additional Secretary in the Ministry of External Affairs and prior to that, Joint Secretary (Capital Markets and Pension Reforms) in the Ministry of Finance and he served in the Department of Atomic Energy in the mid-1980s. He was employed for eleven years in the World Bank Treasury in Washington DC in two phases between 1991 and 2005 and his responsibilities included issuance of World Bank bonds and pricing of associated derivatives transactions. After retiring from the Government of India, he was the Reserve Bank of India Chair Professor at ICRIER from 2014 until 2018 and currently he is a Distinguished Fellow at CSEP.

He has a Master's in Physics from St. Stephen's college in Delhi and also holds a Master's in Finance from Massachusetts Institute of Technology (MIT) and a PhD from Tufts University. In 2019, he authored *The Promise of India: How Prime Ministers Nehru to Modi Shaped the Nation* (1947–2019). He has authored columns in several newspapers.

As of February 2024, he is a Board Member of the Infrastructure Development Finance Company (IDFC) Limited, IDFC First Bank and Apollo Tyres Ltd.

LAVEESH BHANDARI

Laveesh Bhandari is President and a Senior Fellow at CSEP. He has published widely on subjects related to sustainable livelihoods; industrial, economic, and social reforms in India; economic geography; and financial inclusion. He received his PhD in Economics from Boston University for which he was awarded the Best Thesis in International Economics. He has taught economics at Boston University and IIT Delhi. Apart from applied economics research, he has built, seeded, and exited from three companies in the research, analytics, and digital domains, including Indicus Analytics, a leading economic research firm. Currently, he is conducting research on issues of inclusion, India's energy transition, and how it will impact the government as well as the economy.

KIRIDA BHAOPICHITR

Kirida Bhaopichitr joined the Thailand Development Research Institute (TDRI), a leading independent think tank in Thailand, in 2015. She is currently the Director of TDRI Economic Intelligence Service (EIS), which is TDRI's corporate membership program. She leads the preparation of content for the monthly seminars for corporate members on issues that are of high relevance and interest for business. Her specialisation spans monitoring and analysing developments of the global and Thai economies which includes the macroeconomic environment, geopolitical developments, sustainability issues, demographic changes, and technological development issues. She is currently also an independent Director of the Government Housing Bank; Eastern Polymer Group Plc.; Khon Kaen University Council; Economics Faculty of Thammasat University; and Economics Data Committee of the National Statistics Office of Thailand.

From 1999 to 2015, she was a Senior Economist at the Macroeconomics and Fiscal Policy Management Global Practice and the Country Economist for Thailand of the World Bank Group. A recognised fixture in economic and business circles, she appears regularly in local and international media and speaks at public and private high-level forums and conferences in Thailand and overseas.

She holds a PhD in Economics from Cornell University (USA).

RAJESH CHADHA

Rajesh Chadha is a Senior Fellow at CSEP. He was formerly a Professor and Research Director at the National Council of Applied Economic Research (NCAER) and, prior to that, an Associate Professor of Economics at Hindu College, University of Delhi. Rajesh was the Managing Editor of *Margin: The Journal of Applied Economic Research*, NCAER's international, peer-reviewed journal, from 2012 to 2019. He has provided research support to the Indian Government on multiple projects. He played a key role in the research projects sponsored by the Governments of India, Australia, the UK, and various international organisations. Rajesh has worked extensively on the issues of international trade, FDI, and non-fuel minerals and mining in India.

He has been a visiting scholar at the Universities of Michigan, Melbourne, and Monash and a visiting faculty member at many prestigious academic and research institutes in India. Rajesh was nominated as GTAP Research Fellow (2004-2007) by the Global Trade Analysis Project (GTAP), Purdue University. His recent work encompasses assessing the criticality of minerals and projecting their needs for green technologies. Rajesh received his PhD in Economics from the Indian Institute of Technology, New Delhi.

RUDRA CHAUDHURI

Rudra Chaudhuri is the Director of Carnegie India. His research focuses on the diplomatic history of South Asia, contemporary security issues, and the increasingly important role of emerging technologies in diplomacy and statecraft. He works on comparative models of cross-border data flows and how data is treated by national capitals in inter-state and multilateral negotiations.

He is the author of *Forged in Crisis: India and the United States Since 1947* (published in the UK by Hurst, in 2013, and in the US and South Asia by Oxford University Press and Harper Collins, respectively, in 2014). He is the editor of *War and Peace in Contemporary India* (published in the UK by Routledge). His research has been published in scholarly journals like *International History Review; Diplomacy and Statecraft; Journal of Strategic Studies; International Affairs; RUSI Journal; India Review; Defense Studies*, along with other academic and policy-focused journals. He is also an occasional commentator on issues of public policy in the media.

He has served as a Lecturer and a Senior Lecturer at the Department of War Studies at King's College London from 2009 to 2022 (on leave since 2018). In 2012, he established the UK Foreign, Commonwealth, and Development Office's (FCDO) Diplomatic Academy for South Asia at King's College London. He served as its Founding Director from 2013 to 2022. He is also a Visiting Professor of International Relations at Ashoka University, New Delhi. He previously taught at the UK Joint Services Command and Staff College. He holds a PhD in War Studies from King's College London.

SUTHIPHAND CHIRATHIVAT

Suthiphand Chirathivat is Professor Emeritus of Economics, Chulalongkorn University and Executive Director, the CENTRAL Group. Until recently, he was Executive Director of ASEAN Studies Center and Chairman of Chula Global Network, Chulalongkorn University. Previously, he was also Dean at the Faculty of Economics; Chairman of the PhD Program in Economics; Chairman of the Economics Research Center and Center for International Economics. He used to hold various roles as advisor to the Prime Minister of Thailand; Ministry of Foreign Affairs; Ministry of Finance; Ministry of Commerce; Ministry of Transport and Communications, thus including the Economic Affairs Committee and Foreign Affairs Committee of the Thai Parliament. He also offered his expertise to advise a number of international institutions working for the region.

His academic interests are international trade, investment, finance, regional integration and development, and emerging issues in Asia in relation to the global economy and society. Recent publications include *China's Rise in Mainland ASEAN: New Dynamics and Changing Landscape* (co-eds) (World Scientific 2019); *China's Rise in Mainland ASEAN: Regional Evidence and Local Responses* (co-eds) (World Scientific 2021); *China's Belt and Road Initiative in ASEAN: Growing Presence, Recent Progress and Future Challenges* (co-eds) (World Scientific 2022); *ASEAN-India: Strengthening Partnership and Post-Pandemic Future* (co-eds) (KW Publishers 2022); and *Between the Two Oceans of Indo-Pacific: Strengthening Myanmar-Thailand Southern Corridor* (SAGE Publisher 2022). He used to be Co-executive Editor of the Journal of Asian Economic Integration; Vice-President, East Asia Economic Association; advisory board of ASEAN Economic Bulletin and Asian Business and Management.

Suthiphand Chirathivat holds a Doctorat en Economie from the University of Panthéon-Sorbonne, Paris I. He also serves as Honorary President of the Association of Former Students in France, Thailand.

YOON-JE CHO

Yoon-Je Cho has been a member of the Monetary Policy Board of the Bank of Korea since 2020. He was a Professor of Economics at Sogang University from 1997 to 2016, except for the period when he also served as the Chief Economic Advisor to President (2003-2005), the Korean Ambassador to the UK (2005-2008) and the Korean Ambassador to the United States (2017-2019). Before he joined the Sogang University in 1997, he had worked as senior economist at the World Bank and IMF (1984-

1993). He graduated from Seoul National University (BA in Economics) and holds a PhD in Economics from Stanford University. His major areas of interest include international finance, macroeconomics, economic development and political economy. He has published many articles in professional journals such as *Journal of Money, Credit, and Banking*; *Journal of Development Economics*; *Oxford Review of Economic Policies*; and published many books about the Korean economy.

BYUNG-IL CHOI

Byung-il Choi has been the President of Korea Foundation for Advanced Studies (KFAS) since September 2020. He is also a professor and the former Dean of the Graduate School of International Studies, Ewha Womans University. As a renowned scholar in the field of international trade and US-China relations, he took various leadership roles, including President of Korea Economic Research Institute (2011-2014), a think tank representing the Korean business sector. He served as the President of the Korea International Economic Association; the President of the Korea Association of Negotiation Studies; and the President of the Korean Association of Trade and Industry Studies. In December 2023, he was elected as an international fellow of the Royal Swedish Academy of Engineering Sciences.

Prior to joining academia, he was the Korean chief negotiator for the WTO basic telecom negotiations (1994-1997) and trade negotiator for service agreement and the telecom annex at the Uruguay Round, the Korea-US telecom agreement, and the Korea-EU telecom agreement. He led the Korean initiative of the Asia-Pacific Information Infrastructure (APII) at the 1995 APEC Summit.

His books include *Politics of East Asian Free Trade Agreements: Unveiling the Asymmetry between Korea and Japan* (2021); *US-China Competition: Who Will Rule the World?* (2019); *Northeast Asia in 2030: Forging Ahead or Drifting Away* (2018); *China, New Paradigm* (2016); *The KORUS FTA: Against All Odds* (2006); and *The Success and Failure of Trade Negotiations of Korea* (2004).

He received his BA from Seoul National University and PhD in Economics from Yale.

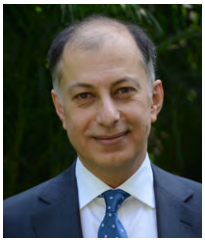
NITIN DESAI

Nitin Desai was a national and international civil servant and a global advocate for sustainable development. After teaching at two UK Universities and serving briefly as an economic consultant he began his public service career with the Planning Commission in 1973, served as Secretary of the Economic Advisory Council to the Prime Minister and went on to become Secretary and Chief Economic Adviser in the Ministry of Finance in 1988.

At the international level he was a Senior Adviser, the Brundtland Commission, where he introduced the concept of sustainable development. He joined the UN in 1990 as Deputy Secretary General of Development (Rio de Janeiro, Brazil, 1992) and was appointed as Under Secretary General at the UN in New York in 1993 and stayed in that post till 2003. During this period, he led the work on sustainable development and in other economic and social areas.

After his retirement, Nitin Desai was appointed as a Special Adviser to the Secretary General on Internet Governance and in that capacity chaired the group which organised the annual Intent Governance Forum, a position he occupied till 2010. In July 2004, he was inducted as an Honorary Fellow of the London School of Economics and Political Science.

After his retirement, he has been involved in a variety of public policy activities, nationally and internationally, dealing with economic policy, climate change, energy, environment, internet governance and security. He writes a monthly column in a daily newspaper, the Business Standard.



NAUSHAD FORBES

Naushad Forbes is Co-Chairman of Forbes Marshall, India's leading process and energy efficiency company. He is Chairman, Ananta Aspen Centre, and Centre for Technology, Innovation and Economic Research (CTIER).

Forbes Marshall helps Industry build and sustain highly efficient plants by reducing waste, optimising process and energy efficiency, and complying with regulatory requirements. Forbes Marshall has consistently ranked as a Great Place to Work and is a multinational with Indian roots.

Naushad was an occasional teacher at Stanford University from 1987 to 2004 where he developed courses on Technology in Newly Industrializing Countries. He received his Bachelor's, Master's and PhD Degrees from Stanford.

Naushad is on the board of several educational institutions and public companies. He has long been an active member of the Confederation of Indian Industry (CII) and was President of CII for 2016–17. He is a founding member of Nayanta University, a full-service university being spearheaded by CII.

Naushad's book, *The Struggle and the Promise: Restoring India's Potential*, was published by Harper Collins in 2022.

AKIO FUJII

Since he joined in 1985, Akio Fujii has held various positions with Nikkei, including being the Bank of Japan and Ministry of Finance correspondent, New York Bureau Correspondent, Chief Correspondent for economic affairs at Washington Bureau from 1998 to 2002, London-based Senior Writer from 2009 to 2011 and Washington Bureau Chief from 2012 to 2014.

He has also served as Senior Editor for International News Department; Editor-in-Chief for Nikkei Asian Review from 2015 to 2016; Senior Managing Editor, Head of Global News Operations from 2016 to 2017; and Senior Editorial Writer from 2017 to 2020.

He covered issues related to global governance, economic policy and international finance. His main publications are: *G20-The Great Game in 21st Century* (2011, Nikkei); *Yellen's Federal Reserve* (2013, Nikkei); *Introduction for Japan's Economy* (2018, Nikkei); *Ambition of Libra* (2019, Nikkei); *New Introduction for Japan's Economy* (2021, Nikkei); and *The Bubble of Justice and Japan's Economy* (2023, Nikkei).

Fujii obtained his BA in Economics from Waseda University in Tokyo.

CHETAN GHATE

Chetan Ghate is the Director of the Institute of Economic Growth in New Delhi. He is also a Professor of Economics in the Economics and Planning Unit, Indian Statistical Institute (ISI) – Delhi, since 2003. He received his PhD in Economics from Claremont Graduate University, California, in 1999. He completed his MA in Economics from the Delhi School of Economics in 1995. His research focus is in the fields of macroeconomics, monetary economics, economic growth and development, and the Indian macroeconomy. In 2014, he was awarded the Mahalanobis Memorial Gold Medal, given to the best research economist in India under the age of 45.

Chetan has held several visiting faculty positions in India and abroad and has been closely involved with the Reserve Bank of India in an advisory capacity. He was a member of the Reserve Bank of India's first Monetary Policy Committee (MPC) until October 2020. From 2012-2013 he was the Reserve Bank of India Chair Professor in Macroeconomics at ICRIER (New Delhi). From February 2013 to September 2016, he was a member of the Technical Advisory Committee (TAC) for monetary policy at the Reserve Bank of India. In September 2013, he served as a member of the Expert Committee to Revise and Strengthen the Monetary Policy Framework. Chetan chairs the academic advisory board of the Reserve Bank of India Academy and serves on the editorial board of the RBI Occasional Paper Series.

Chetan is an external affiliate of the Centre for Research in Macroeconomics and Macro-Finance at Swansea University (Wales, UK). He is a member of the CII Economic Affairs Council. He is also a member of the Macro Finance Society.

SHISHIR GUPTA

Shishir Gupta is a Senior Fellow and Chief Operating Officer at CSEP in New Delhi. His work focuses on many aspects of the Indian economy, including economic growth, governance and institutions, urbanisation, and sub-national reforms, among others. Before joining CSEP in August 2020, Shishir was a Fellow with the McKinsey Global Institute for 14 years, where he led multi-ethnic teams in India and the US on policy research and client studies across multiple domains. He has written widely on these topics in MGI reports and research papers as well as in popular media. He is an economist by education, with an MA and MPhil from the Delhi School of Economics.

DENIS HEW

Denis Hew is a Senior Research Fellow at the Centre on Asia and Globalisation, Lee Kuan Yew School of Public Policy, National University of Singapore. Prior to taking up his current appointment, he was Director of the APEC Policy Support Unit (PSU) from 2011 to 2022. PSU is the research arm of the APEC, which is a regional grouping that promotes trade and investment liberalisation and facilitation in the Asia-Pacific region. He also spent two years in the Asian Development Bank (ADB) in its Southeast Asia department, where he managed technical assistance programs on regional cooperation and integration.

From 2001 to 2008, Denis Hew was Senior Fellow and Regional Economic Studies Coordinator at the Institute of Southeast Asian Studies (ISEAS) Singapore, which is one of the region's oldest and most established research institutes. During his time at ISEAS Singapore, he was also the Managing Editor of the ASEAN Economic Bulletin, an academic journal that focuses on policy-relevant economic issues in Southeast Asia.

Denis Hew is an economist by training and holds a Bachelors (Hons) in Economics from the University of Warwick, United Kingdom and a Master's and PhD in Finance from the University of Manchester, United Kingdom.

YUSUKE HONGO

Yusuke Hongo is a General Manager, Corporate Marketing Division of Mitsui O.S.K. Lines, Ltd. (MOL) and is responsible for global marketing strategy and business intelligence.

He joined MOL in December 2008 from the manufacturing industry and started his career in the Tanker Division. He engaged in the energy business until March 2023. He was in charge of the LPG carrier business for 8 years, including secondment to subsidiary in Singapore responsible for chartering and operation. Then he took on the role of research and business development in the Energy Business Strategy Division for 3 years. He carried out energy-related new business development, such as ethane carrier, off-shore wind turbine installation, etc. Then, he led the LNG carrier team, mainly in charge of Chinese business and took the role of Deputy General Manager of Liquefied Gas Unit2 which handles overseas LNG projects.

In April 2023, he was appointed as head of the Corporate Marketing Division.

KRISTY HSU

Kristy Tsun-Tzu Hsu is the Director of the Taiwan ASEAN Studies Center (TASC), Chung Hua Institution for Economic Research (CIER), Taiwan, and Non-Resident Senior Research Fellow at Taiwan-Asia Exchange Foundation. Her areas of research interests include: international trade policy and economic/trade law, economic integration, Southeast Asia study and dispute settlement. She obtained her J.D. from the School of Law, Soochow University, Taiwan. She provides consultation to the Taiwan government on external economic policy,and is involved in the government's WTO and FTA negotiations by participating in government-commissioned research projects and providing consultation and has led research projects of the joint/separate Economic Cooperation Agreement (ECA) feasibility study with a number of countries. She also serves as Committee member at the Gender Equality Committee, Executive Yuan; Expert Committee member at the Overseas Community Affairs Council, Executive Yuan; Committee member at International Affair Committee, Taipei City Government; and adviser to a number of business and industrial associations in Taiwan.

KEISUKE IIDA

Keisuke Iida is Dean and Professor at the Graduate School of Public Policy at The University of Tokyo. His area of specialisation is International Political Economy. His major publications include *International Monetary Cooperation among the United States, Japan and Germany* (1999); *Legalization and Japan: The Politics of WTO Dispute Settlement* (2006); *International Political Economy* (in Japanese, 2007); *The Future of Economic Hegemony* (in Japanese, 2013); and *Japan's Security and Economic Dependence on China and the United States* (2017). He has published numerous articles in international journals such as *International Organization, Public Choice, International Studies Quarterly, the Journal of Conflict Resolution,* and so on. His research interests include the politics of trade, the political economy of financial crises, and the interactions between security and economics. He is President of the Japan

Association of International Relations (JAIR). He received his PhD in Political Science from Harvard University. He formerly taught at Princeton University and Aoyama Gakuin University. He has been a pre-doctoral fellow at Brookings Institution; a visiting scholar at University of California, Berkeley; and an academic associate in the Program on US-Japan Relations at Harvard University.

TAKATOSHI ITO

Takatoshi Ito, Professor, School of International and Public Affairs, Columbia University, and Adjunct Professor in the summer months at GRIPS Tokyo, has taught extensively both in the United States and Japan since finishing his PhD in Economics at Harvard University in 1979. He taught at the University of Minnesota; Hitotsubashi University; and the University of Tokyo, and he was President of the Japanese Economic Association in 2004.

Ito served as Senior Advisor in the Research Department at the International Monetary Fund, 1994-97, as Deputy Vice Minister for International Affairs at the Ministry of Finance of Japan, 1999-2001 and a member of the Prime Minister's Council on Economic and Fiscal Policy, 2006-08. He is an author of *The Japanese Economy*, 2nd edition, and many other books and refereed journal articles. He was awarded the National Medal with Purple Ribbon for his excellent academic achievement.

EMMANUEL JIMENEZ

Emmanuel Jimenez is Director General, Independent Evaluation Department of the Asian Development Bank (ADB). Reporting to ADB's Board of Directors, his responsibilities include assessing ADB's development effectiveness, as well as providing lessons to inform ADB operations. Prior to joining ADB, he worked as an Independent Consultant who provides advice and conducts research and training on evaluation, economics, development management, education and social protection programs. Prior to this, he was the Executive Director and CEO of 3ie. In this role, he led and conducted impact evaluations and evidence reviews. He provided strategic direction to the organisation as it championed the generation and use of evidence to guide decisions regarding policies and programs that improve lives in low and middle-income countries. Previously, he had worked for 30 years in the World Bank Group (WBG) and held several senior management roles across several departments such as the Independent Evaluation Group (IEG); the South Asia, East Asia, and Pacific Groups; and the Policy Research Department.

Emmanuel Jimenez was a faculty member of the Economics Department of Western University in London, Canada. Throughout his career, he has published extensively, including articles in peer-reviewed professional journals, books and reports on economic development and served as managing editor of several international development journals.

Born in the Philippines, he is a national of Canada. He holds a Doctorate in Economics from Brown University in the United States, a Master's degree in Economics from University of Toronto in Canada, and a Bachelor's degree in Economics from McGill University in Canada.

SUNJAY J. KAPUR

Sunjay J. Kapur is the Chairman of Sona BLW Precision Forgings Limited (Sona Comstar), a global mobility technology company founded in 1995. Headquartered in Gurugram, India and with nine manufacturing and assembly facilities, R&D centres and engineering capability centres worldwide, the company specialises in automotive systems and components, catering to OEMs and the burgeoning Electric Vehicle market. Sunjay is an influential figure in the automotive industry, serving in various leadership roles, including Past-President of the Automotive Component Manufacturers Association of India. He is also deeply involved in industry associations such as the Confederation of Indian Industry (CII), serving as the Chair to the CII Europe Committee. He is also a member of the Governing Board and Council of CII VLFM (Visionary Leadership for Manufacturing) Programme, the Advisory Board of CII-Triveni Water Institute and a Council Member of the All-India Management Association. Sunjay is also a member of EO (Entrepreneurs' Organization) Delhi Chapter. Beyond business, Sunjay is committed to nurturing entrepreneurship and sports development. He notably served as Global Chairman of the Entrepreneurs' Organization and is a Member of the Board of Governors of his alma mater, The Doon School, India. Sunjay holds degrees from the University of Buckingham and Harvard Business School.

SANJAY KATHURIA

Sanjay Kathuria is a Visiting Senior Fellow in the Growth, Finance and Development vertical at CSEP. He has a vast experience of more than 40 years and is recognised as a pre-eminent thinker and commentator on economic development, growth and integration in South Asia. His research interests and writings have focused on South Asia, economic growth and development, industrial policy and competitiveness, trade and globalisation, regional integration, the economics of small states, and gender issues, among others.

He is also Visiting Expert with the United States Institute of Peace. He teaches in both the US and India, as Adjunct Professor, Georgetown University, and Visiting Faculty, Ashoka University. He is also a Non-Resident Senior Fellow at the Institute of South Asian Studies at the National University of Singapore and a Global Fellow at the Wilson Centre in Washington, DC.

Earlier, Sanjay Kathuria was Senior Visiting Fellow at the Centre for Policy Research, New Delhi. He was a Lead Economist at the World Bank in Washington, DC, where he spent 27 years working on South Asia, Latin America and the Caribbean, and Eastern Europe, including field assignments in New Delhi and Dhaka. Before joining the World Bank, he was a Fellow at the Indian Council for Research on International Economic Relations in New Delhi, from 1982 to 1992.

He holds a PhD in Economics from Oxford University as an Inlaks Scholar. He graduated from St. Stephen's College, Delhi, and completed his Master's at the Delhi School of Economics.

Apart from many books and reports published at the World Bank, his writings have featured in Foreign Policy, Hindustan Times, The Indian Express, The Wire, Daily FT (Sri Lanka), Business Standard, among others.

He is currently working on a new book on *The Future of South Asia*.

BILAHARI KAUSIKAN

Bilahari Kausikan is currently Chairman of the Middle East Institute, an autonomous institute of the National University of Singapore. He has spent his entire career in the Ministry of Foreign Affairs. During his 37 years in the Ministry, he served in a variety of appointments at home and abroad, including as Ambassador to the Russian Federation; Permanent Representative to the UN in New York; and as the Permanent Secretary to the Ministry. Raffles Institution, the University of Singapore and Columbia University in New York all attempted to educate him.

DEEPALI KHANNA

As the Head of The Rockefeller Foundation's Asia Regional Office, Deepali Khanna oversees efforts to amplify the Foundation's impact and initiatives to make opportunities universal and sustainable. She leads the efforts to build and sustain networks with different institutions, leverage financing and collaborations, innovative grants, thought leadership and information on trends driving the Asian continent's development.

In her role, Deepali was leading engagement with India's G20 presidency to advance global economic equity, public health, clean energy, and sustainable food systems. Deepali also served as Co-chair of G20 India's Business20 task force on Financing for Global Economic Recovery and as Co-chair of G7 Japan's Think7 task force on Development and Economic Prosperity. Deepali is also on the Digital Green Foundation Board.

She regularly writes on issues relevant to sustainable development goals and the importance of South-South cooperation in regional and national publications across Asia, including Forbes Asia, The Straits Times, and The Bangkok Post. She is a regular speaker at regional platforms such as the Asia Venture Philanthropy Network, Philanthropy Asia Summit, and World Sustainable Development Summit, among others.

Prior to joining The Rockefeller Foundation, Deepali held multiple leadership positions at The MasterCard Foundation, Plan International managing operations across several continents.

RENU KOHLI

Renu Kohli is an economist with research and practitioner experience on macroeconomic policies and issues. She has previously worked with the RBI, the IMF and think tanks including ICRIER and the Institute of Economic Growth. Her work has focused on financial sector liberalisation, capital flows and exchange rate management in emerging markets with special India focus, international macroeconomic coordination, and recently, the macroeconomic impact of decarbonisation in India.

She has been published in refereed journals such as the Review of Development Economics, Journal of Development Studies, Journal of Asian Economics, Oxford University Press, IMF Working Papers, RBI Staff papers and contributed to edited volumes. She has exposure to multilateral surveillance including Article IV missions; as short-term expert with IMF Institute, her training missions include courses on financial programming and policies and macroeconomic diagnostics. She has wider engagement with the private financial sector and investors through talks, presentations and consultation on Indian macroeconomic policies. She also serves as an independent director on the board of NCML Ltd and NFIN.

NAGESH KUMAR

Nagesh Kumar is the Director and Chief Executive of the Institute for Studies in Industrial Development (ISID), a New Delhi-based public-funded, policy think tank. Prior to taking up this role in May 2021, Nagesh served as Director at the United Nations Economic and Social Commission of Asia and the Pacific (UNESCAP), headquartered in Bangkok, holding several senior management roles during 2009-21, including as its Chief Economist. Nagesh also serves as the Non-Resident Senior Fellow at the Boston University Global Development Policy Centre (BU/GDPC), Boston, USA.

During 2002-09, Nagesh served as the Director-General of the Research and Information System for Developing Countries (RIS), a policy think tank of the Government of India. He has also served as an Economist at UNU/INTECH (now UNU/MERIT) in Maastricht, the Netherlands during 1993-98. Nagesh has served on the boards of the EXIM Bank of India; the International Centre for Trade & Sustainable Development (ICTSD), Geneva; and the South Asia Centre for Policy Studies (SACEPS), Kathmandu.

Nagesh has researched extensively on different aspects of international trade, investments, technology and sustainable development, resulting in the publication of 18 books and over 120 peer-reviewed papers. An Economics PhD from the Delhi School of Economics, Nagesh is a recipient of the Exim Bank's first International Trade Research Award and the GDN's Research Medal.

KEUN LEE

Keun Lee is Distinguished Professor of Seoul National University (economics), a Fellow of the CIFAR (Canada), and the Chairman of the Center for Economic Catch-up. He is also an Editor of Research Policy, and Associate Editor of Industrial and Corporate China. He is the winner of the 2014 Schumpeter Prize for his monograph on *Schumpeterian Analysis of Economic Catch-up* (2013 Cambridge Univ. Press), and also the 2019 Kapp Prize by EAEPE. He was also awarded the title of EBES Fellow of the Year 2023 by the EBES. He writes regularly for Project Syndicate. Previously, he served as the Vice-Chairman of the National Economic Advisory Council for the chair and President of Korea; as the President of the International Schumpeter Society (2016-18); a member of the Committee for Development Policy of UN (2013-18); and a GFC member of the World Economic Forum (2016-19). He obtained a PhD in Economics from the University of California, Berkeley. His total citations received is about 13,500 with H-index of 55 and I-10 index of 145 (Google Scholar).

VIKRAM SINGH MEHTA

Vikram Singh Mehta is Chairman and Distinguished Fellow of CSEP. He was Executive Chairman of the think tank, Brookings Institution India Center and Senior Fellow at Brookings Institution from 2012 to 2020. Prior to that, he was Chairman of the Shell Group of Companies in India (1994–2012); Chief Executive of Shell Markets and Shell Chemicals, Egypt (1992-1993); and Advisor, Strategic Planning to the State-owned company, Oil India (1984-1988). He started his career by joining the Indian Administrative Service in 1978. He resigned from the service in 1980.

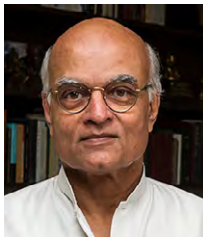
Vikram is an independent, non-executive, director of Larsen and Toubro Ltd, Mahindra and Mahindra Ltd, Colgate Palmolive India Ltd, Apollo Tyres, Global Health Ltd, Indigo Airlines and Jubilant Foods. Vikram is on the Global Advisory Board of Macro Advisory partners.

Vikram was the recipient of the Asia House's "Businessmen of the Year" award for 2010. He also received the Asia Centre for Corporate Governance and Sustainability Award for "Best Independent Director in India" in 2016.

Vikram is editor of the books *The Next Stop: Natural Gas and India's Journey towards a Clean Energy Future* and *Anchoring Change: 75 years of Grassroots Interventions That Made a Difference*. Both books were published by Harper Collins. He has a BA (Mathematics Hons) from St. Stephen's College, Delhi University; BA/MA (Political and Economics Hons), Magdalen College, Oxford University; and MA (Energy Economics), Fletcher School of Law and Diplomacy, Tufts University.

NISHAN DE MEL

Nishan de Mel is the Executive Director and Head of Research of Verité Research, a think tank that provides analytical research and advisory services on economic, political and legal issues in Sri Lanka and Asia. He is an economist with extensive academic, policy, and private-sector experience. He has been a Member of the Presidential Task Force on Health Sector Reform; Presidential Committee on Tobacco, Alcohol and Dangerous Drug Regulation; and the National Steering Committee on Social Security. He has also served as the Executive Director of the International Centre for Ethnic Studies (ICES) and on the Board of the Sri Lanka Foundation Institute, among others. Internationally, Nishan has held several governing, teaching, and research positions, including as Lecturer in Economics at the University of Oxford, UK. His undergraduate degree in Economics is from Harvard University, USA. He earned his Master's and doctoral degrees in Economics at the University of Oxford where he was a Chevening scholar.



SHIVSHANKAR MENON

Shivshankar Menon is a Distinguished Fellow at CSEP, Visiting Professor at Ashoka University and Chair of the Ashoka Centre for China Studies. Menon served as National Security Advisor to the Indian Prime Minister (2010-2014); Foreign Secretary of India (2006-2009); and as Ambassador and High Commissioner of India to Israel (1995-1997), Sri Lanka (1997-2000), China (2000-2003) and Pakistan (2003-2006). He has served in the mission to the IAEA in Vienna and in the Department of Atomic Energy in Mumbai.

He was also a Distinguished Fellow with Brookings India. He has published *Choices: Inside the Making of Indian Foreign Policy* in 2016 and *India and Asian Geopolitics: The Past, Present* (Brookings Press USA, & Penguin Random House India) in April 2021.

Menon has been a Richard Wilhelm Fellow at the Center for International Studies at MIT and Fisher Family Fellow at the Belfer Center, Harvard University. In 2010, he was chosen by Foreign Policy magazine as one of the world's "Top 100 Global Thinkers." He attended the Scindia School, Gwalior and St. Stephen's College of the University of Delhi, where he studied ancient Indian history and Chinese. He speaks Chinese and some German.

ONG KIAN-MING

Ong Kian-Ming is Program Director, Philosophy Politics & Economics (PPE), at Taylor's University, Malaysia. He was a Visiting Senior Fellow at the ISEAS-Yusof Ishak Institute from March 2023 to September 2023. He is Senior Adviser to Global Counsel, an international advisory firm with offices in five countries. He is a member of the Board of Directors of the Malaysian Investment Development Authority (MIDA). He is an adviser for the Malaysia-China Chamber of Commerce (MCCC) since 2023. He is an adviser for the Federation of Malaysian Manufacturers (FMM), starting a two-year term from January 2024 to December 2025. He is an adviser for Selangor Digital School/AI Nustantara, an initiative started by the Selangor state government. He is a member of the Danish Chamber of Commerce (DANCHAM) since 2023.

He is a former two-term Member of Parliament (MP) in Malaysia from 2013 to 2022, representing the Democratic Action Party (DAP). He was the Deputy Minister of International Trade and Industry (MITI) from July 2018 to February 2020.

He is a former Fulbright Scholar and holds a PhD in Political Science from Duke University; an MPhil in Economics from the University of Cambridge; and a BSc in Economics from the London School of Economics. Prior to his political life, he was a Lecturer at UCSI University and a consultant with the Boston Consulting Group (BCG) in the Kuala Lumpur office.

RAKESH MOHAN

Rakesh Mohan is President Emeritus and Distinguished Fellow at CSEP and Member of the Prime Minister's Economic Advisory Council. He was President of CSEP from 2020-2023. Before that he was Senior Fellow at the Jackson Institute for Global Affairs and was also Professor in the Practice of International Economics and Finance at the School of Management at Yale University (2010-12). He also served as Distinguished Consulting Professor at Stanford University in 2009. Mohan was also a Distinguished Fellow with Brookings India.

He has been closely associated with the Indian economic reforms process from the late 1980s. He was Executive Director on the Board of the International Monetary Fund; Deputy Governor of the Reserve Bank of India; Secretary, Economic Affairs, and Chief Economic Adviser of the Indian Ministry of Finance; and Economic Adviser in the Ministry of Industry.

He has authored three books on urban economics and urban development; two on monetary policy: *Monetary Policy in a Globalized Economy: A Practitioner's View* (2009), and *Growth with Financial Stability: Central Banking in an Emerging Market*. His most recent book (edited) is *India Transformed: 25 Years of Economic Reforms*.

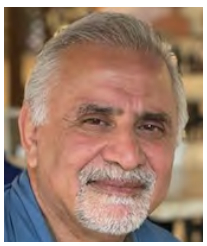
He has a BSc (Eng) from Imperial College of Science and Technology, University of London (1969); a BA from Yale University (1971); and an MA and PhD in Economics from Princeton University.

SUDIPTO MUNDLE

Sudipto Mundle is Chairman of the Board of Centre for Development Studies, India, and serves on the boards of several other organisations. He is also Visiting Faculty at the Indian School of Public Policy, New Delhi, and Non-Resident Senior Fellow at the National Council of Applied Economic Research. Formerly he was an Emeritus Professor at the National Institute of Public Finance and Policy (NIPFP). He was also a member of the Fourteenth Finance Commission, India, the erstwhile Monetary Policy Advisory Committee of the Reserve Bank of India and the National Statistical Commission, where he also acted as Chairman.

He spent much of his career until 2008 at the Asian Development Bank, Manila, where he held several positions including that of a Director in the Strategy and Policy Department as his final assignment. In his earlier career in India, he served in a number of academic institutions, including the Indian Institute of Management, Ahmedabad; the Centre for Development Studies, Trivandrum; and NIPFP, New Delhi, where he was the Reserve Bank Chair Professor. He was an Economic Adviser in India's Ministry of Finance from 1986 to 1989.

Sudipto Mundle graduated from St. Stephen's College, Delhi, in 1969 and has a PhD in Economics from the Delhi School of Economics. He was a Fulbright Scholar at Yale University, USA; a Joan Robinson Memorial Fellow at King's College, Cambridge University, UK; and has also had visiting assignments at the Institute of Social Studies at The Hague and the Japan Foundation, Tokyo. His current research interests include development economics, fiscal and monetary policy, macroeconomic modelling, forecasting and governance. He has published several books and papers in professional journals. He is also a regular columnist for the financial newspaper Mint and a life member of the Indian Econometric Society.



VIKRAM NEHRU

Vikram Nehru is Senior Fellow at the Foreign Policy Institute, Johns Hopkins University School of Advanced International Studies (SAIS), and Honorary Fellow at Exeter College, Oxford University. Between 2016 and 2023, he was Distinguished Practitioner-in-Residence at SAIS, where he taught courses on political economy and development economics with a focus on East, South, and Southeast Asia. Between 2011 and 2016, he served as the Chair in Southeast Asian Studies at the Carnegie Endowment for International Peace in Washington DC. Prior to that, he worked for three decades at the World Bank, including in a number of senior management positions. His last position there was Chief Economist and Director for poverty reduction, economic management, and private and financial sector development for East Asia and the Pacific. In this capacity, he advised East Asian governments on economic and governance issues, including macroeconomic management, public sector and public financial management, financial and private sector development, sovereign debt management and debt restructuring, and poverty reduction. His articles have appeared in numerous journals, he has contributed to several books, and he has written many op-eds and articles for leading newspapers, economic journals, and think tanks.

NITIN PAI

Nitin Pai is Co-founder and Director of the Takshashila Institution, an independent centre for research and education in public policy. His current research includes information warfare, the geopolitics of the Indo-Pacific. He teaches international relations, public policy and ethical reasoning at Takshashila's graduate programmes.

He is the author of *Nitopadesha - Moral Tales for Good Citizens* (Penguin Random House 2023) and the co-editor of *India's Marathon: Reshaping the Post-Pandemic World Order,* published in 2020. He is currently a columnist with Mint, Sakal and The Print.

He spent more than a decade as a technology policymaker in the Singapore government. Earlier in his career, Pai worked on satellite design, undersea cable projects and RF communications.

He was a gold medalist from the National University of Singapore's LKY School of Public Policy; an undergraduate scholar at Nanyang Technological University (NTU); and an alum of National College, Bangalore.

UMESH PANDEY

Umesh Pandey joined the Royal Thai Government under Prime Minister Srettha Thavisin after the government was formed in October 2023. Currently, Umesh is serving as Vice Minister to the Prime Minister's Office.

Prior to joining the government services, Umesh worked in the field of financial services and journalism for more than two decades. Umesh joined the government sector after having served as Executive Director at Nomura Singapore Ltd., the banking unit of Japanese financial powerhouse – Nomura, and at French banking giant BNP Paribas.

Prior to joining the financial sector, Umesh had a short stint in politics in 2018 when the party that he had joined got dissolved days before the March 2019 General Election by Thailand's Constitutional Court for nominating a Prime Minister candidate that the court said was 'inappropriate'.

Umesh had entered politics in 2018 after 23 years as a journalist with his last position in the journalism field as the Editor-in-Chief of Bangkok Post, Thailand's leading English-language media house. After his resignation from Bangkok Post, Umesh was instrumental in giving his input in helping a start-up team to launch an online media platform – Thai Enquirer, which has over the past 3+ years managed to become Thailand's 2nd highest read English language media outlet.

RADEN PARDEDE

Since 2014, Raden Pardede has been Senior Adviser to Coordinator Minister of Economic Affairs of Indonesia. He is also Executive Secretary of the COVID-19 Committee and National Economic Recovery Program (KPC PEN) of Indonesia since 2020. He is Founder and Managing Partner of CReco Research Institute. He is also Independent Commissioner of PT Bank Central Asia Tbk, the largest private commercial bank in Indonesia. Since 2022, he has been Independent Commissioner of BliBli.com (an e-commerce company). Raden Pardede, Gustav F. Papanek and Suahasil Nazara published *The Economic Choices Facing the Next President* in 2014. He has a PhD in Economics from Boston University, USA and a Bachelor's degree in Chemical Engineering from Bandung Institute of Technology.

THITINAN PONGSUDHIRAK

Thitinan Pongsudhirak is Professor of International Relations at Chulalongkorn University's faculty of political science and Senior Fellow at its Institute of Security and International Studies in Bangkok. He completed degrees at the University of California at Santa Barbara and Johns Hopkins School of Advanced International Studies, with a PhD from London School of Economics which won the UK's best dissertation prize in 2002. Thitinan has held visiting positions at Johns Hopkins University, Stanford University, University of Victoria in New Zealand, and Yangon University, and currently serves on several editorial boards of academic journals, including Journal of Democracy.

He has authored a host of articles, books, book chapters and over 1,000 opinion articles in media such as Project Syndicate, The Bangkok Post, The Straits Times, Nikkei Asian Review, South China Morning Post, International New York Times, and Financial Times. As an analyst on Thailand/ASEAN-Southeast Asia, his comments and views have appeared regularly in international media, including CNN, BBC, Bloomberg, Al Jazeera and NHK, among others.

Prior to his academic and think tank career, Thitinan worked for the BBC World Service and the Economist Intelligence Unit in London. His work focuses on the comparative politics and geopolitics/geoeconomics of ASEAN and the Indo-Pacific in view of the US-China rivalry and competition. In 2015, he was recognised for excellence in opinion writing by the Society of Publishers in Asia (SOPA). In March 2018, he was appointed ASEAN@50 Fellow by New Zealand's Minister of Foreign Affairs & Trade and, in May 2019, he was selected as Australia-ASEAN Fellow at Sydney's Lowy Institute. In 2021, he was appointed Senior Advisor for geopolitics with the Friedrich Ebert Foundation.

DANNY QUAH

Danny Quah is Li Ka Shing Professor in Economics and Dean at the Lee Kuan Yew School of Public Policy, NUS. His research on inequality and income mobility characterises the range of experiences across economies to suggest that a single narrative on inequality is unlikely to be correct or helpful. His work on world order takes an economic approach to international systems, studying the supply and demand of world order: what international system do the world's Great Powers wish to provide; what world order does the global community need.

Quah is a Commissioner on the Spence-Stiglitz Commission on Global Economic Transformation and on LSE's Global Economic Governance Commission. He serves on the panel of Economic Advisors, Office of the World Bank's Chief Economist; Executive Committee, International Economic Association; Advisory Board, LSE IDEAS; Eminent Advisory Council of the UNDP Bureau for Asia-Pacific; and World Economic Forum's Global Future Council for Geopolitics. He is Vice-President at the Economic Society of Singapore.

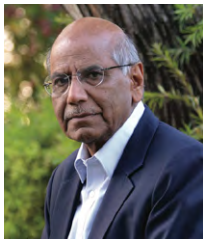
He is the author of *The Global Economy's Shifting Centre of Gravity.*

SELIM RAIHAN

Selim Raihan is a Professor at the Department of Economics, University of Dhaka, Bangladesh and the Executive Director of the South Asian Network on Economic Modeling (SANEM). He holds a PhD from the University of Manchester, UK. He is member of the Board of Directors, Global Development Network (GDN). He is an Honorary Senior Research Fellow at the University of Manchester, UK. He possesses vast expertise in empirical research on international trade, economic growth, poverty, labour market, macroeconomic policies, political economy, and climate change issues. He has published a number of journal articles, books, book chapters and working papers. He is the editor of *Thinking Aloud* - a monthly digest from SANEM. He regularly writes columns in leading English and Bengali dailies in Bangladesh. He has worked for several national and international organisations including the Asian Development Bank, the World Bank, UNDP, UNESCAP, UNCTAD, IFPRI, the Commonwealth Secretariat, FAO, European Commission, ILO, IDRC, DFID, etc. He has led and has also been a member of several regional and international research projects on trade and regional integration issues. His forthcoming edited volume from the Cambridge University Press is titled *Is the Bangladesh Paradox Sustainable?*

JANAK RAJ

Janak Raj is a Senior Fellow and leads the macroeconomic segment in the Growth, Finance and Development vertical at CSEP. He also works specifically on fiscal federalism in the health sector, climate finance and multilateral development banks (MDBs) reforms. He is currently also a member of the JM Financial Centre for Financial Research of IIM Udaipur. He has nearly four decades of experience working in the Reserve Bank of India, the International Monetary Fund (IMF) and Ministry of Finance (Department of Financial Services). Janak Raj served as an Executive Director in the Reserve Bank of India and as a member of its statutory Monetary Policy Committee (MPC). He also served as Principal Adviser of the Monetary Policy Department and International Department of the RBI and headed its Department of Economic Policy and Research. At the IMF Washington DC, he was Senior Advisor to the Executive Director for Bangladesh, Bhutan, India and Sri Lanka. He served as an RBI nominee director on the Governing Board of the BSE (formerly Bombay Stock Exchange) and as a Senior Consultant in the Department of Financial Services, Ministry of Finance. He has a PhD in Economics from IIT Bombay.



SHYAM SARAN

Shyam Saran is a former Foreign Secretary of India and has served as the Prime Minister's Special Envoy for Nuclear Affairs and Climate Change. After leaving government service in 2010, he headed the Research and Information System for Developing Countries, a prestigious think tank focusing on economic issues (2011-2017) and was Chairman of the National Security Advisory Board under the National Security Council (2013-2015). Shyam Saran is currently the President of the India International Centre and an Honorary Senior Fellow with the Centre for Policy Research. His book, *How India Sees the World* was published in September 2017. He has now published his second book, *How China Sees India and the World*.

On January 26, 2011, Shyam Saran was awarded the Padma Bhushan by the President of India for his contribution to Civil Service. The Padma Bhushan is the third-highest national award in the country. The Emperor of Japan decorated him with the Spring Order, Gold and Silver Star on July 30, 2019, for his services to promoting India-Japan relations.

AJAY SINGH

Ajay Singh is a member of the board of Mitsui OSK Lines (MOL) group. As Managing Executive Officer of the company, he is responsible for all the group's businesses in the Indian sub-continent and the Middle East. He also assists the group in its global energy transition and organisational transformation. Ajay Singh is based in Tokyo, where he has lived for close to 10 years.

Between 2014 and 2020, he was special advisor to the chairman of Japan Petroleum Exploration Co., an international energy company owned mainly by the Government of Japan. Earlier, he worked with Shell over a period of 20 years, based in India and then at Shell's global headquarters in London and The Hague. He was instrumental in creating and managing various oil and gas businesses around the world in partnership with host governments and other energy companies.

Ajay Singh is an alumnus of Harvard Business School, Manchester Business School and the Walchand College of Engineering.

ANOOP SINGH

Anoop Singh is Distinguished Fellow at NITI Aayog, Government of India. He is also Distinguished Fellow at the Centre for Social and Economic Progress (CSEP), New Delhi. He has recently been Member,15th Finance Commission of India, in the rank of Union Minister of State, a constitutional body that recommended tax sharing and grant transfers between the Union and the States for the period 2021-2026.

Before that he has been Adjunct Professor at Georgetown University; Managing Director and Head of Asia Pacific Global Regulatory and Strategy Policy, JP Morgan; and Member of the Working Party of the Robert Triffin International (RTI) on the reform of the international monetary system. At the International Monetary Fund, he was Director of the Asia and Pacific Department; Director of the Western Hemisphere Department; and Director of Special Operations.

He holds degrees from the universities of Bombay, Cambridge and the London School of Economics. His additional work experience includes being Special Advisor to the Governor of the Reserve Bank of India. His recent publications include *Asia and the Changing Global Economy* (2022).

AMARJEET SINHA

Amarjeet Sinha is currently posted as Member, Public Enterprises Selection Board (PESB). He was earlier posted as Advisor to the Prime Minister till July 31, 2021. An Indian Administrative Service (IAS) Officer of Bihar Cadre of the 1983 batch, he retired in December 2019 as Secretary, Department of Rural Development, Government of India. He has 40 years of experience in Government, largely in the rural and social sector. He has had the unique distinction of having played a major role in designing the Sarva Siksha Abhiyan (India's main programme for universal education); and the National Rural Health Mission, in bringing about governance reforms in programmes for rural areas covering livelihoods, employment, housing, social security, skills, urban development and road construction. He also coordinated successfully the work of Gram Swaraj Abhiyan in 2018 to reach seven pro-poor public welfare interventions (LPG, electricity, bank account, life and accident insurance, LED bulbs,

and immunisation) to 63,974 large villages with over 50% vulnerable social group population. He also leads the work on research in education for improving learning outcomes, pro bono, with the Centre for Social and Economic Progress (CSEP).

Sinha has published eight books on public policy and a large number of articles. He published *An India for Everyone – A Path to Inclusive Development*, a Harper Collins paperback, in 2013. The Hindi translation of the book, *Hum Sab ka Bharat*, is also available. His latest book, *The Last Mile – Turning Public Policy Upside Down*, was published by Routledge, UK and released on October 26, 2023. He has recently contributed to the Notion Press Book on fifteen *Change Makers, The Book of Aspiration*.

A student of St. Stephen's College, he topped the Delhi University and is a recipient of the National Talent Scholarship, the Rhodes Scholarship and the Oxford Cambridge Society of India Scholarship.

KRISHNA SRINIVASAN

Krishna Srinivasan is the Director of the Asia and Pacific Department (APD) at the International Monetary Fund (IMF). In this capacity, he oversees the institution's work on all countries in the Asia-Pacific region. He was previously a Deputy Director in the Western Hemisphere Department (WHD), where he oversaw the institution's work on several countries in the Americas, including Brazil, Canada, Mexico, Peru, Ecuador and the island economies of the Caribbean, the department's research activities, and its flagship product, Regional Economic Outlook (REO) for Latin America and the Caribbean. In this role, he co-edited two books: *Brazil—Boom, Bust and the Road to Recovery*; and *Unleashing Growth and Strengthening Resilience in the Caribbean*. Before joining WHD, Krishna was the IMF's mission chief for the United Kingdom and Israel, when he was a staff member of the European Department, and before that in the Research Department, where he led the IMF's work on the G-20 during the global financial crisis. In the context of this work, he co-edited an IMF book *Global Rebalancing: A Roadmap for Economic Recovery*. Krishna secured his PhD in International Finance from Indiana University, Bloomington, and a Master's from the Delhi School of Economics, India. He has published several papers, both at the IMF and in leading academic journals.

TETSUSHI SONOBE

Tetsushi Sonobe is the Dean and CEO of the Asian Development Bank Institute (ADBI), the Tokyo-based think tank of the Asian Development Bank that promotes the realisation of a prosperous, inclusive, resilient, and sustainable Asia and the Pacific through policy research and capacity building.

He obtained his PhD in Economics from Yale University and a BA in Economics from the University of Tokyo. His research interests are centered on the roles of economic agglomeration, human and social capital, management practices, and market competition in economic development, climate action, and global governance.

Before joining ADBI in April 2020, Tetsushi Sonobe served as Vice-President of the National Graduate Institute for Policy Studies (GRIPS), a public policy school in Tokyo, and taught economics for thirty years at Tokyo Metropolitan University and GRIPS. In 2023, he served as the Chair of Think7, the think tank engagement group of G7 Japan. He is a recipient of the Nikkei Book Publication Prize and the Masayoshi Ohira Memorial Prize, and is the Vice-President of the Japanese Association for Development Economics (JADE).

VENKATARAMANI SUMANTRAN

Venkataramani Sumantran is Chairman of InterGlobe Aviation Ltd. (IndiGo Airlines) and also serves as Board Director or Advisor for several organisations in autos, industrials, and technology in the USA, Europe and Asia. He is actively engaged across a spectrum of corporations, start-ups, academia and non-profits.

He has served on the Science Advisory Council of the Prime Minister of India and the Scientific Advisory Committee to the Cabinet of the Indian Government. He is the co-author of the book *Faster, Smarter, Greener: The Future of the Car and Urban Mobility,* published by the MIT Press. Previously, he was Executive Vice-Chairman of Hinduja Automotive, UK, as well as Vice-Chairman of Ashok Leyland Ltd. Prior to this, he was Board Director and Chief Executive Officer of TATA Motors' car business, where he led the concept development of the affordable car – the Tata Nano. He had a 16-year career with General Motors, USA starting at their R&D Center in Detroit and subsequently as a Director of Advanced Engineering at GM-Europe.

Venkataramani Sumantran has a PhD in Aerospace Engineering and a Master's degree in Management of Technology. He was awarded the Distinguished Alumnus Award by the Indian Institute of Technology, Madras. He is a Fellow of the Society of Automotive Engineers International (SAE) and a Fellow of the Indian National Academy of Engineers. He is also an Honorary Professor at IIT-Delhi.

JOMO KWAME SUNDARAM

Jomo Kwame Sundaram is Senior Adviser, Khazanah Research Institute. He is also Fellow, Academy of Science, Malaysia; Emeritus Professor, University of Malaya; and Visiting Fellow, Initiative for Policy Dialogue, Columbia University. He was on the Malaysian Economic Action Council (2019-20), and the Council of Eminent Persons (2018); UN Assistant Secretary-General for Economic Development (2005-12); Research Coordinator, G24 Intergovernmental Group on International Monetary Affairs and Development (2006-12); Assistant Director General, Food and Agriculture Organization (FAO) (2012-15); and third Tun Hussein Onn Chair in International Studies, Malaysia (2016-7). He received the 2007 Wassily Leontief Prize for Advancing the Frontiers of Economic Thought.

Jomo has authored and edited over a hundred books and translated 12 volumes besides many academic papers and media articles. He was Professor, University of Malaya until 2004; Founder Director (1978-2004) of the Institute of Social Analysis (INSAN); Founder Chair (2001-2004) of IDEAs, International Development Economics Associates; member of the National Economic Consultative Council (1989-91); President, Malaysian Social Science Association; and Founding Convenor, International Malaysian Studies Conference. He was on the Board of the UN Research Institute on Social Development, Geneva, and serves on the editorial boards of several learned journals.

NOBUO TANAKA

Nobuo Tanaka is Chairman of the steering committee of the Innovation for Cool Earth Forum (ICEF), which was established by former Japan Prime Minister Shinzo Abe in 2014. He was Chairman and President of the Sasakawa Peace Foundation from 2015-2020. As Executive Director of the International Energy Agency (IEA) from 2007-2011, he initiated a collective release of oil stocks in June 2011. He also played a crucial and personal role in the strengthening of ties with major non-member energy players, including China and India.

He began his career in 1973 in the Ministry of Economy, Trade and Industry (METI), and has served in a number of high-ranking positions, including Director-General of the Multilateral Trade System Department. He was deeply engaged in bilateral trade issues with the US as Minister for Industry, Trade and Energy at the Embassy of Japan, Washington DC. He has also served twice as Director for Science, Technology and Industry (DSTI) of the Paris-based international organisation, OECD. As CEO of Tanaka Global Inc, he advises several Japanese and international companies. He graduated from University of Tokyo and has an MBA from Case Western Reserve University. He is currently a Distinguished Fellow at the Center on Global Energy Policy, Columbia University and Institute of Energy Economics, Japan (IEEJ). He chairs the Study Group on Next Generation Nuclear Energy Utilization at Canon Institute of Global Studies (CIGS).

HEIWAI TANG

Heiwai Tang is Victor and William Fung Professor in Economics, Director of the Asia Global Institute and Associate Dean (External Relations) of the Business School at the University of Hong Kong (HKU). Prior to joining HKU, he was tenured Associate Professor of International Economics at the School of Advanced International Studies of Johns Hopkins University. He is also affiliated with the Center of Economic Studies and Ifo Institute, the Kiel Institute for the World Economy and the Globalization and Economic Policy Center as a Research Fellow.

He has been a consultant to the World Bank, the International Finance Corporation, the United Nations, and the Asian Development Bank; and held visiting positions at the IMF, Stanford, MIT, and Harvard. He is currently Managing Editor of *Pacific Economic Review,* and previously served as Associate Editor of the *Journal of International Economics,* the *Journal of Comparative Economics* and the *China Economic Review.* Since 2021, he has served on a number of public and regulatory bodies in Hong Kong SAR, including as a member of the Currency Board Sub-Committee of the Hong Kong Monetary Authority's Exchange Fund Advisory Committee; Industry Advisory Committee of the Insurance Authority; Securities and Futures Appeals Tribunal; and the Minimum Wage Commission, among others.

RAHUL TONGIA

Rahul Tongia is a Senior Fellow with CSEP in New Delhi, where his work focuses on technology and policy, especially for sustainable development. He co-leads the Energy, Natural Resources, and Sustainability group at CSEP, and is also active in broader issues of technology. Tongia's work spans the entire gamut of energy and electricity, with focuses on supply options including renewable energy (covering finance, grid integration, etc.); smart grids, which use innovative information and communications technology to improve management of the electric utility grid; issues of access and quality; and broader issues of reforms and regulations, including electricity and energy pricing. Another thread of his work focuses on climate equity and the energy transition. His book *Future of Coal in India: Smooth Transition or Bumpy Road Ahead* (2020) was awarded a Top Energy Policy Book to read in 2021 by BookAuthority.

He was a pioneer for establishing the Smart Grid space in India and was Technical Advisor of the Government of India's Smart Grid Task Force, and he remains Founding Advisor of the India Smart Grid Forum (ISGF). He was also on the Technology Advisory Board 2005-2008 for Southern California Edison's award-winning smart grid rollout. He is also a Fellow of the Indian National Academy of Engineering.

Rahul Tongia is a non-resident Senior Fellow at the Brookings Institution and also Adjunct Professor at Carnegie Mellon University, having originally joined the faculty at CMU in 1998. Previous roles include Vice-Chair of the UN ICT Task Force Working Group on low-cost connectivity-access/enabling environment and Member of the World Economic Forum's Global Futures Council on Advanced Energy Technology.

SHUJIRO URATA

Shujiro Urata is Chairman of the Research Institute of Economy, Trade and Industry (RIETI). He is also Professor Emeritus, Waseda University; Senior Research Advisor, Economic Research Institute for ASEAN and East Asia (ERIA); Specially Appointed Fellow at the Japanese Centre for Economic Research (JCER); and Distinguished Senior Fellow at the Institute of Developing Economies (IDE-JETRO). He received his BA in Economics from Keio University, and MA and PhD in Economics from Stanford University. He is a former Research Associate at the Brookings Institution and an Economist at the World Bank.

He specialises in international economics and has published a number of books and articles on international economic issues. His recent books include *Achieving Inclusive Growth in the Asia Pacific*, co-editor, Australian National University Press, 2020; *Enhancing SME Participation in Global Value Chains*, editor, Asian Development Bank Institute, 2021; *The Effect of Globalisation on Firm and Labour Performance*, co-editor, Routledge, 2021; *Globalization and Its Economic Consequences: Looking at APEC Economies*, co-editor, Routledge, 2021; *Sustainable Development Disciplines for Humanity*, co-editor, Springer, Singapore, 2022; and *Sustainable Development Disciplines for Society*, co-editor, Springer, Singapore, 2022.

SANDHYA VENKATESWARAN

Sandhya Venkateswaran is a Senior Fellow at CSEP and leads the Human Development work at CSEP, with a specific focus on Health Policy. Spanning a career over three decades, she has worked on a wide range of issues in the social sector spanning health, nutrition, gender, natural resources, urban development and others and has authored books, multiple articles and other publications on varied social sector issues. Over the last 15 years, her focus has been on policy issues, developing and leading the policy and advocacy portfolio in organisations such as the Bill and Melinda Gates Foundation, Global Alliance for Improved Nutrition and CARE. She has worked with grassroots campaigns and civil society organisations, as well as with government and international organisations. She is currently a member of the Lancet Citizens Commission on Reimagining India's Health System.

TETSUYA WATANABE

Tetsuya Watanabe is the President of ERIA (Economic Research Institute for ASEAN and East Asia), an international organisation that provides research and policy recommendations to ASEAN and East Asian countries. Prior to joining ERIA, he was the Special Advisor to the Japanese Minister of Economy, Trade, and Industry (METI). In his government career of over 30 years, he has held various key positions such as the Director General for the Trade Policy at METI and Chief Counsellor of the TPP Headquarters at the Cabinet Secretariat, where he led Japan's major trade policy initiatives and negotiations in

the CPTPP, RCEP, and the WTO reforms. He was also the Vice-President of RIETI, one of Japan's most prominent policy think tanks. His expertise covers economic security, digital transformation, climate change, energy security, and regional economic integration. He graduated from the University of Tokyo and Columbia University.

DUSHNI WEERAKOON

Dushni Weerakoon is the Executive Director of the Institute of Policy Studies of Sri Lanka (IPS) with research and publications covering areas related to macroeconomic policy, regional trade integration, and international economics. She has extensive experience working in public policy engagement with the Government of Sri Lanka (GOSL), as a consultant to international organisations and as a director on the boards of corporate and academic entities. She serves at present as an Appointed Member to the Monetary Policy Board of the Central Bank of Sri Lanka; as a Director on the Board of Investment of Sri Lanka; and as an Independent Non-Executive Director at Cargills (Ceylon) PLC. Dushni Weerakoon holds a BSc in Economics with First Class Honors from the Queen's University of Belfast, UK, and an MA and PhD in Economics from the University of Manchester, UK.

YANG YAO

Yang Yao is a Liberal Arts Chair Professor at the China Center for Economic Research (CCER) and the National School of Development (NSD), Peking University. He currently serves as the Director of CCER; the Executive Dean of the ISSCAD; and the Editor of CCER's house journal *China Economic Quarterly.* He was the Dean of the NSD from November 2012 to January 2024. He serves as the Chairman of China Economic Annual Meetings and Chairman of the Foundation of Modern Economics. He is a member of China Economist 50 Forum. His research interests include economic transition and development in China. He has published more than a hundred research papers in international and domestic journals including *China Social Sciences, American Economic Review* and *American Political Science Review.* He has published or edited more than a dozen books on institutional economics, political economy and economic development in China. He is also a prolific writer for magazines and newspapers, including the Financial Times and the Project Syndicate.

Yang Yao was awarded the 2008 and 2014 Sun Yefang Award in Economic Science, the 2008 and 2010 Pu Shan Award in International Economics and the 2008 Zhang Peigang Award in Development Economics and was named the Best Teacher by the PKU Student Union in 2006 and the Best Advisor by the PKU Graduate Students Union in 2017. He obtained a BS in Geography in 1986 and an MS in Economics in 1989, both from Peking University, and his PhD in Development Economics from the Department of Agricultural and Applied Economics at the University of Wisconsin–Madison in 1996.

BERNARD YIN YEUNG

Bernard Yeung is Emeritus and Founding President of the Asian Bureau of Finance and Economics Research and Professor Emeritus at the National University of Singapore Business School. He is also a Yangtze River Scholar in China.

From 2008 to 2023, he was the Stephen Riady Distinguished Finance and Strategic Management Professor at the NUS Business School and served as the Dean from 2008 to 2019. He was also the President of the Asian Bureau of Finance and Economic Research from 2003 to 2023. Before joining NUS, he was the Abraham Krasnoff Professor at New York University (NYU) Stern School of Business and the Director of the NYU China House. Before then, he taught at the University of Michigan (1988-1999) and the University of Alberta (1983-1988).

He has published widely cited work in top-tier academic journals covering Finance, Economics, Strategy, and International Business topics. He was awarded the Public Administration Silver Medal (2018) in Singapore, the Irwin Outstanding Educator Award (2013) from the Academy of Management and is an elected Fellow of the Academy of International Business.

He was a member of the Economic Strategies Committee in Singapore (2009); a member of the Social Science Research Council (SSRC) (2016-2018); and a member of the Financial Research Council of the Monetary Authority of Singapore (2010-2013). He received his BA from the University of Western Ontario and his MBA and PhD from the University of Chicago Booth School of Business.

TAO ZHANG

Tao Zhang has been Chief Representative of the BIS Office of Asia and the Pacific since September 2022. As a member of the BIS senior management, he takes the lead in its activities in Asia and the Pacific.

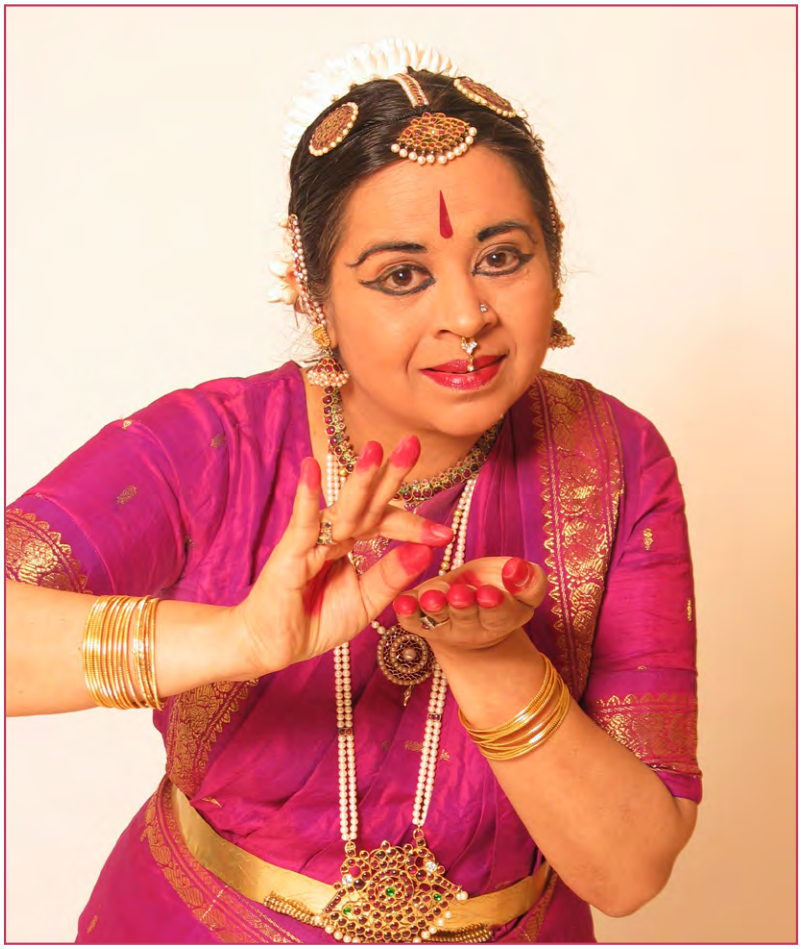
He has extensive experiences both in the international arena and at the national level in China. He served as Deputy Managing Director of the International Monetary Fund (IMF) in Washington, DC during 2016-2021. He also held senior positions in China, including Deputy Governor of the People's Bank of China, and Chairman of the Supervisory Board at the People's Insurance Company (Group) of China Limited. Earlier in his career, he had worked as an economist at the World Bank and the Asian Development Bank.

He has a PhD in International Economics from the University of California, Santa Cruz, USA and a Bachelor's degree from Tsinghua University, China.

The Deities of Dance

A Bharatanatyam presentation by

Rasika Khanna



Venue: Badroon Mahal, Neemrana Fort-Palace

Date: Saturday, March 2, 2024 • Time: 7.00 pm

Born in Mumbai, Rasika Khanna is the daughter of Renu and Krishen Khanna, the artist. She was fortunate to be initiated into Bharatanatyam by the legendary Balasaraswathi as a child in Chennai. Her love for Bharatanatyam as a solo art form was later nurtured by her subsequent gurus, Smt. Lalitha Shastri, Shri Adayar Lakshman, Guru Nana Kasar and Smt. Kalanidhi Narayanan, each of whom gave her a different insight into the art form.

Rasika has performed professionally on many prestigious platforms both in India and abroad. In Asia she has performed in Jakarta and Bali in Indonesia, Singapore, Sri Lanka and Pakistan. She has taken her art further to the US, Europe, Canada, Chile, Colombia, Brazil, Tanzania, South Africa and Russia in Moscow and the Hermitage in St. Petersburg.

ACKNOWLEDGMENTS

Following the successful inaugural edition of the India in Asia: Deeper Engagement conference in 2023, I am thrilled to see that the second conference not only built on that success but also elevated the discourse and engagement. This would not have been possible without the dedication of the CSEP staff, who managed every aspect of the event. From coordinating logistics and liaising with delegates from across India and the globe, to preparing conference materials, and overseeing the audio-visual setup, they handled it seamlessly—and always with a smile.

I would also like to extend our heartfelt appreciation to the management and staff of Neemrana Palace Hotel. It is amazing how they take care of us but remain invisible. And that's the biggest quality of high-level management: everything works, and you don't see them.

Nandini Agnihotri, *Former Research Analyst*

Manmeet Ahuja, *Director - Admin, Recruitment & Events*

Amshika Amar, *Associate Fellow*

Priyam Awasthi, *Research Analyst*

Kausheya Basu, *Executive Associate*

Aruna Bose, *Associate Director - Communications*

Jayanth Bothra, *IT Support*

Ajay Gupta, *Senior Executive Assistant*

Shishir Gupta, *Senior Fellow*

Ashley Jose, *Former Research Analyst*

Anahad Kaur, *Research Analyst*

Gurmeet Kaur, *Manager - Events*

Rishabh Kumar, *Office Attendant*

Purvaja Modak, *Former Associate Fellow*

Yasser Naqvi, *Associate Director - Development*

Prerna Prabhakar, *Associate Fellow*

Aprajita Prasad, *Development Associate*

Pooja Ramamurthi, *Associate Fellow*

Mukesh Rawat, *Senior Designer*

Anindita Sinh, *Research Analyst*

Riya Sinha, *Associate Fellow*

Veda Vaidyanathan, *Associate Fellow*

Rajat Verma, *Associate Fellow*

Preeti Vij, *Manager - Admin & HR*

Trishna Wahengbam, *Senior Communications Officer*

Four S Communication, *Audio-Video Vendor*

Rakesh Mohan
President Emeritus & Distinguished Fellow

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