Flagship Seminar

Economic Growth in Middle-Income Countries

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Know more details: https://csep.org/uZM7KSB

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Rakesh Mohan: … who was also with him and is a lead economist in Indermit Gill's office and he has done… I will do the bios in a second. But meanwhile let me first welcome our very distinguished discussants, Mr. Nitin Desai, a former undersecretary general of the United Nations. And Mr. Bibek Debroy who is the chairman of the economic advisory council to the Prime minister. As you can imagine, this is a great privilege for CSEP to host this webinar. We hoped that this would be in person. But as always for the last three years almost covid intervened and we are on Zoom. Nonetheless, I think, that we are going to have a very, very interesting session which is going to last till six o'clock because we wanted to have enough time for discussion. So, the talk is focused on middle-income countries and economic growth. And it will discuss the difficulties that middle-income countries encounter in terms of continuing high growth paths that they may have had in some previous years or decades. Now, as it happens, middle-income countries constitute almost 75% of the world's population. There are actually over a hundred countries today that are classified as middle-income countries by the World Bank. They constitute about 40% of global economic activity. And almost half of the world's extremely poor people and sixty per cent of carbon dioxide emissions. So, talking about middle-income countries is talking about three-quarters of the world's population. Now a concept that as I understand Indermit himself had perhaps coined, invented or found, was the existence of the 'middle-income trap', where people have been staying for, I think more than 15 years that whereas many countries can get to the middle-income level, but they are not then able to adapt further to grow continuing further. There is only a very small proportion of countries that have escaped that middle-income trap. So, the current ongoing world development report 2024 is focused on middle-income countries and their growth. So, this is very timely in terms of discussions and I hope that some of the ideas that come through from our distinguished discussants as well as perhaps from the comments later will find their way into the world development report I hope you would mention that CSEP is responsible for all these great additions to the report. So let me now just first introduce the key speaker. Indermit Gill. As I said he is the chief economist, at the World Bank and senior vice president of development economics. He has been working on development issues right from his PhD graduation from the University of Chicago if I remember correctly. I was first introduced to him by Professor Dharma Kumar from the Delhi School of Economics when he went as a young student to Chicago. He asked me to take good care of him, which I did. No wonder that he is now senior vice president of the World Bank. He, of course, had a great deal of experience in the World Bank as you do, if you work as long as he did in the World Bank. He has worked on sovereign debt vulnerability in recent years, green growth, natural resource wealth, labour markets, poverty, inequality and what have you. After having spent a great long amount of time in the World Bank he then went on as a professor of public policy at Duke University and also a nonresident senior fellow at the Brookings Institution, global economy and Development program. Indermit, I guess you would know CSEP was initially Brookings India Center. So, there is a connection between where you were and where you are today. He did spearhead 14 years ago I guess in 2009 the world development report on economic geography and he, as I said, was also among the people or perhaps the main person who introduced the concept of the middle-income trap. Let me now introduce his co-speaker. He is the said lead economist in his office. But he is now directing the team for the world development report 2024 which is indeed focused on the middle-income economy's growth. He was the bank's global lead for territorial and spatial development and the lead urban economist in the global practice for urban disaster risk, resilience and land. Somik joined the World Bank in 1999 as an economist and development economics vice president. He has worked in more than 25 countries including big ones like Brazil, China, India, Saudi Arabia and South Africa. He is widely published in academic and policy journals. His 2017 book, Africa's cities opening doors to the World has been downloaded over 100,000 times and he has 3 million social media views for his book. He has also developed a novel data-driven approach to help city mayors rapidly respond to protect the citizens from the ravages of covid 19. His recent work is focused on examining the drivers of carbon emissions across low and middle-income economies. And also identifying the contribution of rising productivity and incomes in helping communities protect themselves from the risk of natural hazards and examining the political economy of climate action. He is very much at the forefront of current global development and economic issues. What I haven't mentioned is one of the most important jobs he held was as an economist in the national transport development policy committee in India in 2011-12 if I remember correctly which was formed by prime minister Man Mohan Singh and the planning commission of that time and we had the pleasure of working together then. So, his advancement is almost all related to all the work that he did with me 12 years ago. Our distinguished panellist first, Dr Bibek Debroy. He was educated at the Delhi School of Economics and trinity college Cambridge. As I said he is currently the chairman of the economic advisory council to the prime minister and he is also chancellor, of Deccan College, a postgraduate and research institute in Pune. He has worked in a number of places. Just like me, he can't hold a job for very long. So, except the current one which he has held for a length of time. He has worked at the Gokhale Institute, the Indian Institute of foreign trade, the Ministry of Finance, the national council of applied economic research, the Rajiv Gandhi Institute of contemporary studies, the PC Chamber of Commerce and Industry, the Centre for Policy Research and before the current position member of Niti Aayog. And he was also president of the Indian statistical institute from 2018 to 12. He has received many honours including a number of honorary doctorates. I won't go through all of them. And of course, among his other activities has been his translation of the Mahabharata and other ancient tracks which only he could have done into English. Nitin, in his case I can't claim any credit for whatever he has done. Nitin Desai an old friend, we first met in December 1980 when I came to the planning commission after a very long time abroad. I have to say that if it wasn't for his presence at the planning commission, I probably wouldn't have lasted there for more than 6 months. However, his influence made me stay and of course, I have been here ever since except for absences in the last 10 years. He was in the planning commission in 1973, he was long time advisor for the project appraisal division, which is a level of additional secretary, he served as secretary of the economic advisory council of the prime minister and then went on to become the secretary and chief economic advisor in the ministry of finance in 1988.

At the international level, he was a senior advisor to the Brundtland Commission and joined the United Nations in 1990 as deputy secretary general for the 1992 Rio health summit. And the was then appointed under-secretary-general of the UN in New York in 1993 where he stayed for 10 years. His activities are far too many to list. Perhaps you could just google him. Currently, he is the chairman of the governing council of the energy and resources institute that is TERI. Let me once again welcome all of you. I am very grateful to each of you to have given us the time to do this. And we are looking forward to a very exciting webinar. Indermit, all yours.

Indermit Gill:

Thank you, so much Rakesh. Thank you very, very much for hosting this and thank you, for your help all through the years you are right, you have indeed helped me a lot through the years. I think I remember meeting you for the first time in 1983. So, it dates both of us quite a lot. But I know that since then you have helped me a lot including allowing me to stay rent-free in your house for months. Essentially a huge thanks for this. I thought that what I will do today is quickly introduce the work that we are doing on the world development report for next year. By next year I mean that we should have the main results of it by the end of this calendar year but we will launch it probably early next year. That report is on economic growth in middle-income countries. Slide Somik. Pl go to the next slide. So, exactly what do we mean by middle-income countries? We use the World Bank's definition of this. It is a fairly sort of mechanical definition and the definition is that a low-income country is roughly a country that has a per capita income that is less than 1200 dollars per capita. And you have middle-income which goes from 1200 to about 12000 dollars per capita. Then you have a high income after that. If you look at this chart, it tells you which are the low-income countries, those are the ones in dark yellow. The ones that are lower middle-income countries which are essentially countries between 1200 dollars per capita to around 4800 or so. And those are light yellow. And then you have the light green countries which are the upper middle-income countries and then you have the darker green which are the high-income countries. The main thing that has changed by the way here, there have been a few updates since we made this chart. The first one, of course, is that Russia is not a high-income economy by the World Bank's definition. It is now actually an upper-middle-income economy. The other one, Kenya is now a lower middle-income country and so on. Those are the main differences. But if you sort of look at countries, the thing that we are sort of trying to focus on are countries that have gone from lower middle to upper middle. Then mainly to the next transition which is from upper middle-income to high income economies. If you go down the slides, Somik, show the one that shows the trap. If you look at the left panel over here you see the countries that are in blue dots, those are the countries that in 1960 would have been considered middle-income. By 2008 they had moved on to become a high-income economy. So, if you exclude Japan, all the other countries there and Spain to some extent I guess, all the other countries there have tended to be very small economies. So, we don't have a chart over here. But if you look at the countries that have become high-income recently at least, those countries have… that is the chart on the right. There you see sort of the countries there are Korea, Taiwan, and Saudi Arabia. Those are the big economies there. All the others are very, very small economies, right? So, the thing that strikes you first is, of course, how few countries have high-income economies and the second one is even the countries that have become high-income economies had to be pretty small economies. So, if you go back to the other chart, Somik, the one that we show the long-term trends in per capita GDP shares. So, if you look at this chart actually and if you look at the scale, you have to read the scale carefully because it goes from one to one thousand. It starts in 1AD and goes through to about 2005 AD. And what you sort of see here is that countries like India and China were having the highest share of world GDP for almost three-quarters of this time. More than three-quarters of this time. About 1700 years out of 2000 years, China and India had the highest share of world GDP. So, in some sense, these countries were used to being fairly important players in the world. If you then look at the next 300 years from 1700 to around 2000, you actually see a decline in the shares of both of these countries till about the early 1980s and then you see an increase in the share of China and now you start to see an increase in the share of India as well. The reason why I am showing you this chart is because, if China and India were to become high-income economies you would then actually see this transition to high income of two very large economies. And the world is not used to those kinds of transitions. So, in a sense, both the middle-income trap as well as the next world development report is essentially about the power of the incumbents. So, essentially now you have the US, you have Western Europe and so on and they have got used to a certain stage of development. They have also gotten used to a certain share of the world economy. So, India and China to the extent they do become high-income countries it is going to end up being a huge disruption. But also, it would mean these countries will actually… their rise will be resisted in some sense. So that is what the middle-income trap essentially is about. It is about the fact that it becomes very hard for countries to transit on to developed economy status even if they get to middle-income with a fair amount of frequency. So, if you go on to the next slide, here is what we are going to do. I will just show you a few more slides on the middle-income trap and because I am not feeling well, I am not going to talk very much and then I am going to turn it over to Somik who will tell you about the theory of creative destruction and how we are trying to implement that in the next world development report to identify the problems that are being faced by the middle-income countries today. Keep going Somik. Just to give you a little bit of history about how Homi Kharas and I came up with this term. So, both Homi who is now at the Brookings Institution by the way and who used to be my boss at the time, we came up with this term. We had both moved from Latin America and we had moved to our East Asia office. We would get a lot of questions from our East Asian clients about Latin American countries. The Latin American countries they were very interested in were of course Brazil, Argentina, Mexico, Colombia, Chile and others. We call them the Latin American eight. The reason why they kept asking us the question was that it turns out that the countries that we call the East Asia five, these were China, Philippines, Thailand, Indonesia and Malaysia, these countries had come to the same per capita income range as Latin American eight in around 2000. So, if you look at the chart you see that what had happened was that the Latin American eight countries had come to per capita income levels that would be classified as middle-income in the 70s and 60s. and then essentially, they had stayed there. They stayed there for the next 30 years. The East Asian five developing countries you see essentially had a much more rapid rise. They went from low income in the 50s, 60s and so on. They had very rapidly increased to lower and upper middle-income status and they had reached that same status as the Latin America eight. So, we would ask them why don't compare themselves to East Asia's five high-income countries. So, these were countries like Singapore, Korea, Taiwan and so on, that had gone on and become high-income economies. They had moved beyond that middle-income level, right? It turns out that these countries, I am talking about the East Asia five countries now, were concerned that their economies were starting to look much more like the Latin America eight countries rather than the East Asian five economies. They were concerned that they were headed also for the same kind of trap. And we just casually mentioned avoiding the middle-income trap in the book, but we really didn't get into much detail about exactly what this trap entailed and so on. It turned out that we had a lot of other nice things in this book, but the only thing that the book got remembered for Rakesh was the middle-income trap. But over time there have been lots of attempts to define this term. The first kind of definition is institutional that is these countries have per capita income levels that are going up, but they don't have institutions to match in the sense that they have started to run out of surplus labour and things like that they had an advantage that they had lots of labour and cheap labour and somewhat skilled labour and so on, but wages were going up. And they had lost that advantage of cheap labour. On the other end they didn't have yet the advantage of rich economies, the countries that were far more innovative, that had high productivity and so on. As a result of it, they were stuck in this middle. So that was the first definition an institutional definition. The other two definitions tended to be sort of much more empirical. So, one of those was that is a country sort of stayed in this narrow band that we call middle-income for a certain amount of period, I guess it could be about a quarter century and so on, some people started to say well this country appeared to be trapped. The second definition that was also empirical was that this country stopped converging to a benchmark advanced economy. And in this case, typically we use the United States. So, the idea was that if a country stopped converging for a certain number of years, we would say that it was trapped. Somik, continue. I showed you this thing, here if you sort of look at this, I think that the right chart looks at GDP per capita in 1950, way back then. And it is sort of uses that as the benchmark is the US and you sort of see over here that you have quite a few countries that started as middle-income in 1950 and came down. So, this is the group that, I don't know if you can point to it Somik, the group that lost incomes. Down below. So, you had quite a few countries that went from middle-income in 1950 and their incomes slipped compared to the United States and the other group which is roughly as numerous as this one, are the countries that have some labels over there, Korea, Taiwan, Saudi Arabia and others, these are the countries that have gone up. As I said to you, these countries were marked by two or three features. The first one, of course, you had countries like Saudi Arabia and you had Equatorial Guinea and others that just found a lot of oil and that helped. As a result of it, their incomes reached high income even though the institutions weren't often particularly those of advanced economies. Then you had another group of countries that were essentially the middle-income formerly communist economies that had become integrated into the European Union either by becoming members or starting accession talks with them and those were Poland and the Czech Republics and so on. Then there was a third group of countries and these are the countries that are most famous for being called the East Asian tigers. But they were called the East Asian tigers for a very good reason. They were called this because they were very fierce in the sense that they tried rard, they had very high savings rates, and they had made huge investments in education and health and things like that. They often postponed civil liberties and things like that. So, they had to try very hard to get there. And in some sense countries like India and China fit that stereotype more in the sense that for them to get to high income perhaps you would have to make a lot of sacrifices and so on. But the thing that we still lacked was any kind of a theory of why is it that you had a whole bunch of these countries, and why they stopped converging to the United States. Why did they sort of get stuck in this midrange and so on? There were lots of all these hypotheses about the fact that as wages rose, they lose labour-intensive sectors, but they don't get… they have trouble getting into more capital-intensive or more innovative sectors and so on. The other thing, of course, is that they got to middle-income just by accumulating a lot of things like sort of higher labour force participation rates or higher capital and so on. But then beyond this, that growth model doesn't work and they don't have another one that allows them to sort of switch to productivity-enhancing growth, innovation and things like that. Meanwhile, you have two other things that happen to these countries. The first one, of course, is that their population start to age and as a result of it they start to sort of slow down because of that. And then now these countries also have a whole lot of pressures to move to cleaner, more expensive sources of energy and that might slow them down too, right? But the thing that we lacked was a good theory of trying to sort of understand what is special about these countries and so on. So, one of the things that we are trying to do with the world development report is to sort of see whether or not the theory of creative destruction that was pioneered by Schumpeter and then developed by people like Philippe Aghion and Peter Howard and their colleagues. Why is it that that theory actually might hold some promise in terms of understanding how best to do this? Over to you Somik. I stop here.

Somik Lall:

Thank you Indermit. Friends what you heard from Indermit until now was that in the traditional or the current debate on the middle-income trap, there has been a focus on levels of income. But in the report on world development report 2024 what we are trying to do is to reframe the debate about middle-income traps from being one about levels of income to stages of development. And I would like to kind of start from a point Indermit made., as countries start getting richer or accumulating more capital, the harsh reality of diminishing returns set in. So, if you were to take the median middle-income economy and that could be around 30% or 25% of the US. If it was just capital that mattered and capital accumulation that mattered, that economy would have income per capita closer to about 75% of the US. So, the magic here is much more to do with productivity and that is kind of what we will discuss in the WDR on middle-income development. So, in front of you is a chart that on the Y axis has accumulation and the X axis has relative productivity and its proximity to the frontier. The frontier here is taken to be the US. So, how does a country grow? A country grows in stages where it can have technologies that are either not new to the country or not new to the world. A lot of focus in the economy would be on capital deepening and making much more use of resources. Most of us growing up in India you know the word Jugaad, when India in the 1980s was capital scarce, a lot of pictures like this in front of you where we made good use of scarce capital, try to do innovation which weren't really innovations. They were just tinkering around at the margin to make do, often these processes were legal and sometimes illegal but it was just the kind of the Indian style of doing things. But then, as countries grow from this deepening stage towards much more about diffusion which is about taking ideas that are new to the country but not new to the world and dissipating them through the domestic economy. Then the economy goes on a new path. Think about the story of Samsung. Samsung in Korea started as a noodle-making company and was doing basic stuff. But as Korea started growing Samsung started licensing technologies from Sanyo in Japan. It reverse-engineered things but when it did that it needed more specialized capital. It needed more human capital and then as the stages got more refined Samsung started getting technologies from NEC, from Sony making its brands that many of us consume. So, the idea of diffusion is very different from the one of deepening. It is not this incremental process, many things need to change, the sort of skills needed, and the sort of managerial capabilities needed, change. And then finally when countries move from there, from diffusion to doing things that are new to the country and new to the world, we are in this realm of discovery. Here in this realm of discovery, you see in this picture in front of you, this is a R&D lab in Monterey Mexico. The idea here is these are really risky ventures. And the models and systems that brought you to diffusion are not necessarily those that will take you to discovery. What this means is a complete rethink of policies as countries go from one stage to another. As we are deepening, I think the only thing that mattered was to get more relative capital. Get in the capital, build more roads, build more schools, things are good. But as you go into diffusion scale economy starts mattering. We need larger firms, we need larger cities, we need larger markets. Countries need openness to ideas in investments. Lower barriers to entry and exit. But we also need specialized skills. We need engineers and bankers. But then, as we go from diffusion which depends on scale economies to discovery which requires risk and nimbleness a different side of things matters. The risk increases, and capital markets including venture capital matters. We move from a model of large firms to one where we have start-up-driven growth in many countries. We think about global competition, antitrust regulations, and killer acquisitions. So, the development model is in fact not incremental but they are step changes. So, what we are doing in this report is trying to understand what is it that is slowing down these transitions from deepening to diffusion to discovery. We are using this creative destruction lens which requires a framework that considers the relationship between incumbents and entrants, a point Indermit made earlier. And this creative destruction lens based on advances in modern Schumpeterian growth theory I think allows policymakers to bring microeconomic insights from industrial organizations to real macroeconomic problems. And for the past 30 years, this has been examined as a macroeconomic problem. And the value of the creative destruction framework is that now we can start thinking about heterogeneity among agents. We can have different types of firms such as small firms, large firms, and new and old firms. We can have different types of workers. Unskilled and skilled, rural and urban. And in fact, from what we have seen in the work we are doing you can apply this framework to different energy sources. Both clean and carbon-intensive, reliable, and risky. But very important here is that this is one strand of economic analysis that recognizes the importance of both creation that is start-ups, investment, and new skill innovation, it recognizes the value of destruction. Some things have to go. Skills often get obsolete, energy assets often get stranded in the process of structural change. And it recognizes institutional inertia because of how it provides insights into the forces of preservation, maybe it is societal arrangements, and it's __ in public policy. So, what I will do in the next ten or twelve minutes is give you a few examples. But first, let me tell you three charts or three pictures that give you the essence of what we are doing in this report. First think about in your mental model these new entrants, new firms, new workers, and new energy sources who really have the new ideas to push out the technology frontier. So, these are the creators of the economy. Now we have incumbents, they can be state-owned enterprises, they can be energy companies, and they can be elites in society. In a symbiotic model, they are working together with entrants to push out this knowledge frontier taking the economy through diffusion into discovery. But there could be another version of this, which is a predatory model where the incumbents are actively working against the newcomers to kind of block out new ideas. So, this sort of stress, this kind of challenge between entrants and incumbents is the essence of the work we are doing in the WDR on economic growth. So, I will give you five specific examples to tell you how this works in practice. The first is about the relationship between growth and firm dynamics. One of the things that we see is that for an economy to be firing, it needs both large firms and small firms. Since the large firms in the models that you see in the framework provide scale and scale economies are important. But small firms bring about change. Let me show you an example for India and Italy to show you how this works in practice. This is a chart many of you studying economics would have seen. It is a chart by Hsieh and Klenow, looking at average employment in firms in the US, Mexico and India over the life cycle and these are charts about firm dynamics. In the US firms start small, but by the time they are about 30 years old, they have employment sizes and value-added sizes 16 times what they started. In Mexico, the number is close to twice as large as it started. India is a little worse. We do, our average firm size is about one and a half times from birth. So, that tells you this process of creation and its growth is being stymied. But this average picture by Hsieh and Klenow is a bit suspect. Because as you start looking into the details of the Indian industry you see a lot of variants. And in fact, you have many large firms… many firms which start large, but the medium firms probably start small. But what we do find and this is research by our colleagues and others that the average life cycle of the Indian firm is flat but some Indian firms at the top of the distribution are growing fast. So, after 35 years, they are about 7 or 8 times what the firms as it started off to be. Now to be efficient they would probably have to be several folds larger. But we do have some creation taking place and growth taking place in the Indian economy. But what is striking is an exit. In the US economy, the dashed line shows that US firms that don't do well, that don't grow in size exit the market and the share of small firms dramatically decreases with age. In India, they terminally stay on. So, it is often we think about entry and growth, but a hidden problem one may want to think about is why we have so many tiny producers in the market for a long, long time and whether is that slowing down the process of creative destruction. But what we do also see in India is efficiency improvements. Allocative efficiency happened between 2004 and 2016. The light lines out here are showing actual TFP growth that is total factor productivity. And the dark line is potential. So, what the dark line shows are what would have happened to Indian firms and the Indian economy if nothing is being allocated efficiently. But what Indian improvements do is that in response to efficiency improvements, Indian firms start innovating. And this is a positive sign for the Indian economy. But what we also see is during episodes of economic growth that were rapid firms in China and Chile benefitted from far higher improvements in allocative efficiency that is policies that reduce misallocation. Now in an unhealthy economy on the other hand the relationship between incumbents and newcomers is pretty toxic. An example here is Italy. The data here you see in front of you is the market leader in the economy, the dark lines in red, the dark bubbles, are the market leaders in terms of patents per worker. The golden bubbles are politicians per worker. So, as these market leaders get important in Italy, rather than being innovators at the top what they end up doing is colluding with politicians to block new entry. So, this is kind of the whole idea, the model, think about what I told you, the incumbents working very closely to block new entrants from coming in. The second part of this creative destruction argument is the link between growth and industrial organization. An important insight of this theory is that competition and innovation are complements. They are not substitutes. Take an example from Chile where the antitrust authority started enforcing collusion enforcements, abuse of dominant position and at that time all the firms were faced with intense competitive pressure. But what the research shows, the firms that were in the top percentiles of total factor productivity increased their productivity more than other firms in the same market. So, what we are seeing is that competition is pressuring the leaders to innovate. Because they innovate, they reduce managerial slack, they use resources more efficiently. But the lagging firms who can't escape the competition lose market share, and they decline in sales and productivity. And they may end up leaving the market. So, this is the process of creative destruction and play. I am going to skip over the institutions part because we can discuss Korea's role in the question and answers. But I will tell you two more stories. One is about technology. And right now, what we are seeing is that the energy transition is a major opportunity to diffuse innovation. But in most cases, it is being held back by these incumbents. Think about these technologies. So, what our team has done is look at all kinds of patents registered in the US patent office. And not surprisingly climate patents outstrip all other patents right now. And the rate of growth of climate patents is among the top five globally and this is compared to AI, cloud computing, smart devices, online streaming and such. And what we also see here is that clean energy financing is now over a trillion dollars. And between 2009 and 2019 the levelized cost of green energy such as solar, has dropped from one of the highest to one of the lowest. So, you would be thinking it is a no-brainer that we should think about an energy transition from brown to green. But what we see is that the playing field is not level. In Mexico for example, fossil fuel R&D far outstrips any research and development for renewables. In India, the data show that in fact between fiscal years 20 and 21 subsidies for fossil fuels far dominate any kinds of subsidies for renewables coming in. Then there are broader issues about global investments in energy by state-owned enterprises and as you see they are far more in fossil fuels than in any others. Then we see electricity generation market shares by state-owned enterprises, a country like South Africa has about 90% of it by the state-owned enterprise incumbent in a place where much of the renewable energy is done by the private sector. Now for the spirit of the time, I am going to end with my last example on growth and social mobility. And this is an important part of the report because, in most studies of economic growth, we think about enterprises. And then sometimes we talk about innovation. But an important part of this debate is to ask the question, what if more people could produce more ideas? And how many Einstein and Curies and Ramanujan have missed out because they lacked education and opportunity? This is the economics literature called the missing Einstein's problem. And in the report what we are doing is giving a very careful look at socio-economic mobility, women in the labour force and other sources dampening within country talent. So, what we have seen in the research we have done is that we took various measures of intergenerational mobility and found that intergenerational mobility in schooling is a very good measure that is the correlation between the parent's education and the kid's education. The higher the correlation lower the intergenerational mobility. And we find countries that have higher intergenerational mobility have a greater proportion of skilled workers. but in most middle-income countries intergenerational mobility is low these are the pictures for people born in the 1980s, so they would be kind of 40 years old adults today and looking at intergenerational mobility, lower-middle-income countries and upper-middle-income countries, they are significantly lower than what we see in high-income countries. But it is not only intergenerational mobility in terms of schooling. It is in fact in many places and this is a story from India that social status is used over talent for screening in the labour market. So, there is a recent paper I think, it is very provocative and important for this audience is the paper by Professor Soumitra Shukla, who looks at how top multinational firms hire from top business schools in India. We are talking about the top 1% of the Indian distribution. So, people going for these job interviews are asked quantitative questions on the application, on the aptitude tests and on the group debates and finally, there is a question and answer session with human resource managers who do non-technical interviews. So, what they ask are innocuous questions which could be thought about as thinking about fit in the organization. So, what are your favourite hobbies, where do you live, and what do your parents do? And it turns out these are not used as cultural fit but turns out, unfortunately, they are used as caste screening. And in fact, people of the lower caste are getting wage offers 10% or so lower controlling for everything else compared to other peers. In terms of lifetime earnings, this is a huge loss. And this would disincentivize many people from spending all these resources and sending the kids to the top schools. So, when talent is not the only thing used in the labour market to screen, there are huge implications for long-term human capital development. So, I am going to end with this slide that just kind of recaps what we were saying that middle-income countries need to recalibrate the growth strategies and economic institutions to support this transition from deepening to diffusion and discovery. But these transitions are not automatic and countries can get trapped at each stage analyzing these transitions from deepening to diffusion and discovery requires a framework that takes into account the relationships between incumbents and entrants. And what we are trying to do in the world development report is to bring forth the advances in modern Schumpeterian growth analyses to such assessments. Finally, a country's growth strategy and its economic institution have to be as dynamic as its firms and entrepreneurs. What we are doing in the report is to share these ideas in three major policy issues. One is on keeping markets competitive, the second is in making elite echelons contestable and the third is engineering a steady energy transition. Thank you very much.

Indermit Gill:

Thank you, Rakesh. I guess the main point behind these models Rakesh is that instead of having a representative agent, we have a distribution of agents in each case. It makes these models more complicated but it also provides the kind of insights that you need for economies that actually have to undergo these institutional transitions quickly. But over to you Rakesh.

Rakesh Mohan:

Thank you very much both Indermit and Somik. I must say that this looks like very exciting work. I do have many comments. I will leave that to the discussants. But certainly, exciting work and in some sense different from what one usually expects from the World Bank. So, I am delighted that Indermit you are leading this charge. And along with Somik. Bibek?

Bibek Debroy:

Thank you, Rakesh, and thanks to CSEP for having given me this opportunity. And thanks to Indermit and Somik for having given me the chance to get a preview of the world development report before it became publicly available. I would much rather Rakesh you made your points instead of roping me in as a discussant. But since I have been roped in as a discussant, here I go. In any analysis like this particularly since this is happening webinar or not really and since several of us live and work in India, inevitably one looks at analysis like this with an Indian perspective in mind. Cross-country work is always very difficult. Because one is talking about a diverse range of countries and India is more heterogenous than most. So, when I went through this very detailed presentation there were two kinds of lenses I could use. One is, here is the reform agenda. A reform template for every country in the world. And India is no exception to that. And the second one is the concept of the middle-income trap and whether that serves any useful analytical purpose over and above articulating a reform agenda. Rakesh, I used to think that Indermit was responsible for this in 2006-07. But you corrected me and said it was 2009. A minor point about a chart on India's share is a very minor point. Which is from Madison and those who have followed Madison's work. While the chart is correct about the share of India and China in global GDP, minor issue about whether that India is the same as geographical India today. But there is a difference between showing the aggregate size of GDP and the per capita. And India and China… and India had that large share because of the large population. So, if it drags the series back to the first century the difference in per capita income as estimated by Madison and others, the difference in per capita income between India and something Westerntern Europe was not much. India was slightly behind. What was different was the size. So that particular chart showed the size, it might be interesting to have the per capita income slide also just to make it clear that it was the size that was making the difference. On the middle-income hypotheses as far as I can see and the PPT itself says this, it is useful to make three… to distinguish between three different arguments. These three different arguments may seem to be similar but there are three different arguments. The PPT mentions these but as I said it is useful to make them separate. One is that as a country grows the rate of growth as it is growing tends to slow down. Now that is independent of what is happening to other countries. And today in India we are in Amrit Kal, and we are talking about a template for 2047, everyone has a view on how India will perform in the next five years, ten years. The World Bank has a view, IMF has a view, ESPN has a view BE has a view. Whatever the view once India begins to grow every economist will admit that the rate of growth will begin to slow down. I'd quickly like to point out that the celebrated or oft-quoted, dreaming with the big study, had an average real rate of growth for India, an average real rate of growth of about 5.5%. That explosion in per capita income happened largely because of exchange rate appreciation. And depending on the timeline, depending on what assumptions that I make about growth, depending on the timeline, purely on those grounds India would break away, might break away from the middle-income trap. But at the level of the argument… so, this argument is about the slowing down as a country begins to grow. At least in real terms. The second argument is an absolute __. And for that, we have a very broad range. We have something like thousand dollars to something like twelve thousand dollars. In my view that is a very, very broad range. If you are going to say something useful, that should be in terms of the upper middle-income category. Not so much the lower middle-income category and just so that we have the Indian perspective clear, in 2047 India will probably move to the upper middle-income category. So, it becomes a very pertinent question that you are asking. This a very pertinent question for India, not today, but it ought to become a very important question by about 2047 when by any reasonable projection India's per capita income should approach around 10000 US dollars. A third aspect of the middle-income argument is in terms of relative to the US per capita, the GDP of the US compared to that. Once I have disentangled these three hypotheses, the question to ask is, is the case for a middle-income trap borne out empirically? Is it borne out theoretically? As far as I can make out after the World

Bank first came out with this in 2006-07, as far as I can make out the empirical literature crosscut cut is still a maybe. Maybe yes, maybe no. I may be wrong because you have said that it seems the countries that have broken out are small. But my impression is that the empirical hypothesis or the empirical validation of the hypothesis is still not very robust. We now come to the theory. The theoretical argument is essentially based on a country that is industrializing, a country that is catering to the export market. I have no quarrels with the reform agenda. I will come to that in a moment. What I am sort of asking a question about is to articulate the reform agenda, how strongly do I need to push the argument about the middle-income trap? Because it seems to me to be neither necessary nor sufficient. One of the PPTs, one of the slides, whether it said exactly this expression or not, made this argument that in the early stages of growth, you use factor inputs more extensively. And therefore, eventually, you have to move to intensive use of the factor inputs, therefore you have to move to productivity increases. Wages rise, demographic transition, and the population begins to age. And you got a reform list including higher education. On the higher education part particularly with the Indian perspective in mind, I think it is important to distinguish between education and access to higher education and skills. Because the correlation between higher education and skills as valued by the market can sometimes be slightly tenuous. By the way, as know the gross enrollment ratio in higher education in India has gone up. It is about 27% or thereabouts. Again, there is quite a bit that every economist will agree with about Schumpeterian destruction, the creation preservation destruction, you did not use the words but it is almost an illusion to Brahma, Vishnu and Maheshwar. On the size of manufacturing, there is some evidence in economic surveys that the size has begun to increase marginally. And this has a little bit to do with greater formalization which has happened in India. That is an argument that is made in your presentation also. The formalization has been improved due to various reasons. There is formalization in the labour market and there is a formalization of enterprises. Sometimes the two are linked. And it is partly improved because of the four labour codes, because of the rationalization of the labour laws in labour codes, but it is still early days because both states have not announced the rules. Innovation patents again, it has a bearing on the higher education system but I want to quickly mention the number of patents filed in India. Patents are, of course, only one form of IPR. If I use patents as a metric the number of patents filed in India and abroad including by Indians, that has sharply gone up. It is nowhere near the global benchmark. But it has sharply gone up. On the mobility part, for me, the greatest mobility barrier in India is not the intergenerational one. Well, maybe it is one, but a greater one is geographical / income spatial mobility. In the US it is remarkably easy to migrate from part of the country to another. Or it used to be. Geographical mobility in India is still constrained despite Aadhar because of a host of different reasons. If I come to India, it seems to me that any presumption that the Indian growth rate will be driven only by exports may be misleading because there are plenty of endogenous sources of growth including plenty of slack in land markets, labour markets, and even the legal system and the aggregate growth rate for India is a summation in the sense of what the states are going to do. So, any growth model for India, I realize you are not doing that… but if anyone were to construct a growth model for India, I think much more than an aggregate production function so to speak, one should look at what is going to happen to states and aggregate upwards. For example, some states in India, at least in PPP terms, they are already high income. But there are some who are still at the low end or the higher end of low income. So, finally, let me congratulate you once again. A very, very useful presentation. I am glad Rakesh invited me. Thank you very much.

Rakesh Mohan:

Thank you very, very much, Bibek for your usual very incisive and thoughtful comments. And I wonder how much more incisive they would have been if you got the presentation more than 24 hours in advance. So, thank you so much, Bibek. Always delightful to listen to you.

Intermit Gill:

I am glad we didn't send the presentation too far in advance.

Rakesh Mohan:

Nitin, all yours.

Nitin Desai:

Thank you very much. Let me begin first by joining Bibek and Rakesh in really thanking Indermit and Somik for this other interesting and challenging presentation. What I really welcome is the shift in your focus. Very much to the Schumpeterian creative destruction model which is something that I hold very dear. I wanted to begin by just mentioning that three months ago when I was asked to talk in the Third Sukhamoy Chakravarthy memorial lecture, I really ended up saying that we want to understand the dynamics of growth you really have to look at Schumpeter and the creative destruction because growth is a product of the __ that is generated by a new person coming in and reshaping the industry. There are others I refer to, which you may not approve of like Kalecki and Marx, but let us leave that to one side. I really wanted to tell you something from that Sukhamoy Chakravarthy lecture. 40 years ago, Sukhamoy Chakraborty said this and it is written 40 years ago. And I read out what he wrote 40 years ago. 'I believe that today material capital is losing out in relative terms about human capital. Once upon a time, it was assumed that natural resources were the key to development. Coal and iron were supposed to be the sinews of economic growth. I am not suggesting they are no longer important. But organization, motivation and creativity would appear to be just as important if not more. While we have acquired considerable skill and expertise in running complex industrial processes, our innovativeness as a nation is yet to be shown.' I read this just to tell you that Sukhamoy Chakraborty in a way anticipated this approach 40 years ago. In many ways, this is absolutely central. Now it is true that what you are talking of, the challenge of moving from the diffusion to discovery, in India's case is probably as an economy as a total we are not going to be reaching the upper end of the middle-income status till about 25 years from now. Does this mean I wait for 25 years for worrying about diffusion to discovery? We are certainly moving in many areas from the deepening to diffusion. But do I have to wait? I would suggest that we need probably a more flexible approach which looks at sectors a little differently. I would give an example. That is an example of our infotech industry. In an infotech industry, this has been exceptional. If you look at the infotech industry growth in India over the past 30 years you will see that those graphs will look very much like the sort of graphs we have seen in the growth of the East Asian countries and so on. But I would now argue that here I have a major part of the economy which accounts for a pretty substantial chunk of our exports which is at this barrier between diffusion and discovery. And you are seeing this now for instance there are lot of the things that are going on. So, one of the things that I would urge is that don't just see this as an economy wide issue of diffusion to discovery. It is something which may vary by what is it that this economy is being driven by. As in our case it was being driven very much by the infotech industry, this is something I would be or should be worrying about. I may not reach 10000 dollars till 2047 but on this sector, I may run into the difficulty of stagnation if I don't address the issue of diffusion to discovery. The second point I wanted to stress, even in the context of infotech is, in a large country like India, you should not look at this diffusion to discovery largely in terms of what it means in terms of exports. It is certainly important in terms of exports. But it is also important in terms of how you integrate these with the domestic economy. One of our weaknesses in India is, there is only 20% of the turnover of the infotech industry actually are is domestic sales. 80% is export. But yet at the same time the domestic digital industry is developing fast. The government has been very good in this in developing the public digital networks. Like Aadhar, like UPI, the new things that they are doing for bank accounts, what they are doing also for e-commerce. So would say that in a country like India, I would increasingly suggest that you look at this challenge of this Schumpeterian challenge as an integrated thing between those things on which you depend for your foreign __ and what you depend on for your domestic market expansion etc. How do we do this? India is not very good at all. Whatever you may say about patents, the fact is the percentage of our GDP that we spend on R&D is under… it is about 0.7%. It is way below what is there in other countries. Even in our infotech companies, the percentage of the turnover they spend on R&D is under 1%. These are companies which are involved in that. Now, infotech is an interesting one to look at because it also to some extent reflects the sort of things that you were talking about. You say the incumbent, is somebody who is going to stand to against the start-up if the incumbent is going to be with the start-up. In this case, the incumbents are not against the start-ups. A huge number of start-ups are in this industry. And that is something which is very important. 25000 start-ups are as important in India's infotech industry as the five or seven big companies are. So, in many ways looking for a variety of this sort is to me important. I am not going into the other sectors. I am just talking about infotech because in some ways it illustrates what you have been talking about much better than if you like the economy as a whole. So, the challenge, one thing that you correctly mentioned of small industries remaining small industry and continuing to survive is important. One of the weaknesses of India has been that till recently we had policies which stopped small industries from expanding. Partly because the transition from a certain number of employees to a larger number of employees makes you subject to all sorts of regulatory restrictions and so on. But leave that to one side, I think it is also something which is determined by the structure of the market and the economy. I think you are right to focus very strongly on the mobility. But the mobility that I think you correctly focus on is not geographical mobility necessarily. It is what I would call mobility in skill acquisition. When you describe the lack of sufficient intergenerational mobility in education or elsewhere what we are talking about is mobility in skill generation in the population. And that is what the mobility we are talking about. I completely agree with you that one of the greatest weaknesses has been, we have not successfully done enough on that front. And to some extent the differences I see between south India and to a certain extent western India and North India is partly attributable to the difference in the education systems. A very substantial difference in the education systems there which were much better in terms of allowing people to accumulate skills than what were the systems up in the north. So, my point is that, yes, India will not be, as a country, as a whole, will not reach that challenge… take a place like UP, I wouldn't worry about discovery there. I will worry about simply getting it into the diffusion stage. If I were looking at Tamil Nadu or Maharashtra or something, I would probably start worrying about actually discovery. So, in a sense, India is a very varied country and the challenges that you mentioned are relevant, for certain sectors and certain parts of the country and certainly we have to address this even in 2047, we have to address these issues of research, education, mobility, etc. now. Not 25 years from now. And I am very happy with this report and I look forward to when it comes out next year. I hope that we will be able to use it to put some pressure on the government of India too, so that they are probably willing to look at these things. So, thank you very much and I once again thank you for a very nice and interesting report. One small last point. You did not mention the Korea case that you had presented in the presentation. One small request I have is that when you do the report try and also look at the China case. In many ways for a country like India that China case should be even more interesting. And I hope that your report will say something more about what happened in China over the past 30-40 years. Particularly from this package of deepening, diffusion and discovery. Thank you very much.

Rakesh Mohan:

Thank you very much Nitin once again for those thoughtful remarks. Being aware of your sense of economic history and also economic thought. I would suggest Somik and Indermit that you do some brain mining with Nitin. There is lot of there to mine while you do your report. Would you like to respond to some of the issues raised by Bibek and Nitin before I go to the audience questions?

Indermit Gill:

I could actually wait until we get questions from elsewhere. Somik, do you want to… Well, the only thing I wanted to really quickly show is the thing that I think Bibek mentioned the chart that came to my mind when he was talking was this one here. This is what we call our hang time chart which is real GDP per capita over here. It is a log scale. And then over here we have real GDP per capita growth. If you sort of look at this you actually find India is the light green one. So, India actually goes up to about 5 or 6% and if you contrast this with China Nitin, you actually see China is like dominates it entirely. Which is this one over here. If you see Korea, it actually does the same thing over a very wide range. It actually stays about 6% per year growth. And that is Singapore over here and this over here is Japan. But India looks a lot more like the Indonesia's and Malaysia's and so on. It is basically hovering around 4 or 5% for a reasonably long period. The other thing that struck me about Bibek's comments were, I was looking at the per capita GDP across the states. I think it would be worthwhile looking to see whether or not the differences across states in India are greater or smaller than the differences in GDP per capita in China during these periods. I suspect that the differences are much smaller in the case of India as compared to China. Perhaps what that means is that and especially over the next couple of decades and so on, one would probably want to see growing dispersion in per capita GDP across states rather than a small or rather than a dim or rather than those gaps shrinking too quickly. I will stop over here.

Rakesh Mohan:

Thank you Indermit. Somik?

Somik Lall:

I just have two comments. One on the question of mobility. So, both Dr. Desai and Debroy mentioned mobility in different angles. In fact, we are looking both at spatial mobility as well as intergenerational mobility. I just used the example of intergenerational mobility here. But one of the bigger cases that we see are these papers of India's limited spatial mobility because of the public allocation and distribution system. So, we are looking at both and trying to see what matters. But what the literature does show us is that these intergenerational issues are far more persistent and they kind of stick on for a long time and it reduces the incentives for people to invest in human capital. So, we will be looking at that very carefully. Second, Dr Desai you mentioned this issue about network scale economies in the tech sector. In fact, we spent some time today having a conversation with people who work on the digital public infrastructure. And trying to explore whether the digital public infrastructure in India can be used as a way to get entrance into the market because now they don't have to invest in network scale economies, but they can plug and play. And is that a new model that can be used to have alignment between incumbents and newcomers. So, we are working on that and we will be showcasing that in the report. Dr Debroy, on your questions on convergence, much of the literature that you have correctly pointed out I think shows that the cross country convergence in income levels and the lack of convergence is a questionable one. There are papers that have been published over the past few years saying that in fact, convergence or conditional convergence is happening. But the speed of convergence is incredibly slow. So, for an average middle-income country to grow to high incomes it would take upwards of 75 years. Now, is that something even though the numbers in general saying there is a positive trend in the data, the speed of convergence is so low, right? So, I think we are trying to also make a case. Don't look at the levels of income. Look at the stages of development. That is why we are looking at these issues of capital deepening, diffusion and discovery as ideas that the things you do when you have to deepen are quite different in terms of policy, in terms of firm dynamics, in terms of social mobility than when it comes to diffusion ideas and when it comes to taking risk in discovery. I think this is really building on micro foundations and moving away from these cross country growth estimations to see what is happening within economies. I think the point Dr Desai made is important and we will take on board is, for large countries there may be different sectors at different levels. And it might be useful to recognize that and that is something that we haven't done in articulation yet. But I think going forward we should bring that in. Then the point Dr Debroy you made, what is the theoretical point? That is a great question. In this move from diffusion to discovery that all these coordination failures and first _ problems as risk are increasing, as we do discovery, eight out of ten will fail. Who are the agents who will make that change? Who are the agents that will kind of test incumbents and allow for newcomers? So, it is a whole new way of thinking about coordination failures and not just market failures. And those we believe are the real traps that are holding economies back. I will be happy now to come by and maybe we can talk further at some point. But these are great comments and we will get back on the details to you as well. Thank you.

Indermit Gill:

Two other quick points, Rakesh. The first one was I think I agree with Bibek that actually the existence of a middle-income trap is neither a necessary or a sufficient condition for the problems that we are identifying to be sort of important and need to be tackled. I guess the only thing Bibek I would sort of say is that somehow this term middle-income trap seems to sort of get the attention of policy makers a lot. And it is a great way to just frame it because especially in east Asia, they are just obsessed by it. The other thing I guess it came out of a discussion both with Suman and also a presentation that I saw Nitin make during the last Cortelia conclave. Had to do with this – are we asking middle-income countries to grow without fossil fuels. Or are we sort of expecting them to do this without that they will need to get to high income without fossil fuels. So, one of the things that we tried to do Nitin was to also hear, just as we move away from representative agent models when it comes to enterprises and to households, we also thought let us look to sort of look at the dispersion of energy sources across country groupings. So, when we looked at that we actually tried to sort of look at it from high carbon sources like coal all the way to clean things like hydro and so on. And tried to sort of see what share of energy of low income countries, middle-income countries and high income countries come from these different types of things. One of the main things that comes out Nitin is that, the main difference is not in the clean sources. It is really on the fact that you actually find that high income countries have moved from very high carbon sources like coal to mid carbon sources like gas. Then you sort of start to think about what is a successful energy transition? Is it one in which you actually find that the rich countries move from mid-carbon to low-carbon and the middle-income countries move from high-carbon to mid-carbon and then on to low-carbon? So, how does one do it? Right now, the way that I would sort of frame the debate is the rich countries will stay where they are because their emissions are fairly low, emissions per capita are fairly low. It is the middle-income countries like India and China that should leapfrog all the way from coal to clean. So, we are actually looking at those transitions and all too. The only argument in favor of that kind of a transition is what is normally called as lock-in. So, then you start to sort of say – ok, you don't want middle-income countries to move to the middle because they will get locked in there. But if that is the case then it would also be the case that high income countries are already locked in there. So, what is the rationale for saying that – oh, you can't move the same way that high income countries moved. You have to move in some very, very different way. But we are hoping that some of these things will actually come back to you with some early results, Nitin. And we will actually try to sort of get your views on this one too.

Nitin Desai:

Rakesh, one quick word. I want to suggest to you, there are many ways instead of focusing just on middle-income trap, focus on middle development trap. Rather than middle-income trap. Then you can talk separately about the energy industry, about the infotech industry, about agriculture and so on. In many ways this becomes quite relevant. The deepening, diffusion discovery parameters that you are putting out is very relevant if you start looking at it as a middle development trap rather than just as a middle-income trap. Even a poor country may face a middle development trap somewhere. That is just a thought I will leave it with you.

Rakesh Mohan:

Thank you, Nitin. Thank you, Somik, Bibek and Indermit. Now we have half hour for discussions. One general point that has kind of been touched on but Surjit Bhalla has asked and I happened to agree with his question therefore I am taking his question first. The original middle-income trap thesis in terms of constant US dollars or PPP, are the results different? I think that is a broader question actually than I thing the way Surjit Bhalla has put it. Nitin just referred to that, is the high income the same for advanced economy or high income the same as developed country? So, it is really looking at development because one of the things that does happen as you grow in income is of course, the PPP factor becomes less and less. So, this is also to do with the convergence issue with _, that, is the convergence if you look at the PPP the same results as you get from market exchange rates. That is one. Again, another question from Surjit I also happen to agree in the sense of asking the question is, is the lack of intergenerational mobility leads to a decline in investment in human capital, then why in India and other countries education expansion been the highest. So, in fact, Bibek mentioned the fact that the __ ratio for college education is around 27%. So, that really raises the question that if intergenerational mobility is such a problem, then how is it is happening? Actually, most of this has happened in the last 20 years. If I am not mistaken Bibek from what I recall. It is mostly in the last 20 years. That suggests huge intergenerational mobility of 27% of cohort going on to college many of whose parents I think maybe even illiterate but certainly not having been to college. So, the two questions so you want to take or a few questions more? Okay. So, another question from Mr. Zaidi Sattar from Bangladesh. I will just articulate his question myself which was - is development same as high income and here another question that are you sort of saying that you can attain middle-income through the export led strategy? But can't get to high income through that because you then have to go towards the discovery phase which doesn't happen through high export growth. So, maybe if you take these questions, I will come on with the next lot.

Indermit Gill:

I think the Korea case is pretty instructive in trying to sort of look at all of these questions Rakesh. Because one of the thoughts that I had was like, in the early 90s you had the Chaebol ending up with a lot of power and really connected to the politicians and then they ended up I think creating these banks which then basically proceeded to borrow abroad short term in dollars and lend to their own conglomerates. Long term in one. As a result, you had these massive mismatches. And the government actually got on to that problem and they were trying to sort of change the laws on those things and so on. And they kept getting defeated. Then you had the 1997 crisis and you had a drying up of these funds and you basically had a foreign exchange crisis as a result of it. And what the government in Korea did then was to actually use that crisis with the prodding of the US and the IMF and World Bank and others, actually changed the financial sector regulations, so that these conglomerates couldn't do these kinds of things anymore. Now if you then sort of look at it, you had this big distortion in capital markets and as a result of that that distortion kind of got removed. But then by the same token and it was because you had an export-led strategy but you also had these flows from abroad coming in. So, it was to this extent an open economy part of things that actually created pressures for these reforms. Now by the same token if you look at Korean labor markets, they tend to remain distorted because there were no outside interest in the way Korea organizes labor. So, in some sense I think that having an open economy model does help you to the extent that your institutions require updating and so on. They probably generate more natural pressures to actually do these things than if you had a closed model. So, I don't know if that is the thing that…it may well be that you need an open economy model all the way through middle-income and perhaps also into high income and so on. The second point about… I couldn't verify how we first classified the trap. Whether it was PPP terms or whether it was market exchange prices. I can check on that and I can answer back to Surjit on that one. But I still don't know why does it matter, that is the part that I don't know. If it is all relative to the frontier economy, does it matter still?

Rakesh Mohan:

Well, if you start getting nearer the frontier economy somewhat faster in terms of per capita income because of the change in ratio of the…

Indermit Gill:

In PPP terms. Got it.

Rakesh Mohan:

That has to be thought a little more carefully on what it really means. But then on the mobility intergenerational and otherwise?

Indermit Gill:

I will leave that to Somik Lall. The other thing that Somik didn't explain particularly well I thought was that chart that you had on the incumbents or the market leaders vs the market followers and the amount of patenting that they did vs the amount how close they got to politicians. That was a striking chart in the sense that you actually find that market leaders in Italy tend to have more top level politicians on their boards and things like that. That is the kind of stuff that I think India should probably be really careful about in the sense that you actually do find that these big industrialists might end up becoming very, very powerful. And by the same token they end up becoming both powerful and non-innovative and so as a result of it they actually stop innovation being done by people who are trying to sort of break into the market. So, I would actually worry about that for India. I would worry about that for India even at this stage. Not at the upper middle-income stage. But also, at the lower middle-income stage. For the kind of things that they had mentioned in the sense for a large economy you have some sectors that actually do need to move on to the next D from deepening to diffusion to discovery. So, you don't want to be sort of too dogmatic about it saying that – oh you know, these kinds of problems we can wait until we get closer to the upper middle-income levels or well into the upper middle-income levels. India probably has to deal with all of these problems all at once. The last thing I wanted to say is that if you look at the kind of things that Korea did, so, I can actually show you a slide on this one. If you look at the kind of things that it did, it is truly remarkable how difficult these things were for any country including Korea, right? And the sort of things that Korea did was quite striking in the sense that if you sort of look at… so, I have a chart over here that I can show you. So, what we tried to sort of do was to see exactly what did Korea do along the way. So, we found that of course, the first thing was especially after 1997-98 a competitive exchange rate, shift from quantitative restrictions to tariffs and then you lower the tariffs, you reduce the barriers to FDI, you also sort of take privatization of state owned enterprises, rather regulation of new and do actually much better on competition, property rights, early on fiscal balance, government spending, tax effort etc. I show all of these things to my students sometimes and they all sort of agree with all of this stuff and then they hate this chart. Because if you sort of look at it you actually find that this is all textbook Washington consensus stuff. So, it is not… these are the necessary conditions in this and not sufficient conditions, but necessary conditions. And then if you sort of compare them with the Brazil's and the Chile and the Mexico and so on, I think some of this is an important part of getting out of this middle-income phase quickly. Let me stop here.

Rakesh Mohan:

Thank you Indermit. Somik, you want to say something on the mobility?

Somik Lall:

Let me share my screen. I think the question on mobility is something we look at correlation and schooling outcomes between parents and the children. And that is a measurement of mobility and on the Y axis you see proportion of skilled labor as defined by the ILO. These are professionals, technical workers, managers, officials. And what we see is India is still pretty low, right? So, it is intergenerational mobility…

Rakesh Mohan:

If it is the per capita income then you know Nigeria is higher even though I guess the per capita income must be similar to ours. Otherwise, Morocco, China, Colombia, Chile are all much higher. So, this is what you would expect.

Somik Lall:

But there are many countries off diagonal too, right?

Rakesh Mohan:

But the issue that I think Surjit is raising and I am raising at the same time is that given the huge expansion of education at all levels in India, starting from primary being about 100% to 27% in colleges, of course, we all know about the quality problems. But the only point is if there was a major social mobility problem in terms of people whose parents are not similarly educated, they are actually going to school now. How good an education they doing etc. the secondary question? Whether because of social reasons is the kind of thing that we talked about from Soumitra Shukla's, he was my RA by the way. He is in the federal reserve now. That is what he was doing in his dissertation actually. It was very interesting. So, there could be this issue of social mobility that even if you get educated because of your background you don't have the same opportunities. But that yeah, I think that is generally true. So, some other questions have come from the audience. This question from Mayank Shah – in India firm sizes in terms of employment probably remains small maybe not for lack of innovation, but for lack of capital which he then says fallout of socialist model and policy. I think Nitin partly answered this question that maybe they were small because of the small scale industry reservations and other regulations that we had. But I think some of the research that have been done say the last 10 years suggests there hasn't been that much change even after this small scale industry reservations were removed. And this is a micro research, firm level research. Yet, so far, I am told, one doesn't see that much change. I don't know if Bibek has more information on that.

Bibek Debroy:

Economic survey argues that there has been a slight increase in size. Again, one ought to differentiate between the services sector and manufacturing. In manufacturing survey, I will give slight increase in size, it is still slight. But I thing the reason is that the rules under the four codes have still not been notified by the states. And it is not just the industrial disputes act. Different labor statutes historically had kicked in at different levels. So, the labor market is still not yet completely flexible.

Rakesh Mohan:

So, the question that still arises in my mind is that if China could have more than 100 million people in organized sector manufacturing, I think was it 10 or 15 years ago actually if I remember correctly, around the mid-2000s and we have still only about 15 million or so with the same similar size we are talking about. Are the labor regulations that we have had and as Bibek is describing that some of the reforms have not yet gone through, would that explain all of that huge difference?

Bibek Debroy:

Are you asking me? They ought to be answering the questions.

Rakesh Mohan:

I am asking them. But if you would like to answer you are welcome.

Indermit Gill:

I think Bibek should answer that question.

Bibek Debroy:

But look Rakesh let us be clear about the definition of formal. Historically there was a factories act definition of what is organized and formal. I do have some kind of definition that there are about roughly speaking about 30 million people in the formal sector. That is one kind of definition.

Rakesh Mohan:

In manufacturing?

Bibek Debroy:

No. Overall of which about 20 million… 18 million or thereabouts is government, the rest is private. I have a different kind of definition which is in terms of people who have access to social security. EPFO and stuff like that. Then the number will now be pretty close to about 50 million. And if I take away the agriculture part of it, this been some increase in formalization however I wanted to define it. As I said earlier formalization of enterprises is different. But the enterprises have also become more formal. Partly because of GST and now with the GST number being used as a form of identification we will have greater formalization incrementally.

Rakesh Mohan:

You want to add something Somik or Indermit?

Indermit Gill:

There were other points that Bibek made about… he said that we should also look at per capita incomes, the long term trends, that I showed into the Maddison. The reason why I was showing that Bibek was, I actually realized quite late in my career about the politics of these changes and so on. That is the reason why it was for the first time that when I went back and looked at the numbers for the countries that actually have gone to high income rather quickly. They tended to be very small. And then I think the only country that actually went back into high income was Japan after the war, right? Or went into high income I guess in the 70s or so on. There was quite a bit of resistance in western markets about… they started to sort of take over markets in these countries and so on. The only reason why I mentioned them in aggregate rather than in per capita term. In per capita terms we should also look at it but in aggregate I mention it because there is going to be a lot of resistance to the rise of India just as we are seeing it for China and so on. Some of them are for the kind of things that we are talking about, democracy and so on. But the other part is just simply that you will be taking space from the current incumbents in terms of economic power and so on. You can sort of see that in multilateral development bank shares etc. all of these things.

Bibek Debroy:

My limited point was that this kind of chart is shown quite a bit. My limited point was in all fairness one should mention clearly that this is because of the size. The per capita difference is not that much. But if I were to draw out the argument for India, I would add that at till a certain point in time India was much more of a trading country. In some sense the relative decline, pre industrial revolution, industrial revolution was a different thing. In some sense pre industrial revolution, the decline started. The relative decline started with the collapse of the roman empire, the collapse of trade. Including the eastern roman empire, not just the western one. So, it was the collapse of trade in some sense. It should make all of us happy. Meaning as an argument.

Rakesh Mohan:

Can you comment on the collapse of the roman empire?

Indermit Gill:

No. the other thing I wanted to sort of say really quickly, I think I understand the point that Surjit is making. Again, because if you have convergence in PPP terms it means that you are looking or I guess you are emphasizing convergence in living standards more than you are emphasizing in income terms. So, that is a very important distinction because I think that the political point that I am making is probably weaker when you say – ok, what we really want is convergence in PPP terms. Not necessarily in nominal exchange rate terms. The other thing I found by the way is that when we were having these discussions about how the World Bank should actually have these three goals instead of two etc. the thing that we also came up with was a convergence indicator for middle-income countries. And I was surprised that people who actually very much in favor of convergence within the European union in all forms, PPP, income, etc., living standards everything were are not as enthusiastic about it when it comes to things in global terms.

Rakesh Mohan:

Just a general issue of going from… just one question from the audience. Since it is the zoom audience I wanted to be as fair as I can. And of course, I have restrained myself accordingly also. One general question, the other point you made was that in the transition from lower middle-income to high middle-income to high income, you have these transitions and so, one question that has come up from Amshika Amar who was at the World Bank until recently and now is with CSEP. She says somewhat different fashion, for Korea they probably could implement good policies as they had robust institutions which may not be the case in other middle-income countries. So, indirectly good institutions, courts, land reforms, etc. impact the process of creative destruction. I am kind of slightly modifying her question to re-focus it on what you had said. That, is it the case that the countries that have actually successfully transitioned like Korea and we can't just concentrate on Korea because you can't take an example of just one country? Is it the case that the economic institutions they had did change significantly to allow that transition? Which is different from saying that they always had good institutions.

Indermit Gill:

Yes, yes. Exactly. I think that distinction is important. So, as I was listening to your question Rakesh, I was thinking maybe there are these other types of institutions that make sure that the economic institutions get updated more and more quickly. The institutions related to resolution of conflicts among people and so on. But by any of those measures I would not say that Korea started out with very strong institutions and so as a result they did very well. Now you did have certain sort of fortunate events in Korea. The fact is for example that Korea did a very early land reform and you could call it a fortunate thing or you could call it something that was actually forced on Korea by the fact that there was a north Korea and south Korea. So, south Korea had to sort of compete with north Korea in terms of egalitarian institutions. So, as a result they actually put that and they redistributed the land like two thirds of the land very early on. For probably the same reason that Taiwan did something very similar too because Taiwan was competing with mainland China in terms of egalitarian institutions as well. So, they had these sorts of lucky instances in some sense that they ended up with it. And by the way one cannot over emphasize the importance of some of these things for Korea then being able to get to high income with a Gini coefficient of something like 0.25 as compared with Chile that got to high income but with a Gini coefficient of 0.5. So, as a result you end up having a much stronger set of economic institutions and so on in a country like Korea than you did in the case of Chile and as a result of its euro then starts to keep going upwards and it is at 38000 or 40000 dollars per capita while Chile has been hesitating coming back down again. So, these are sort of some things that are actually part and parcel of the modern theory of creative destruction as adapted by people like Aghion and others. And that was part of the reason Rakesh why we thought let's bring in this toolkit into our understanding and the sense that I got Rakesh was it was almost like what you really need to do is that you have to come up with an x-ray of the economy to actually understand exactly what is the anatomy of an economy in a sense. We were using x-rays while these guys were actually saying – well we actually have MRIs and things like that which will help you understand this much better. So, that is what we have tried to sort do is bring in some of these guys into the team. And as a result of it what we are ending up… it will end up being as much as a data agenda just so you know, because while these are better instruments and so on, they are much more data demanding.

Rakesh Mohan:

I think the last question since it is 5:55 and you have to catch a flight tonight. I think one good thing that we have done is that we have improved your health because from the beginning to now you are certainly looking brighter than you did in the beginning. So, what this means is whenever you don't feel well just let us know and we will organize a webinar for wherever you are. One last question. It is a good one I think, interesting one looking into the future actually. This is Sandeep Hasurkar. What role will demographics play in breaking out the middle-income trap including moving to diffusion and innovation. Particularly in the case of a country with severe demographic challenges like China and a rapidly changing geopolitical economic scenario with growing barriers to the global trade and slowing investment led engines of infrastructure and real estate. So, again if I can broaden that question that one of the different things that is happening in the next say 20 years or 50 years as compared to the previous is actually many populations will decline. And then what happens to diffusion, innovation, discovery, growth and would it be more difficult for middle-income countries to graduate or lower middle-income countries graduate to high middle-income countries? And why?

Indermit Gill:

I don't know if Somik wants to answer this question.

Somik Lall:

Well, I have one part of the answer maybe. I will turn to you. So, if human capital is an important driver of growth and the number of people getting human capital reduces, then we have to figure out ways that more and more people get specialized skills. Because that is the only way we can go from diffusion to discovery. And I know there were questions on the validity of the social mobility metric and others. But more economies and societies have intergenerational social mobility. The greater is the incentive to acquire specialized skills. One of the famous examples here is that if Americans at the turn of the 20th century were asked whether black Americans should get education, Americans would have said no because they thought their place in society was one where they did not find the returns to education. As a result, white Americans felt no value to giving them education. But those norms have changed. And clearly, I think more and more people getting specialized skills is very important. Especially when the number of people in the economy is shrinking. But Indermit let me turn to you for a broader answer.

Indermit Gill:

I guess the thing that kept popping up in my head as I was listening to that question was you talk about demography and you talk about people who are of working age. That is what you normally sort of think of. But I think that for growth reasons and so on you actually really do want to talk about people who are actually working and I think that there is no point having a really good demography in that sort of more general sense if you have a really poor demography in terms of labor force participation and the sort of thing that you were pointing out in the sense of an allocation of people. Basically, a better allocation of people with ability to tasks. And one of the biggest distortions Rakesh I don't know if you agree or not, I find for example in Indian households many of them you actually find that the person who is way smarter is actually the women as compared to the guy. I think that is true in your household Rakesh, it is definitely true in mine. If you actually…

Rakesh Mohan:

Definitely true in Nitin's.

Indermit Gill:

So, I think that is the other part of it. That is why I think in India there is a huge danger that India misses that 30 year window because you actually have a thing. Now then you have to sort of say – ok, what do I really prioritize? So, do I try to sort of bring women into the labor force. Now, I think I am sure that the solution won't be just one thing. But the fact that we don't have a manufacturing sector, an organized manufacturing sector has got to be a problem here. Because one of the things that you sort of saw in east Asia and so on that light manufacturing was a sector that pulled people who were being released especially women who were being released out of agriculture as the part of an urban labor force. That was a natural place for them to go in. So, these case studies between West Bengal and Bangladesh are indicating the same thing and so on. We probably sort of get into all of these other issues. But again, it is my own sense of it is that the thing that I take away from all of this stuff is one, if there is the report cannot be useful to India Somik we would have failed. It can be useful to like ten other countries, but if it is not useful to India… I think India is our main candidate to see how useful it is. One of that is that. Second one is this whole thing about the power of incumbency, whether it is male, female or whether it is rich, poor or whether it is big firm, small firm and so on. I think that is the sort of key thing holding back these countries. It is worth testing that hypothesis too. To the extent that that is the central part of the Schumpeterian hypotheses, I think. But this was a very, very useful thing. You are right, I feel much better now than I did at the beginning Rakesh. Thank you very much.

Rakesh Mohan:

Well, I better conclude since it is one minute past six. There is a couple of suggestions just arising from the last few points that you made. One, this issue of export of new technology or labor intensive or whatever you call it, goods, there is a kind of conventional wisdom today is various people saying have missed the bus who are not in the bus earlier. So, one suggestion is that I think it will be very good for the world, for everyone and certainly for India, if there is some estimation of expected goods demand in the world in the next 20 years. And if I can say my prior on that is that if it is the case and this is again connected very much to your whole issue of middle-income countries growing, if it is the case that the whole of east Asia, the whole of ASEAN plus China plus south Asia, which is about 4 billion people or thereabouts. If they grow at say 4% a year for the next 20 years or 5% a year for the next 20 years, while the secular stagnation in the west which Larry Summers made well known and because they are western centric, then the question is that won't there be enough good demand higher than what there was in the 90s and 2000 from the west which brought up all the east Asian economies. I think it would be a great service if you can actually… I don't know, this is my kind of prior in the sense of just basic numbers, but I think it would be terrific if you are able to do some thinking on that because it goes to part of your question. Second that you have done some low, middle and high, many of the countries that are relatively, particularly India is questions going from lower middle to high middle. Which also Bibek I think pointed out. That we are not anywhere near the high and the questions… true for many other countries as well. Finally, I think a lot of this framework that Somik outlined to do with Schumpeterian creative destruction etc. is essentially to do with R&D, technology development etc. Again, for the case of India I know you worked a lot on Brazil earlier, you would be happy to know that in my course at Yale I prescribed one of your articles on Brazil in the reading list. The point is that one of the differences in successes between China and Korea is a very different pattern of technology, higher education, science, R&D, etc. So, I think that whole thing that goes into the Schumpeterian creative destruction as well. Nitin, before I finish would you like to give some ending pearls of wisdom?

Nitin Desai:

Nothing much. I look forward to seeing the report which comes out and I am very happy with this focus on Schumpeterian approach. Because unfortunately for a long time this has been neglected in the understanding of growth dynamics. I am pretty happy it is back and it is absolutely essential to understand.

Indermit Gill:

The other thing that we took away from your comments Nitin was the point about trying to sort of see, don't focus just on the income levels here and try to actually look at the development levels and we have been actually starting to work on that one a little bit. But based on your comments we will actually give that much more importance. And there is a lot of thinking within the World Bank too in the sense, they actually sort of feel that there are many countries that just because they cross that threshold they are then sort of removed from priority list of countries in which we work and what these guys saying is that – look actually these countries have just become fortunate in the sense, but their income growth has outstripped their institutional upgrading and so, as a result of it they still have essentially lower middle-income or upper middle-income country bones even though their income levels are higher than that. And we will investigate that one as well.

Rakesh Mohan:

Lot of that is true for some of the oil exporters.

Indermit Gill:

Definitely. Definitely the case for them.

Rakesh Mohan:

Somik, any last words before I end.

Somik Lall:

Just wanted to thank you, our discussants and all the participants. But Dr. Mohan maybe once we have more results you could invite us back to another seminar to update and to make sure the results are of use and maybe in the late summer. That would be very…

Rakesh Mohan:

Other thing of course, is that you could invite all of us to Washington in the summer, because it is very hot here at that time.

Nitin Desai:

Not me. Prefer webinars.

Indermit Gill:

You have forgotten Washington summers Rakesh obviously.

Nitin Desai:

Thank you very much.

Rakesh Mohan:

Thank you. Bibek had to log off a bit earlier. Let me thank him for having participated in the way that he did. And thank you very much to all of you and also to all the people who participated in the seminar on zoom. We have actually 25 questions and what we are going to do is that I think I picked out what was of interest to me which may or may not have been fair to them. So, what we are doing is to collect all of them and we will send them to you. And if you find them useful at all. Once again, all the very best.