

BROOKINGS INDIA

2018-2019
**ANNUAL
REPORT**

Quality.
Independence.
Impact.





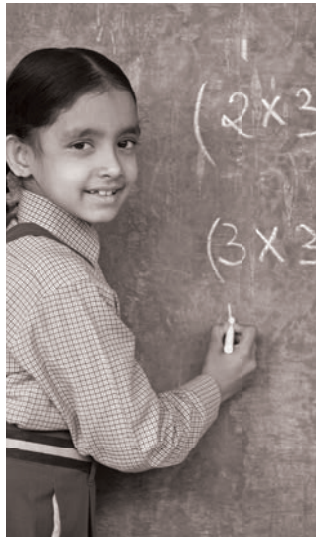
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**ANNUAL
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Who We Are

Brookings India is an independent research institution working towards designing solutions for India's policy problems. Established in 2013, it is an overseas center of the Washington, D.C.-based Brookings Institution, the oldest independent think tank in the world.

Our single focused mission is to produce and promote independent and high-quality research that contributes to India's nation-building. The institution serves as a platform for research on a number of issues, including Development and Governance, Foreign Policy and Security, and Natural Resources, Energy and Sustainability.

Brookings India builds on a strong foundation of experience and expertise with policymaking and an active programme of policy-shaping activities on India. Brookings India does not hold an institutional view on any subject.

Brookings India is registered as a non-profit institution under Section 8 of the Companies Act 2013 (formerly Section 25 of the Companies Act, 1956). All our research products and publications are online and available for free. Our fundamental objective is to offer data-backed recommendations to solve India's urgent challenges. We aspire to do this in a way that fully reflects the core values of analytical quality, empirical evidence and independence of views.

From the Chairman's Desk



A handwritten signature in black ink that reads "Mehta".

Vikram Singh Mehta
Chairman & Senior Fellow
Brookings India

I am delighted to present the Brookings India Annual Report 2018-2019, that gives an overview of our research, events and activities in the last year.

Brookings India is, first and foremost, a research institution. We pride ourselves on the evidence-based, policy relevant and peer reviewed research we produce. We are conveners – bringing together policymakers, academics, diplomats, industry insiders, media practitioners for a frank exchange of ideas. And in everything we do, we aim to effectively impact and influence policymakers.

In our core areas of focus, we continue to advance the debates and dialogue. Our scholars made important interventions on a variety of subjects including health, gender, education, the economic slowdown and unemployment, India's energy needs, the coal versus renewable debate and India's position in its neighbourhood and the world. Several key reports published this year highlighted key sectors and challenges, such as India's nascent impact investing market, defence indigenisation, and mapping future electricity and coal scenarios.

We significantly expanded both our capacity and the scope of our research, initiating several new studies and projects that closely examine emerging challenges. A new collaborative initiative looks at the social, legal and economic outcomes of securing property rights.

In foreign policy, our scholars are mapping India's regional connectivity, China's rise and its implications for India, the Indo-Pacific and Act East policies, BIMSTEC and India-EU relations.

Two new studies – one on the natural gas consumption in India and the other on non-fuel minerals and mining in India – aim to assess the potential of these key sectors and prepare a cogent set of policy recommendations for the government. We launched the Brookings India Electricity and Carbon Tracker, a digital tool that shows electricity generated by source and electricity-based carbon emissions in near-real-time – an important resource for researchers in the field. A multi-year study on the power distribution sector explores the economic viability, performance and social contract of Discoms.

Our aim is to anticipate and analyse the next set of policy priorities for India, as it endeavours to eliminate poverty, achieve upper middle-income status, balance its energy requirements with leadership on climate action, harness technology and rapid urbanisation, and cement its position on the global stage. We consider ourselves strategic partners in policymaking, and will continue to find evidence-based solutions to the challenges the world's largest democracy encounters in its development trajectory.

India 2024: Policy priorities for the new government

On May 23, 2019 India voted in its 17th Lok Sabha, and a new government was formed under the leadership of Prime Minister Narendra Modi. Scholars at Brookings India contributed to critical policy debates that will shape India's path in the near future.

India 2024: Policy Priorities for the New Government, edited by Dhruva Jaishankar and Zehra Kazmi, a compendium of 13 policy briefs by Brookings scholars identified and addressed some of the most pressing challenges that India is likely to face in the next five years. Each Policy Brief was based on longer, in-depth and academically rigorous publications from the scholars. The memos provide specific recommendations to improve urbanisation, healthcare, higher education, neighbourhood policy, national security management, India-China relations, de-carbonisation, and electricity pricing.



India's focus in the next five years: Ahead of general elections, experts at Brookings India weighed in on the key challenges for the country

“An “Energy and Environment Security Act” should be passed to bring energy and environment into the national narrative; to set out the road map for managing and mitigating the emergent challenge of balancing economic development and energy demands with the goal of environmental protection; and to mobilise public support for the policy and regulatory changes required to hasten the transition to a non-fossil fuel based energy system.”

Vikram Singh Mehta, *Indian Express*

“Going forward, government policies must focus on all the three aspects of sustainability: economics, environment, and equity.”

Rahul Tongia, *India 2024*

“India has the world's fifth largest defence budget but is also the world's second largest arms importer. Not only does this compromise national security, it means that India cannot offer an alternative as a defence supplier to countries in its region.”

Dhruva Jaishankar, *The Hindu*

“Having reached a stage where full household electrification is within touching distance, the task on universal access to safe and affordable energy is just beginning. This signals a gradual shift in focus from provision of hard infrastructure to ecosystem level issues.”

Mohd. Sahil Ali, *Hindustan Times*

“Given the basic right of every citizen to affordable healthcare and the inelastic demand of health needs, the government should follow a twin approach to accelerating healthcare reforms. It should vigorously improve public care while also bringing in regulations to facilitate the rapid growth of private healthcare markets in India.”

Shamika Ravi, *India Today*

“India's first and foremost challenge will, therefore, be to bridge the growing gap between increasing political commitments and its stagnant administrative capacity to follow up. India will continue to underdeliver until it expands its capacity to implement.”

Constantino Xavier, *Hindustan Times*

“By 2050, more people will be added to India's cities than are currently living in them. Cities have been a relatively recent priority among policymakers and governments have become inclined to announcing the odd mission every few years. However, there are several aspects of urban governance and service delivery requiring the central government to initiate reforms.”

Sahil Gandhi, *Hindustan Times*

“The health sector requires a focus on three main areas: health insurance at the tertiary care level; quality of health infrastructure at the primary level; and the accessibility and quality of medicines available in the country.”

Prachi Singh, *India 2024*

Under the Development Economics vertical, our focus remains on India's key developmental and governance challenges in the fields of health, gender, education, urbanisation, financial inclusion, impact investing, banking reforms, and technology.

DEVELOPMENT ECONOMICS



Gender-responsive governance

Under the Gender Secretariat at Brookings India, an initiative established last year, our researchers worked on the various aspects of inequalities that women face in different spheres and how to overcome these challenges and promote gender-responsive governance. Our work ranged from studies on women's access to health and education to discussions on the aspirations of teenage girls and political participation of women.

Owing to a lack of reliable data, gender discrimination in access to healthcare has not been systematically studied in India. An observational study by Mudit Kapoor, Deepak Agrawal, Shamika Ravi, Ambuj Roy, S V Subramanian, and Randeep Guleria, published by British Medical Journal Open, **used data on clinical appointments from 2,377,028 outpatients from the All India Institute of Medical Sciences to explore missing women patients.** The study has important implications for gender-related health policy, which has so far largely focused on maternal health. The findings suggest the need to strengthen local healthcare infrastructure to benefit younger and older women who face the greatest neglect and discrimination.

There are 80 million teenage girls in India, and a clear understanding of their current realities and aspirations is essential to design effective policies for them. Based on data from the Teen Age Girls (TAG) Survey by the Naandi Foundation, a panel discussion featuring Rohini Mukherjee, Naandi Foundation; Shubha Chakravarty, World Bank; and Farzana Afridi, Indian Statistical Institute looked at aspirations regarding education, career, marriage, and access to menstrual hygiene, among other indicators that also gauged perceptions on safety and the idea of gender equality. Despite universal primary school enrolment in India, a gender gap in enrolment appears and grows during teenage years. In a blog for the Gender Secretariat, Madhulika Khanna, from the University of Georgetown, looked at how the onset of menstruation impacts schooling in India.

Women's representation and political participation has been a key research area for our scholars. In a seminar, Dr. Sonia Bhalotra, Professor of Economics at the University of Essex, presented findings from her research on how constituencies in India that elect women witness higher growth in economic activity, and quotas for women in parliaments across the world lead to a decline in maternal mortality. In another seminar, based on Padma Shri recipient Patricia Mukhim's book *Waiting for an Equal World: Gender in the North East*, the panel discussed gender politics in India's Northeastern states broadly, and the fault lines of matriliney in Meghalaya specifically with a focus on education, health, property rights, developmental spending and the need for representative policy-making.



Shamika Ravi chairs a panel discussion on Gender in the North East.



Access to Healthcare

Ensuring accessible, affordable and efficient healthcare for all is a major challenge for India. The Development Economics vertical at Brookings India, over the past year, conducted research and held various discussions to study these challenges and arrive at recommendations to help tackle them.

Central to health policies in India is improving the overall health outcomes across all demographic groups. The **Brookings India Health Monitor** brings together research and powerful analytics on India's healthcare sector. It provides a pan-India visualisation of the distributions of various health outcomes at a disaggregated level.

We adopt a tailored approach to evaluating existing health policies and focus on different segments of the population. Improving overall maternal, child and adolescent health is a primary area of research at Brookings India, and many sub-themes are explored in this field. Reports and research papers written by experts have also been instrumental in impacting policy in this domain. These include, but are not limited to, National Health Policy, India New Born Action Plan, malnutrition, immunisation, Janani Suraksha Yojana (JSY).

In an India Today op-ed on “*Accelerating Health Reforms*”, Shamika Ravi discussed the potential of the healthcare sector in steering India's future growth and job creation, precision policies targeting states and critical aspects of Ayushman Bharat. Shamika Ravi was part of several discussions that addressed critical issues in public health, including a keynote lecture on the future of healthcare delivery at Rishihood School of Healthcare, a workshop on affordable healthcare organised by ACCESS Health International, and a roundtable on healthcare & big data held at Brookings India in collaboration with the Institute of South Asian Studies (ISAS), National University of Singapore.



Associate Fellow Prachi Singh at the Development Seminar on *Smallpox Eradication: Inclusive histories as meaningful roadmaps for global health.*



Mental health

Mental health is an imminent concern in India with a rising prevalence of diseases like anxiety and depression leading to increasing suicides. Our work explores the various angles of this issue. Additionally, we investigate the affordability and accessibility of antidepressants.

We are also exploring the existing state of geriatric healthcare in India, prevalence and burden of various diseases, including degenerative cognitive and mental diseases such as dementia and Alzheimer's.



Access to medicines

Out-of-pocket health expenditure is a huge burden on households and warrants attention from policymakers. In a forthcoming report by Prachi Singh, David Dam, and Shamika Ravi, the authors explore three key issues: accessibility, affordability and quality of medicines in India. The report analyses the recent Jan Aushadhi Scheme and other government legislations and initiatives in the pharmaceutical sector. The authors also put forth recommendations aimed at addressing issues in quality of medicines, increasing the availability of medicines and structure of price control in our country.



Effects of pollution

According to WHO global air pollution database, out of the 15 most polluted cities in the world, 14 belong to India. A Brookings India Working Paper titled **“Early life exposure to outdoor air pollution: Effect on child health in India”** by Prachi Singh, Sagnik Dey, Sourangsu Chowdhury, and Kunal Bali examines the effect of outdoor air pollution on child health in India. The authors find that exposure to air pollution during the first trimester leads to stunting in children aged below five years. It also takes an overview of the current policies of the government to curb air pollution and the extent of their effectiveness.



Machine learning and health

We are working with the National Health Authority, the apex health policy body, to apply cutting-edge machine learning and artificial intelligence tools to administrative data. This intersection will generate new insights about the existing state of disease burden in India and the state of utilisation of healthcare services by the poor. The results of the research will be used to improve and tailor existing health policies and schemes.

What's next for the health sector?

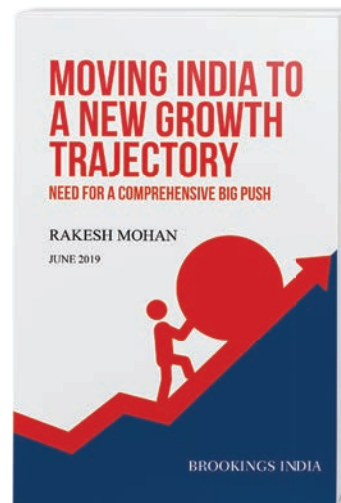
Development Seminars

The Development Seminar Series at Brookings India is a platform for global scholars to present their work to a curated audience of senior government officials, politicians, journalists, academics and policy enthusiasts. The focus of the seminar series is to draw research-based insights to shape and influence policy dialogues in India, through purposeful and pointed discussions. In 2019, we invited academics to share their research in fields such as health, gender, economy and technology.

Brookings India co-hosted a series of seminars with WHO's Centre for Global Health Histories, University of York. The first amongst these was on 'Governance Structures and Private Sector Engagement in Health Sector in India' to discuss the extent of the demand-supply gap in the Indian health sector and the role of the private sector in filling it. Panelists included Dr. Shamika Ravi, Dr. Indu Bhushan, CEO of Ayushman Bharat and the National Health Authority, Government of India; Professor Venkat Raman, Faculty of Management Studies, University of Delhi; and Ms Pompy Sridhar, India Director of MSD for Mothers. The second development seminar of this series was delivered by Prof. Sanjoy Bhattacharya, who shared a riveting account of the history of smallpox eradication, emphasising the lessons it holds for future global health initiatives. In the third seminar of this series, Dr. Sumit Mazumdar discussed how Ayushman Bharat can be a game-changer to strengthen primary health care through greater community-based health worker engagement and establishment of Health and Wellness Centres.



Rakesh Mohan speaks at the report launch.



Economic Growth

If India is to eliminate poverty and achieve upper middle-income status by 2035, it must elevate its growth trajectory to the next level. In a key paper, **“Moving India to a new growth trajectory: Need for a comprehensive big push”**, Dr. Rakesh Mohan, Distinguished Fellow, Brookings India, analysed the key macroeconomic tasks that will take growth back to 8-9%: sustained increase in savings and investment, fiscal consolidation through enhanced tax revenues, and a step-up in infrastructure investment. In a discussion, he highlighted the importance of reviving saving and investment as critical instruments of growth, apart from the need to focus on agricultural growth. He explained that a high growth future would necessitate export and import growth of about 12% and 10-11% respectively; an 8-10% per annum growth in the manufacturing sector complimented by roughly 9% growth in the services.



(L to R): Geeta Goel, India Country Director, Michael and Susan Dell Foundation; Richard Hawkes, Chief Executive, British Asian Trust; Shamika Ravi, Director of Research, Brookings India; & Baijayant Panda, National VP and Spokesperson, BJP.

Tiffin Talks

Brookings India Tiffin Talks are a platform for scholars from across the globe to present their ongoing research to a group of experts at Brookings India. Following a presentation of their research, scholars receive comments and constructive feedback shared in the spirit of open dialogue and critique. The objective of these roundtable seminars is for scholars to have access to various experts in relevant fields, and for the experts to contribute to meaningful and insightful research that can help inform policymaking.

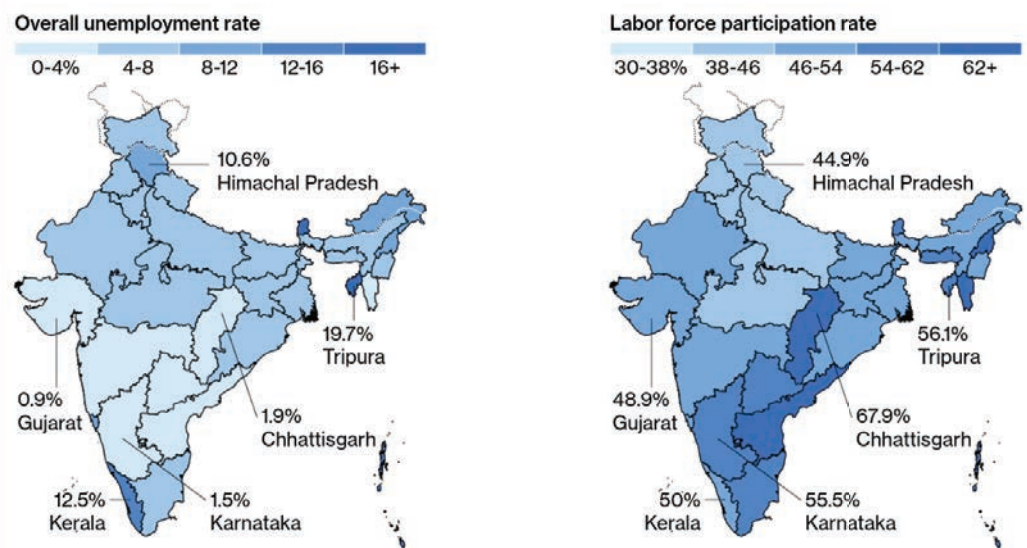
Jobs & Employment

Jobs, or the lack of them, are centre stage in all conversations about India's economic growth. In a widely read piece in Bloomberg, Shamika Ravi analysed data from a government survey of over 150,000 Indian households from April 2015 to December 2015 and drew insights on state-level unemployment rates. Ravi's analysis shows that states that are actively improving their ease of doing business –including Chhattisgarh, Karnataka and Gujarat—recorded the lowest unemployment rates. Another significant takeaway is how concentrated unemployment is among the most educated young Indians. Nearly 35% of Indian youth who possess graduate degrees and above are unemployed, while relatively uneducated young workers (6.2% unemployment) are doing much better.

With technology changing the demand for skills, there remains a need to build high-order cognitive skills, socio-behavioural skills, and adaptability. We held a seminar to discuss the findings of the 2019 World Development Report (WDR) – The Changing Nature of Work. In order to assess India's economic openness, we held a development seminar where Stephen Brien of the Legatum Institute, released the India specific case study of their Global Index of Economic Openness (GIEO).

The Disunited States of India

Joblessness varies greatly depending on state-level policies, though labor participation is low nearly everywhere



BloombergOpinion

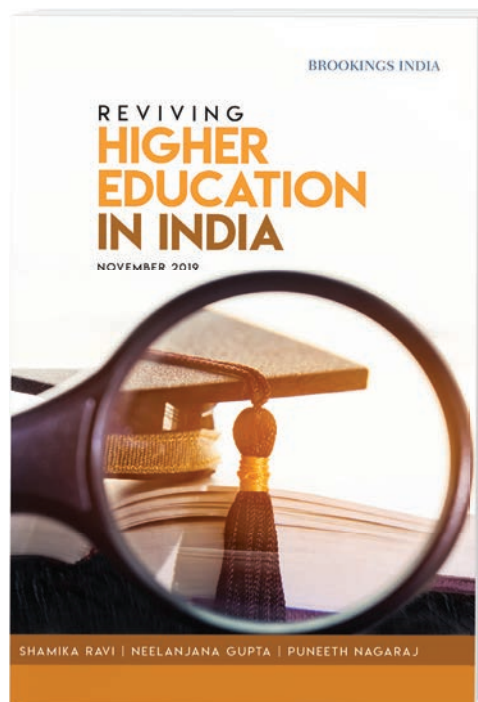


Impact Investing

With the emergence of impact investing as a new asset class in India, investors are not only providing capital and support to social enterprises but also growing to understand the potential of this new form of investing. A report by Shamika Ravi, Emily Gustafsson-Wright, Prerna Sharma, and Izzy Boggild-Jones, “**The Promise of Impact Investing in India**” presented an overview of the state of the size, scale and scope of the sector in India, with specific focus on the health, education and agriculture sectors.

The report was widely read and cited in several media outlets, including The Economic Times, The Financial Express, India Development Review and The Times of India.

Shamika Ravi is part of a **working group on social stock exchange constituted by the finance ministry** that will examine and make recommendations regarding the structures and mechanisms in the sector and facilitate the raising of funds by social enterprises and voluntary organisations.



Reforming Higher Education

India has reached a gross enrolment ratio (GER) of 26.3% in higher education and is on the path to achieve its target of 30% by 2020. The higher education sector has rapidly expanded in the country since 2001, fuelled by rising demand.

Despite the increased access to higher education, challenges remain. Low employability of graduates, poor-quality of teaching, faculty shortages, an over-regulated regime, lack of autonomy and investment in research and innovation plague the sector. The limited assessment and accreditation capacity of government bodies such as NAAC and NBA has also been a significant barrier in linking the performance of an institution with autonomy and funding decisions.

If India is serious about investing in human capital and curbing youth unemployment, it must tackle the problems plaguing the higher education sector. A new Brookings India report on ‘Reviving Higher Education in India’ by Shamika Ravi, Neelanjana Gupta, and Puneeth Nagaraj takes a wider view of the urgent reforms needed. The report takes a closer look at key aspects, including: enrolment, employment and quality; governance and accountability; funding with a focus on efficiency, transparency and affordability; research and innovation; and the regulatory system. As the government evaluates proposals to reform the University Grants Commission and implement the recently proposed Draft New Education Policy 2019, the report also offers concrete recommendations and suggestions that have the potential to shape this critical sector in the next few years.



Property Rights Initiative

Brookings India, along with the Centre for Policy Research, National Council of Applied Economic Research (NCAER), and National Institute of Public Finance Policy (NIPFP), is part of the Consortium for Property Rights funded by a grant from the Omidyar Network India to develop research on the Property Rights Regime and the required policy interventions. The project at Brookings India focuses on developing a multidimensional understanding of property rights, specifically focusing on whether the legal security of property rights are a means of enhancing social mobility and advancing social and economic outcomes, in areas such as health, education, the rights and empowerment of women, access to housing and in tribal communities.



Property Rights & access to housing

As India rapidly urbanises, the demand for housing has accelerated. Urban land markets in India suffer from severe distortions creating an acute shortage of accessible, affordable housing in the cities.

The January 2019 Working Paper **“Too Slow for the Urban March: Litigations and Real Estate Market in Mumbai, India”** by Dr. Sahil Gandhi, Dr. Vaidehi Tandel, Dr. Alexander Tabarrok and Dr. Shamika Ravi explored a unique dataset of the public declarations made under the Real Estate Regulatory Act in Mumbai, to draw insights from the often unresponsive formal housing market. This paper investigates the nature of the relationship between litigation and completion time of real estate projects in Mumbai. The paper also made a strong case to examine the underlying causes of legal disputes and introduce policy reforms to address them.



Accelerating land acquisition to enhance regional connectivity

Enhancing regional connectivity is one of India's top foreign policy priorities. Two-thirds of aid provided by the Indian government (GoI) to neighbouring countries goes to upgrading infrastructure such as road and rail. In 2018-19, the GoI announced approximately INR 7,000 crores for infrastructure projects in neighbouring countries. However, a number of these strategic infrastructure projects run into delays due to issues in land acquisition. This research aims to assess select key strategic infrastructure processes in neighbouring countries with case studies in Nepal, Bhutan, Bangladesh, Myanmar and Sri Lanka to (a) survey the regulatory framework and practical impediments delaying land acquisition, and (b) identify the best practices and recommendations to ensure land acquisition and project implementation in neighbouring countries.



Property Rights & connectivity in tribal India

Post the announcement of India's 'Neighbourhood First' and 'Act East' Policies, there have been several investments, particularly by Japan, in regions India considers strategically important, such as the Northeast and Andaman and Nicobar Islands. Given the tribal nature of these areas, respect for indigenous rights and environmental regulations will have significant implications for India's strategic relations, including security vis-à-vis China, connectivity with Southeast Asia, and management of the Indian Ocean. This research would look at how Japanese financing in particular has had to navigate imminent domain and land acquisition issues, particularly with respect to the Delhi Metro, Delhi-Mumbai Corridor & Mumbai-Ahmedabad High Speed Rail, using the lessons in developing connectivity projects with the vulnerable populations of Northeast India & Andaman and Nicobar Islands.

Selected Publications

Accelerating financial inclusion in India

Shamika Ravi
[Report](#)

The promise of impact investing in India

Shamika Ravi, Emily Gustafsson-Wright, Perna Sharma, and Izzy Boggild-Jones
[Report](#)

Difficult Dialogues: A compendium of contemporary essays on gender inequality in India, compendium

Shamika Ravi
[Report](#)

Metro Monitor 2019: Inclusion remains elusive amid widespread metro growth and rising prosperity

Alan Berube, Isha Shah, Alec Friedhoff, and Chad Shearer
[Report](#)

Moving India to a new growth trajectory: Need for a comprehensive big push

Rakesh Mohan
[Report](#)

Too slow for the urban march: Litigations and real estate market in Mumbai, India

Sahil Gandhi, Vaidehi Tandell, Alex Tabarrok, and Shamika Ravi
[Working Paper](#)

What India's 65 million 'missing women' mean for the state of its democracy

Geetika Dang and Perna Sharma
[Blog](#)

India 2024: Policy priorities for the new government

Shamika Ravi
[Blog](#)

Missing women patients: Gender discrimination in access to healthcare

Mudit Kapoor, Deepak Agrawal, Shamika Ravi, Ambuj Roy, S V Subramanian, and Randeep Guleria
[Blog](#)

Assessing gender in the North East

Geetika Dang
[Blog](#)

Women's Political Participation and Development

Geetika Dang
[Blog](#)

The persistence of memory: The burden of Alzheimer's disease in India

Dweepobotee Brahma
[Blog](#)

The precocious period: Impact of early menarche on schooling in India

Madhulika Khanna
[Blog](#)

Women's Reservation Bill: What can India learn from other countries?

Geetika Dang
[Blog](#)

Performance of the Supreme Court and tenure of Chief Justices of India

Mudit Kapoor and Shamika Ravi
[Blog](#)

Selected Articles and Op-eds

Interview | Why It's Time to Return to Structural Reforms

Shamika Ravi
[Swarajya](#)

Debt isn't Killing India's Farmers

Shamika Ravi
[Bloomberg](#)

The debate over jobs in India is missing the point

Shamika Ravi
[Bloomberg](#)

Accelerating Health Reforms

Shamika Ravi
[Health, India Today](#)

A problem of measurement,

Shamika Ravi
[Indian Express](#)

Our students are not learning. But are our teachers teaching?

Shamika Ravi and Neelanjana Gupta
[Hindustan Times](#)

Economic growth requires protection from expropriation of property by individuals, State,

Mudit Kapoor and Shamika Ravi
[Indian Express](#)

Educational inequity is solvable

Urvashi Sahni
[Apple Podcast](#)

We need many more women in the field of economics

Shamika Ravi
[Indian Express](#)

Feminist engagement with post-colonial developments

[Development Seminar](#)

Engaging private practitioners to improve tuberculosis diagnosis and treatment in urban India

[Development Seminar](#)

Discussion with H.E. Casper Klyngne, Denmark's tech ambassador

[Discussion](#)

Non-performing assets & the slow path to bank reform

[Development Seminar](#)

Succession and exit in family firms

[Development Seminar](#)

World Development Report 2019: The changing nature of work

[Development Seminar](#)

Discussion on healthcare & big data

[Roundtable](#)

Vacant housing in urban India – Extent, cause & policy solutions

[Roundtable](#)

Is housing an intractable problem?

[Development Seminar](#)

Subsidies and agricultural policy

[Development Seminar](#)

World class – A story of adversity, transformation, and success at NYU Langone Health

[Development Seminar](#)

Leapfrogging inequality Remaking education to help young people thrive

[Tiffin Talk](#)

Economic openness across India: the opportunities, challenges and risks

[Discussion](#)

Selected Events

Understanding India's generation capacity – Surplus, for how long?

[Tiffin Talks](#)

Teenage girls in India: Aspirations and reality

[Panel Discussion](#)

Work in progress: Improving youth labour market outcomes in emerging & developing economies

[Development Seminar](#)

Smallpox eradication: Inclusive histories as meaningful roadmaps for global health

[Development Seminar](#)

India 2024: Policy priorities for the new government

[Launch](#)

Moving India to a new growth trajectory

[Launch](#)

The promise of impact investing in India

[Report launch](#)

Waiting for an equal world: Gender in the Northeast

[Discussion](#)

Women's political participation and development

[Development Seminar](#)

The challenge of financing primary health care in India

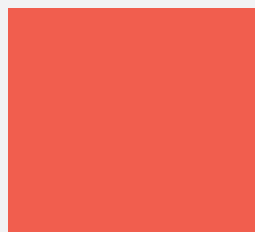
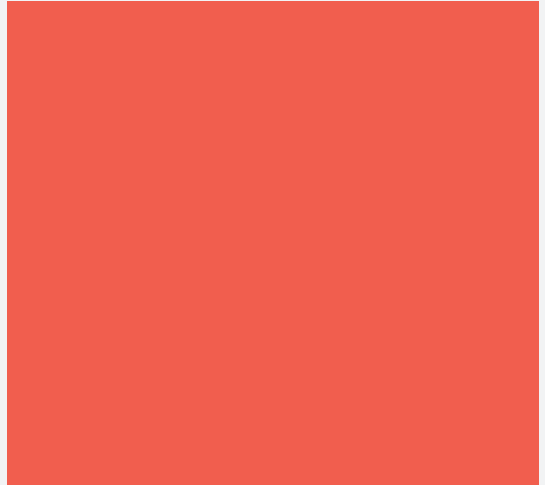
[Development Seminar](#)

Governance structures and private sector engagement in health sector in India

[Discussion](#)

Digital Technologies in Emerging Economies

[Development Seminar](#)



The Foreign Policy & Security Initiative at Brookings India examines, explains, and interprets global challenges that affect India's security and prosperity. Through our scholars' research and analysis, we raise awareness of important issues and shape key debates to enhance Indian interests regionally and globally.

FOREIGN POLICY & SECURITY





India and the neighbourhood

The South Asian neighbourhood has become a new foreign policy priority in recent years, mostly in reaction to China's expanding footprint. In 2014, New Delhi shifted gears with its "Neighbourhood First" policy and focused more on the region than most preceding governments. Our scholars have focused on examining the geostrategic, economic and cultural factors that drive India's changing approach to connectivity in South Asia. Constantino Xavier published an article as part of a Brookings India compendium of policy briefs titled "India 2024: A Neighbourly India."

As India seeks to counter and manage China's growing influence in its own backyard, it is increasingly looking to strengthen extra-regional partnerships with like-minded countries, such as the United States, Japan, Australia and France. Earlier this year, Xavier wrote a Journal Article in January 2019 for the National Bureau of Asian Research, titled "**Converting Convergence into Cooperation: The United States and India in South Asia**", which examines how the U.S. and India, driven by their converging concerns over China's rise in the Indo-Pacific, are presented with an opportunity to deepen their cooperation in South Asia.

Sambandh: Regional Connectivity Initiative

This initiative conducts data-driven research to map India's links with neighbouring countries, including Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan, and Sri Lanka. Driven by a holistic understanding of connectivity, Sambandh surveys India's regional integration across cultural, economic, environmental, political and security indicators. Based on collaborative inputs from scholars and practitioners, this project offers empirical insights and recommendations for policymakers and other stakeholders invested in reconnecting India with South Asia and the Indo-Pacific.

Under Brookings India's Sambandh Initiative, we also undertook research as part of a larger cross-vertical study funded by the Omidyar Network. This research examines how India and neighbouring countries can improve land acquisition for critical infrastructure projects to enhance regional connectivity.



Bay of Bengal and BIMSTEC

The Bay of Bengal is one of the world's least integrated regions, with abysmal levels of trade, connectivity, and cooperation. The deep divide between India and other countries around the bay hinders their efforts to increase their economic and strategic interdependence. Dr. Xavier, through his work, has examined the role of regional institutions such as the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) in South Asia, its rise, and has offered policy recommendations to strengthen the institution.

Constantino Xavier and Riya Sinha co-authored the paper *Regional Connectivity and India's BIMSTEC Policy* for Vivekananda International Foundation's journal *National Security*. The paper reviews how regionalism is making a comeback in the Bay of Bengal and empirically highlights the challenges to connectivity viz. trade, visa policies, air transport and other critical infrastructure.

Democracy

The year 2019 was a decisive one for democracy, with electoral contests taking place across major powers, including India, Israel, Indonesia, Ukraine, Spain, Australia, Canada, Tunisia, Argentina, Sri Lanka, and the European parliament. Given this backdrop, Dhruva Jaishankar authored a blog post for Brookings' *Order from Chaos* blog, titled 'The four "I"s undermining democracy.'

The piece outlines four driving factors – four "I"s – undermining existing structures and practices of democracy, namely identity, inequality, information, and interference. In highlighting these existential hurdles to democracy, Jaishankar prescribes the necessity for countries to exchange ideas and adopt best practices to tackle this growing threat.

Constantino Xavier is currently writing a book on India's regional strategy and the role of democracy in its foreign policy. Based on his doctoral research, this examines Indian responses to different crises in the three neighbouring countries of Nepal, Sri Lanka (Ceylon), and Myanmar (Burma), across three time periods (1950s-60s, 1980s, 2000s). Based on newly declassified materials and interviews with decision-makers, Xavier's research reconstructs policy debates in the government and demonstrates an Indian strategic culture of regional interventionism that balances values and interests.

Indo-Pacific

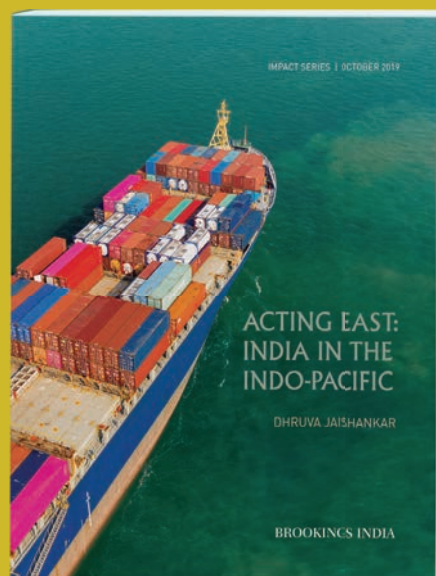
Experts from Brookings India continued their work on underscoring the significance of India's approach to the Indo-Pacific in securing its interests and overcoming challenges in the region. The Indo-Pacific encompasses an array of India's existing and emerging relations and arrangements with countries in the region. This includes India's "Act East" Policy, membership in the Quad, relations with balancing powers like the United States, as well as its approach to its neighbourhood. To address the various facets of India and its approach to the Indo-Pacific, Brookings India scholars published a variety of research outputs.

Dhruva Jaishankar's "**Acting East: India in the Indo-Pacific**" provides an overview of historical antecedents for India's eastward re-engagement, driving factors for India's Act East Policy, as well as the conceptual evolutions of Act East and the Indo-Pacific. The evolution of India's "Act East" policy from its erstwhile "Look East Policy" injected greater urgency and ushered a wider scope in understanding India's engagement in the region, addressing concerns of China's rise and assertiveness as well as inadequacies of the security order. In doing so, it also highlights India's growing capabilities

and increasing priorities in securing the Indian Ocean, integrating with Southeast Asia, maintaining and building strategic relations with balancing powers, as well as managing relations with China. Jaishankar, in his paper, identifies priority areas for future Indian policy towards the region in an attempt to preserve a balance of power in the Indo-Pacific. These are in the areas of naval acquisitions, regional trade, overseas project implementation, defense exports, air connectivity, and investment.

Brookings India launched Jaishankar's paper, which followed a panel discussion with Ambassador Sujan Chinoy (DG, IDSA), Lt. Gen. SL Narasimhan (DG, CCCS, MEA) and Ritika Passi (Fellow, ORF), moderated by Dr. Xavier. In attendance were officials from the Ministry of External Affairs and various diplomatic missions, retired Indian officials including several former ambassadors, scholars from India's leading think tanks and universities, as well as members of the media.

Jaishankar also authored a chapter covering maritime connectivity and security in the Indo-Pacific in a book titled, *Purbasa East Meets East: Synergising the North-East and Eastern India with the Indo-Pacific* (Kalinga India Foundation) edited by Lalit Mansingh, Anup K. Mudgal, and Udai Bhanu Singh. In his chapter, Jaishankar outlines the historical significance of the Indian Ocean to India in terms of trade, energy flows, and natural resources. Given India's recent pivot to the Indian Ocean as a priority in strategic objectives, Jaishankar argues that a lot more needs to be done if India wishes to play a bigger role in the Indian Ocean. This would include revisiting its naval budget and increasing port capacity.



India-US relations

India-U.S. relations continued to be a focal point of analysis by Brookings India scholars. Dhruva Jaishankar's journal article in Seminar titled **"The new India policy"** sheds light on the change in U.S. policy towards India under the Trump administration, delineating various points of convergence between the two countries. Differences over trade, immigration, Russia and Iran aside, the adoption of the Indo-Pacific framework by both countries paved the way for stronger ties. This comprised the signing of a secure communications agreement (COMCASA) and the resurrection of Quad. In addition, the first 2+2 dialogue between the U.S. and India took place in late 2018 involving the ministers for defence and foreign affairs. Further, the U.S. Commerce Department raised India to Strategic Trade Authorization -1 status, giving India an export control status on par with NATO allies. While India's management of the current administration was not seamless, Jaishankar argues that New Delhi found itself better placed in comparison to other countries, including U.S. allies such as Israel, Canada, Saudi Arabia and Japan. At the same time, however, issues of trade and Russia would serve as long-standing obstacles in India-U.S. relations, transcending Trump's presidency.

In addition, Jaishankar authored an article in East Asia Forum outlining four challenges to relations between New Delhi and Washington. Relations between both countries have steadily improved in the areas of trade, job creation by American multinationals, defence equipment exports, cooperation on counter-terrorism and maritime security in the Indian Ocean, as well as shared concerns about China's Belt and Road Initiative. American ties with India have remained on a positive track, however there remain four primary hurdles to the strategic relationship. Jaishankar argues concerns over trade, India's relations with Russia, U.S. hostility towards Iran and differences between both countries in their policy towards Afghanistan would require redressal if relations are to continue on an upward trajectory.

(From L to R): Amb. Shivshankar Menon, Distinguished Fellow, Brookings India and former National Security Advisor (2010-2014); Ananth Krishnan, Visiting Fellow, Foreign Policy, Brookings India; and Dhruva Jaishankar, Fellow, Foreign Policy Studies, Brookings India.



China

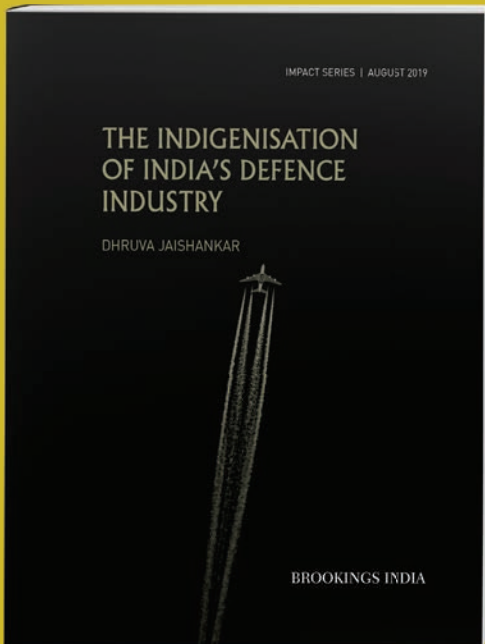
A significant concern that informs India's approach to the Indo-Pacific is balancing China and its rise. Brookings India scholars viewed India's approach to China from a variety of perspectives. In his working paper, titled **"Following the Money: China Inc's Growing Stake in India-China Relations"**, Visiting Fellow Ananth Krishnan presents a comprehensive outline of the surge in Chinese investment into India since 2014 and its implications on the bilateral relationship. We also hosted a Foreign Policy & Security Tiffin Talk where Krishnan presented his research outlining an assessment of Chinese investment in India and its implications for India's diplomacy, trade strategy, and security.

In addition to this paper, through a series of opinion pieces across various media platforms, Krishnan analysed China in an assortment of areas, including domestic politics, internal developments, and its engagement with India and other global players.

Dr. Anit Mukherjee, Non-Resident Fellow, co-edited a book titled 'India-China Maritime Competition' examining the concept of the "security dilemma" in India-China maritime competition. This book investigates the rivalry playing out in different sub-regions of the Indian Ocean and the responses of other powers, notably the United States and prominent Southeast Asian states.

In his paper titled "Worse China-US Relations: an Indian View" published by China International Strategy Review, Ambassador Shivshankar Menon examined causes for worsening relations between China and the U.S., and outlined its consequences for other countries in the Asia-Pacific, particularly India.

Defence



An indigenous defence industry is a vital objective for India given its security environment and strategic objectives. India has a large and growing defence budget and a long history of defence industrial production. However, the country remains heavily reliant on defence imports, particularly for major platforms, while its own exports are extremely meagre. In an Impact Paper, Dhruva Jaishankar examined the dilemmas India faces in trying to reform its defence industry, the major stakeholders involved and the efforts that need to be made to ensure predictable long-term requirements and capital investments. The report was cited in Hindustan Times, Economic Times and India Today, among other widely read publications.

Civilian control over the military is widely hailed as one of the major successes of India's democracy. As an exception, especially among post-colonial states, this control is often celebrated. However, at what cost? In his newly published book, *The Absent Dialogue: Politicians, Bureaucrats, and the Military in India*, Dr. Anit Mukherjee argues that the nature of civil-military relations in India has hampered its military effectiveness. To support this claim, Mukherjee closely examines the variables most closely associated with military effectiveness, namely weapons procurement, operational jointness, officer education, promotion policies, and defence planning. Further, Mukherjee shows how India's pattern of civil-military relations, best characterised as an absent dialogue, adversely affects each of these processes.

In addition, Brookings India hosted a research seminar in February 2019, as part of its Tiffin Talk Series, where Mukherjee discussed his work on Professional Military Education (PME) in India and the status of the National Defence University. The scope of civilian intervention in PME formed an essential part of the discussion. This was attended by officials from the Indian armed forces, Ministry of External Affairs, National Security Council Secretariat, and scholars and experts from leading think tanks and universities.

In order to improve civil-military relations in this domain (education), training of military officials needs to shift towards academia rather than being career military officers.

Anit Mukherjee, Non-Resident Fellow, Brookings India

European Union Initiative

Brookings India's European Union (E.U.) Initiative conducts research on the converging public policies of the world's two largest democracies. It also promotes exchanges and dialogues between scholars and policy-makers in New Delhi, Brussels and across E.U. and Indian states. The Initiative focuses on how the E.U. and India can address common political, economic and geostrategic challenges under the rule of law, multilateralism and other shared values.



(From L to R): Dr. Constantino Xavier, Fellow, Brookings India; Dr. Shamika Ravi, Director of Research, Brookings India; Christian Leffler, Deputy Secretary-General, Economic and Global Issues, European External Action Service; Amb. Shyam Saran, Former Foreign Secretary & Senior Fellow, CPR; Friederike Tschampa, First Counsellor- Head of Section Political Affairs, Delegation of the European Union to India; & G. Balasubramanian, Joint Secretary Europe West, MEA.



Tiffin Talk Series

This series of closed-door roundtable discussions aims to bridge New Delhi's scholar-practitioner divide and increase communication between researchers and policymakers working on Indian foreign policy and security affairs. The manner in which it fosters dialogue between scholars and practitioners is two-fold. First, it serves as a platform for Indian and international scholars to present their evidence-based research, and receive feedback from peers and practitioners. Second, this series offers government officials, decision-makers and other practitioners a venue to access quality research on issues of critical importance to India's external engagements. In the last year, we conducted closed-door roundtable discussions on a range of issues pertinent to India's foreign and security policy, including India's role in peacekeeping, reforms in India's defence industry and professional military education, and Chinese investments and its implications for India's diplomacy, trade strategy, and security.



Back to the Future panel discussion on the IPKF in Sri Lanka.

Back to the Future Series



(From L to R) Dr. Anit Mukherjee, Non-Resident Fellow, Brookings India; Air Marshal Narayan Menon, Air Officer Commanding (AOC), Jammu and Kashmir; Indrani Bagchi, Diplomatic Correspondent, The Economic Times (1999); Gen. V.P. Malik, Chief of Army Staff, Indian Army (1997-2000); Shakti Sinha, Private Secretary to Prime Minister Atal Bihari Vajpayee (1996-1999); Lt. Gen. Mohinder Puri, Major General, GOC, 8 Mountain Division (1999).

Our Back to the Future series of panel discussions mark the anniversary and revisit a historical event in India's foreign and security policy with the participation of former decision-makers involved. These discussions contribute to the emerging field of oral history in Indian diplomatic and strategic studies with retired officials sharing their experiences and insights. This series is also future-oriented on lessons learned and how India can improve policy-making. One of the discussions included revisiting India's peacekeeping force in Sri Lanka during its civil war with discussants Lt. Gen. A S Kalkat, Army Commander, Commander, Indian Peacekeeping Force, Sri Lanka (1987-90); Amb. Lakhan Lal Mehrotra, High Commissioner of India to Sri Lanka (1989-90); Mr. Kalyan K Mitra, Research & Analysis Wing officer at India's High Commission in Sri Lanka (1988-91); Amb. Shivshankar Menon, Distinguished Fellow, Brookings India and former National Security Advisor and Amb. Teresita C. Schaffer, US Deputy Assistant Secretary of State for South Asia (1989-92). Another panel discussion, as part of this series, marked the 20th year anniversary of the Kargil War exploring the political, military, and diplomatic challenges of the war and the lessons it holds for India's future strategy.

Selected Publications

The indigenisation of India's defence industry

Dhruva Jaishankar
[Report](#)

Acting East: India in the Indo-Pacific

Dhruva Jaishankar
[Report](#)

Survey of India's Strategic Community

Dhruva Jaishankar
[Report](#)

A Global India, India 2024: Policy priorities for the new government

Dhruva Jaishankar
[Policy Brief](#)

A Neighbourly India, India 2024: Policy priorities for the new government

Constantino Xavier
[Policy Brief](#)

Deepening democracy through diversity: Improving cooperation with India and non-Western democracies

Dhruva Jaishankar
[Policy Brief](#)

A Secure India, India 2024: Policy priorities for the new government

Shivshankar Menon
[Policy Brief](#)

An Interdependent China and India, India 2024: Policy priorities for the new government

Ananth Krishnan
[Policy Brief](#)

From the iPhone to Huawei: The new geopolitics of technology

Dhruva Jaishankar
[Blog](#)

The four "I"s undermining democracy

Dhruva Jaishankar
[Blog](#)

Selected Articles and Op-eds

As China courts central and eastern Europe, whither India?

Dhruva Jaishankar & Yamini Sharma
[Hindustan Times](#)

Finally, a summit where Modi gov't made no meaningless, empty promises

Constantino Xavier
[The Print](#)

Soft coup' leaves India with hard choices

Constantino Xavier
[Hindustan Times](#)

The case for pushing back against China

Dhruva Jaishankar
[War on the Rocks](#)

Does ASEAN matter?

Dhruva Jaishankar
[Asia Society Policy Institute](#)

New Delhi can't hope to do a Male in Colombo

Constantino Xavier
[Hindustan Times](#)

India's interest in a democratic Indo-Pacific

Constantino Xavier
[National Endowment for Democracy](#)

The real significance of the Quad

Dhruva Jaishankar
[Australian Strategic Policy Institute](#)

Four reasons to manage China's rise

Dhruva Jaishankar
[Lowy Institute](#)

Worse China-US Relations: an Indian View

Shivshankar Menon
[China International Strategy Review](#)

Gap between India and China looks wider if we compare our states to their provinces

Ananth Krishnan
[The Print](#)

The United States, India, and the Future of the Indo-Pacific Strategy

Walter C. Ladwig III and Anit Mukherjee

[The National Bureau of Asian Research](#)

Modi's Middle Way

Constantino Xavier
[The ASAN Forum](#)

Converting Convergence into Cooperation: The United States and India in South Asia

Constantino Xavier
[The National Bureau of Asian Research](#)

Selected Events

Discussion with Dr. Tan-Sun Chen, Former Minister of Foreign Affairs, Taiwan

[Discussion](#)

Discussion with Goran Persson, Former Prime Minister of Sweden

[Discussion](#)

Briefing by Japanese Ambassador to India, Kenji Hiramatsu

[Public Event](#)

Discussion with Danish Tech Ambassador, H.E. Casper Klynge

[Discussion](#)

From Korea to the Congo: Nehru's India and UN Peacekeeping (1945-1965)

[Tiffin Talk](#)

EuroTragedy: A Drama in Nine Acts

[Seminar](#)

Reforming Professional Military Education: The (Non) Debate over India's National Defence University

[Tiffin Talk](#)

Emerging Voices Reception with Ron Malka, Ambassador of Israel to India

[Emerging Voices](#)

The Strategic and Economic Dimensions of the Indo-Pacific

[Tiffin Talk](#)

Five Dilemmas Constraining India's Defence Industrial Indigenisation

[Tiffin Talk](#)

Following the Money: China Inc's Growing Stake in India-China Relations

[Tiffin Talk](#)

Emerging Voices Reception with Ambassador of Thailand

[Emerging Voices](#)

Plutonium, Nuclear Energy, and India's Three-Stage Thorium Programme

[Tiffin Talk](#)

The Future of India's Lost Frontier: India, Pakistan, and the Hindu Kush

[Seminar](#)

Brexit and the Future of Europe

[Panel Discussion](#)

India and the Indo-Pacific at the East Asia Summit

[Launch & Panel Discussion](#)



The Natural Resources, Energy & Sustainability vertical at Brookings India is dedicated to conducting comprehensive research on India's energy potential and requirements. Our work centers on the study of coal, natural gas, minerals, power sector, renewable energy, electric vehicles, and climate change in India. Our objective is to advance impactful research that helps understand India's energy needs while being mindful of the environmental concerns around it.

NATURAL RESOURCES, ENERGY & SUSTAINABILITY



Electricity Distribution Sector in India

While many now consider shortfalls in electricity capacity a thing of the past, the distribution sector, and in particular the Distribution Companies (Discoms) are considered the weakest link for electricity. Brookings India's multi-year large-scale distribution sector study is focused on Indian Discoms covering all their integrated and interlinked aspects, such as economic viability, operational/technical performance, and the social contract. In addition to a national overview, our experts are examining a handful of states with a greater focus, to assess both their past and projected trends.

This study has a number of components, including aggregation of public data on tariffs and volumes as per the respective state filings. In addition to building these databases, a number of interventions will be examined, such as government schemes as well as technology or policy shifts that may make the future very different than the past. Examples include the rise of renewable power, 100% electrification, and retail competition.

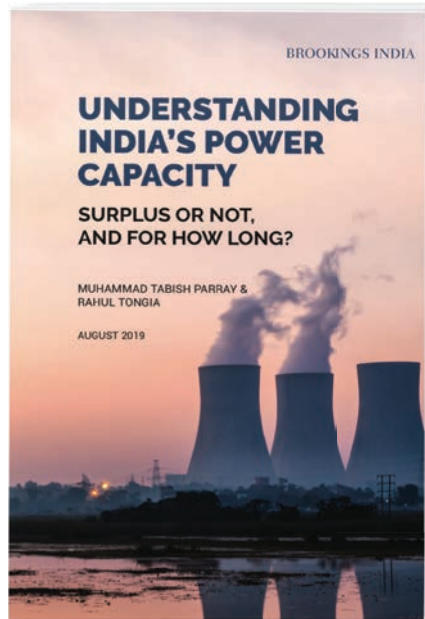
The economic and operational aspects are inherently linked – does adding customers (or load) make the finances better or worse? The reality is that this depends on the cost of delivering supply as well as the marginal revenues from any consumer. Subsidies further complicate the picture, as do issues of time-of-day consumption. Our studies aim to unpack the nuances and trade-offs in electricity distribution to enable sustainability spanning all aspects – economics, environment, and equity.

Power sector: Governance and regulation

Government regulations, notifications, policies, and legislation all guide the power sector, and our work has examined many existing as well as upcoming rules. The Electricity Act 2003 is the central act governing the power sector structure and policies in India and any major amendments to it have traditionally been a once-in-a-decade exhaustive exercise. There are draft amendments, which might even lead to a new Act, that offer an opportunity to recognise technology and stakeholder changes over time. Our scholars analysed the 2018 amendments which focused on power distribution companies as the main challenge in the current state of the Indian power sector. Rahul Tongia and Geetika Gupta took a closer look at the major thrust areas proposed by the draft amendments, namely, (a) carriage and content separation, (b) quality supply and procurement of power, (c) subsidies and pricing, (d) oversight and regulation, and (e) innovation and transformation. They also identified potential concerns that remain unaddressed and offered suggestions on how to address some of these issues.



For the first time, India has sufficient or even surplus electricity generation capacity. But does this mean we have sufficient buffer for years to come?



India has an installed capacity of around 360 GW and a maximum peak demand of roughly 180 GW. Thus, the country seems vastly surplus in installed generation capacity. This study by Muhammad Tabish Parray and Rahul Tongia looks at the capacity surplus in India in detail. The capacity surplus is first divided into several categories, based on various factors spanning technical, fuel-related, and demand-related. Of the total outages for firm capacity of about 90 GW, around 25-35 GW can be recovered by ensuring fuel supply and with the increase of demand. With a growth of nearly 10 GW in peak demand anticipated every year, the current capacity surplus as well as the planned installation of non-coal firm capacity might not be enough to meet the peak demand as early as 2021 or 2022. This also heavily depends on the ability of coal power plants to meet upcoming emission norms, which may require a combination of retirement of old plants as well as downtime to retrofit most plants across the country.

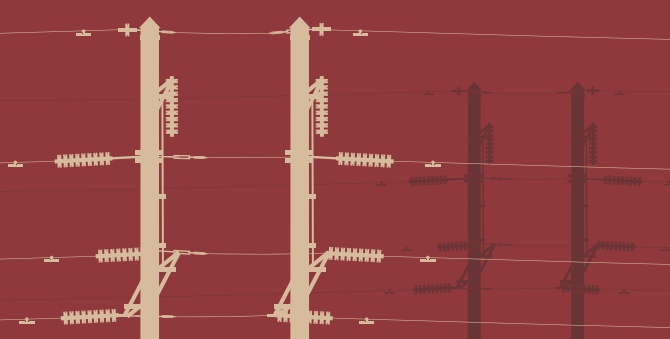
Coal: Cleaning it up instead of wishing it away

Coal dominates India's energy requirements, more so for the electricity sector where it provides approximately three quarters of supply. Ample domestic reserves combined with relatively low prices have helped the growth of coal over the years. However, coal's negative social and environmental impacts have not only increased regulations, if not restrictions on coal usage, Indian policy now also has a strong thrust towards renewable energy. On the other hand, most renewable energy today (wind and solar) is intermittent and variable, and competes with coal only for part of the demand.

For India, managing the balance between development based on inexpensive and secure energy supplies versus moving towards more sustainable energy sources is the key challenge that affects a range of stakeholders. In addition to the economics, there are a range of legacy and political economy aspects that have led coal to play a central role in not just energy supply but the railways and local development in many regions across India.

Brookings India commenced a multi-year research project in FY'15-16 on the Indian coal sector. This holistic analysis includes a number of domain-focused studies such as on supply-demand, transportation, renewables versus coal, emissions and pollution, etc., many of which have already been published. In early 2020, we plan to release the book *The Future of Coal in India*, edited by Rahul Tongia and Anurag Sehgal, with Puneet Kamboj, that draws from over a dozen experts to untangle the Indian coal ecosystem through evidence-based research.





Electricity and Coal Scenario Studies

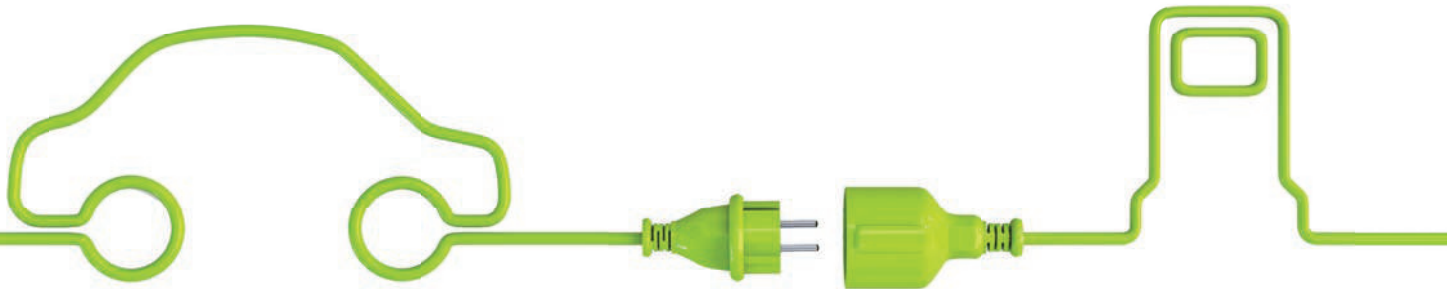
A less emphasised aspect of the stranded asset crisis in the power sector is the high coal capacity addition relative to electricity demand growth, which has been consistently lower than recent official forecasts. Our report on bottom up electricity demand focuses on the macro and micro drivers of sectoral growth, including captive demand and electrification of new demands in transport, cooking, etc. The results indicate an overall slower growth of electricity demand through 2030 compared to 2000-15, with many sub-sectoral insights where policy must focus such as cooling, reliable supply to industry, irrigation water-use efficiency, solarisation, etc. We show that newly electrified homes are socially vital but have limited impact on demand in the near term.

Mohd. Sahil Ali and Rahul Tongia released a companion report to the demand study on the future of electricity supply to help understand the prospects for coal-based generation and coal demand under various scenarios of electricity demand, non-fossil penetration, technological uptake, and domestic coal quality. Even under very high Renewable Energy growth scenarios, we do not project “peak coal” through 2030, but we do find a marked slowdown from the past demand for coal-based generation and physical coal demand. The authors also find a possible growth in imported coal due to issues with domestic coal quality. The report also provides prescriptions on how the imported coal growth trend can be arrested, and possibly reversed.

Renewable Energy

Renewable Energy (RE) represents the largest growing segment of electricity, not just in India but worldwide. India is an RE leader with some of the most ambitious targets for growing RE. By 2022, the target is to quadruple RE capacity (to 175 GW), and there are indications of 450 GW of RE planned by around 2030. Such ambitious plans depend not just on the economics and financing of such energy, but the ability to absorb such RE into the grid.

A Policy Brief by Rahul Tongia showed that RE “versus” coal is a false framing, as both will be required, but RE will face increasing costs as its share increases, and it can no longer simply compete at not just avoiding new coal but existing coal plants at the margin. Time-of-day issues will become paramount as will locational issues. Most RE potential is in South and West India, while coal is mostly in Eastern or Central India. In another study, Rahul Tongia, Santosh Harish, and Rahul Walawalkar examined the state-of-the-art in grid integration studies and found prior studies had limitations but were also correct in their larger finding that any RE growth will benefit from more nimble grid operations, across larger balancing areas. Ongoing studies on RE focus on the larger transition, not just from a technical grid perspective, but one that factors in contractual trade-offs and other nuances.



Electricity and Mobility

There are a number of government plans for electric vehicles but few studies have examined their impact on the electricity grid. Complementary to the electricity demand study, our scholars conducted a deep-dive into the key factors and uncertainties in the present and future of urban passenger mobility demand and choices, leading to the electricity demand from EVs and their impact on the grid ecosystem. They found that even in the most ambitious scenario of 100% EV sales by 2030 (excluding freight and selected inter-city buses), the quantum of electricity demanded will be relatively small, a few percent of projected load. However, even with a 33% sales penetration by 2030, the implications for the grid in terms of EVs peak-coincident demand will be highly significant, and requires planning up front.

We are also undertaking further studies on the larger mobility space to examine freight and other transportation. One of the challenges is the difference in impacts across not just the triad of energy, money, and carbon, but also a range of other impacts on local air pollution, congestion, market structure, etc.

Electricity and Carbon Tracker

The Brookings India Electricity and Carbon Tracker (carbontracker.in) is a near-real-time tracker that shows electricity generated by source (for example, renewable, thermal, etc.) at a national-level with corresponding total electricity-based CO₂ emissions with a five-minute resolution.

Until now, national electricity generation data was only available on a daily basis, as energy (kWh). This tracker focuses on capacity (kW) over time, which makes it possible to draw patterns and inferences about electricity generation in the country for planning and policy purposes. For example, it helps us see carbon intensity of the grid at a granular time-varying level, thus identifying time instances when the grid is the “greenest”, or the relative contribution of (and thus value of) different types of generators at different times. It further helps visualise the contribution to electricity generation by various generation sources over time and at any particular instance of time.

A companion Discussion Note by Rahul Tongia, Muhammad Tabish Parray, and Utkarsh Dalal shows findings on relative energy share contributions and correlations, ramping, etc. The good news is that India has managed its RE growth by flexible operations of coal and hydro. Unfortunately, this will not last given the enormous targets for growing RE, by a factor of perhaps 6-7 in a dozen years.



(From L to R): Rahul Tongia, Fellow, Brookings India; Vijay Menghani, Chief Engineer (RE Monitoring and Grid Integration), CEA; Ghanshyam Prasad, Chief Engineer (OM, R&R), Ministry of Power; and Thomas Spencer, Fellow, TERI.

Climate Action and Sustainable Development

India has committed to leadership on climate issues, but has stressed the development-mitigation trade-off and urged its rightful space for economic growth in its climate commitments. Under a new grant from the Oak Foundation, we aim to study how this trade-off plays out in policymaking and suggest pathways under which objectives, policies, and implementation can be synchronised at various levels. Lessons from an already burgeoning body of research in this space indicate that India stands to gain from a clean energy transition via its co-benefits, but ground realities convey a mixed picture. While funding this transition stands out as a key bottleneck, the interlinked system of incentives and disincentives warrant a closer look. Our analyses will deconstruct and disentangle the major elements of this system, and bridge the gap in translating evidence-based research to actionable policy. Our overarching objective is to demonstrate a viable case for India's climate leadership through ideas, analyses, and narratives that push the boundaries of knowledge.



Smart Meters and Smart Grids

Rahul Tongia is the Founding Advisor for the PPP body, India Smart Grid Forum, and also helped set up the Government of India's Smart Grid Task Force, where he was the Technical Advisor. Our scholars have been involved in a number of efforts on smart grids and smart meters, including on how to handle power sector data.

The government has plans to switch all consumers to smart meters in a few years – but more than a technology choice, there are policy and regulatory issues inter-twined, including on pricing, control, and data. Ongoing work examines the intersection of technology, regulation, innovation, and security for the smart grid. Issues of time of day electricity pricing are a small subset of the possibilities as well as challenges. How will different consumers be affected, and how can or might they respond? This issue becomes critical in the coming years as rooftop solar energy grows and we see an increase in the number of electric vehicles.



Dr. Rahul Tongia moderates a panel discussion.

India's Natural Gas Sector: A roadmap

Last year, Brookings India initiated a new study that aims to analyse the potential for natural gas in India and prepare a policy roadmap for the government to implement measures that will increase consumption in the short, medium, and long-term. Globally, natural gas is seen as a bridge to transition from fossil fuels-based consumption to a renewable energy-based economy. In India, however, natural gas consumption has been declining due to a variety of reasons including availability, pricing, infrastructure, and fiscal issues.

So far, disparate groups in the sector have presented their views to different stratas within the government on policy changes necessary for the sector. The Brookings India study by Vikram Singh Mehta, Chairman and Senior Fellow, and Swati Dsouza, Consultant brings together stakeholders across the supply chain in the sector to increase gas consumption. Over the course of FY18-19, the project sought inputs from players across the gas supply chain in the form of roundtables and chapter contributions. We held over 20 roundtables where authors presented their analysis to a diverse group of experts, including industry players, government agencies, and academics to gain feedback and incorporate their thoughts.

The final outcome of the study will be a book, edited by Vikram Singh Mehta, planned for a 2020 release. We expect the book to have a wide-ranging impact — it will become a vital handbook for those who want to understand the natural gas sector in India; provide concrete steps to policymakers to resolve prevalent issues; and offer a perspective on the forthcoming transitions that will impact the sector.



Consultant Swati Dsouza at a Brookings India roundtable on Natural Gas.

Non-Fuel Minerals and Mining in India



Dr. Rajesh Chadha, Programme Director, Natural Resources, at a Development Seminar.

Brookings India has expanded its mandate of research under the Energy, Natural Resources and Sustainability vertical by starting a new work program focusing on Non-Fuel Minerals and Mining in India (NFM&MIN) to impact government policies that enable sustainable growth of the non-fuel mining sector in alignment with the welfare of affected communities.

The National Mineral Policy (2019) states that minerals will be in high demand given the projected growth of urbanisation and manufacturing sectors. The government will facilitate and regulate exploration and mining activities. The policy recommends incentivising private investments in exploration and simplifying the commencement of mining operations by granting pre-embedded statutory clearances.

The research agenda is conceptualised under three broad questions:

A. What is the status of the efficiency of mining activities? The topics under positive economics realm include exploration, allocation of mines, extraction, foreign direct investment, regulation and governance, royalties and taxation, logistics and operations, and public-private partnerships.

B. What are the international good practices? Experiences of countries including Australia, Canada, Brazil, Chile, Mexico, South Africa, and China will be studied with a view to imbibe some good practices in alignment with domestic conditions and constraints.

C. What are the externalities and what ought to be done? The topics under normative economics realm include environment, local communities, cooperative mining, mine closures, and Sustainable Development Goals.

The new program will have multiple activities including brainstorming sessions, lectures and seminars, focus group discussions, and national and international visits. The focus will be on discussions with stakeholders including mining companies, affected communities, governments, research think tanks, international organisations, and NGOs. The outputs of the program shall include policy briefs, case studies, papers, and a comprehensive report.



Selected Publications

Coal in India: Adjusting to Transition

Rahul Tongia & Samantha Gross

[Report](#)

The future of Indian electricity supply: Scenarios of coal use by 2030

Mohd. Sahil Ali & Rahul Tongia

[Report](#)

Will breaking up Coal India Limited lead to efficiency and competition?

Rahul Tongia & Anurag Sehgal

[Report](#)

Understanding India's Power Capacity: Surplus or not, and for how long?

Mohd. Tabish Parray & Rahul Tongia

[Report](#)

Insights from the Brookings India Electricity and Carbon Tracker

Rahul Tongia, Mohd. Tabish Parray, & Utkarsh Dalal

[Discussion Note](#)

Amendments to the Electricity Act 2003: A summary, analysis, and public comments

Rahul Tongia & Geetika Gupta

[Discussion Note](#)

Working to turn ambition into reality: The politics and economics of India's turn to renewable power

Rahul Tongia & Samantha Gross

[Paper](#)

Energy sector data: Suggestions for improving data quality and usability

Mohd. Sahil Ali & Rahul Tongia

[Discussion Note](#)

RE "versus" coal in India – A false framing as both have a role to play

Rahul Tongia

[Policy Brief](#)

The future of Indian electricity demand

Mohd. Sahil Ali

[Report](#)

Integrating Renewable Energy Into India's Grid—Harder Than It Looks

Rahul Tongia, Santosh Harish, & Rahul Walawalkar

[Impact Paper](#)

Selected Articles and Op-eds

100% electrification: Assessing ground reality

Swati Dsouza

[Infraline Plus Magazine](#)

Some steps towards escalating the ambition on Universal Electricity Access

Mohd. Sahil Ali

[Infraline Plus Magazine](#)

India needs to change the thermal power story to survival of the fittest, not luckiest

Mohd. Sahil Ali

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Can natural gas be a catalyst to build a lower-carbon world?

Swati Dsouza

[Infraline Plus Magazine](#)

We need a quality revolution in public policy decision-making

Rahul Tongia & Dhruva Jaishankar

[Live Mint](#)

What can new govt do to energise India?

Vikram Singh Mehta

[Financial Express](#)

India's Biggest Challenge: The Future of Farming

Rahul Tongia

[The India Forum](#)

Selected Events

Towards more globally competitive gas markets

[Development Seminar](#)

Coal India Ltd.'s Journey and Coal's Future, with Partha Sarathi Bhattacharyya, author of "When Coal Turned Gold"

[Panel Discussion](#)

Renewable Energy and India's energy transition: A status check

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Sustainable aviation fuel

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Discoms' abilities to serve residential consumers

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TRANSLATING RESEARCH INTO IMPACT

At Brookings India, we place a strong emphasis on disseminating our research, ensuring that our findings reach the right people at the right time and in the right format. We devise communication strategies to reach our diverse stakeholders, including policymakers, academics, industry insiders, media and the public.



We publish long-form reports, Impact Papers, Policy Briefs and Discussion Notes that centre original research, offer context and background and give concrete recommendations for action on a variety of policy issues. The reports are peer reviewed, well cited and freely available to everyone. In addition to this, scholars at Brookings India frequently write for a variety of notable national and international publications and participate in public debates.

Public engagements and events are significant for a policy think tank. Our events bring together academics, politicians, bureaucrats, corporates, diplomats, among others for candid discussions.

In the last year, we have effectively tapped the power of the digital medium to amplify our research findings. Data visualisations, interactive infographics, monthly newsletters and emailers, video explainers have all contributed to our growing audience. In 2019, Brookings India has grown its social media footprint, and has organically built an engaged audience across platforms such as Twitter, Facebook, YouTube and LinkedIn.

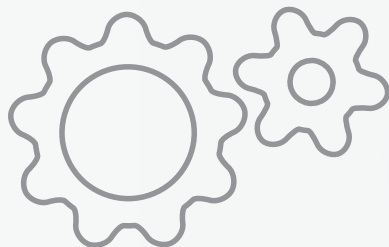
Creating impact and influencing policy is the cornerstone of all communication and outreach activities, and the primary goal that we aim to achieve.

Scholars at Brookings India have been cited over 2000 times in academic journals and papers as well as media articles. In order to make their work more accessible, from 2019 onward, all our reports have an ISBN.

Over 2 lakh page views and minutes spent reading our scholars' work on the Brookings India website.



25
Papers, Policy Briefs,
Discussion Notes
and Reports



13,446
Newsletter
Subscribers

Our scholars regularly contribute to leading media outlets including Bloomberg, The Economist, Foreign Affairs, The Financial Times, Mint, The Economic Times, The Indian Express, The Hindu, Hindustan Times, and several others.



176
External Articles
and Op-Eds

OUTREACH AND IMPACT



66 Events
200+ Speakers
3,000+ Attendees

Apart from public events, we also hold closed-door roundtables, networking events and private briefings. Brookings India provides a platform for young scholars to present their ongoing research at our Tiffin Talks.



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Page views and
minutes spent
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Growth in
Followers



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Subscribers



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Increase in
Subscribers

With millions of members, **LinkedIn** is a professional network allowing us to build credibility, create a meaningful network, and glean insider expertise from established experts in the industry. Brookings India made its debut on the platform a few months ago and quickly garnered over 2000 followers.



MENTORING FUTURE POLICY-MAKERS

Researchers at Brookings India work closely with students from diverse backgrounds to enable them to get first hand insights into the process of policymaking. Our scholars continued this trend over the last year and interacted with students not just within the confines of the institution but all over the country.

We brought together all current and former interns for our annual **'Back to the Fold'** event. This event aims to create a platform for former interns to interact with our team, exchange ideas, and offer constructive criticism to help guide them through the field of policy making.

We held a session with the students from the Economic Society of SRCC Delhi, who presented policy recommendations on 'Inclusive growth in India' as part of their annual economic summit. **Shamika Ravi, Prachi Singh and Prerna Sharma** judged the session and provided valuable inputs for the students. **Dweepobotee Brahma** also judged a paper presentation contest at the annual Economics Society Fest of St. Stephens College, DU.





Current and former interns at the annual Back to the Fold event interacted with the Brookings India team.



Shamika Ravi addresses the students of Ashoka University on the subject of health and RCTs on World Students' Day.



Constantino Xavier gave a talk at Kare College about his work.



Dhruva Jaishankar held a session on the theme of India and Asia Pacific for the students at IIT Delhi.



Dr. Rahul Tongia presented on "India's Energy Future" at the 74th Staff Course, Defence Services Staff College.



A GROWING THINK TANK

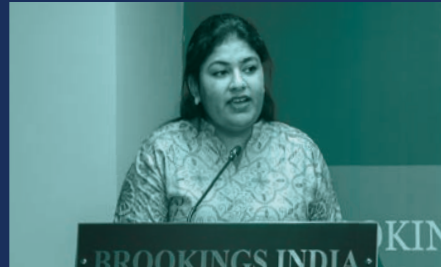
Brookings India has undergone rapid expansion in the last year, and we now have a young and talented team. This has elevated our research capacity and will enable us to widen our reach and impact. In this critical period of growth, we have successfully developed values and processes that we abide by as an institution.

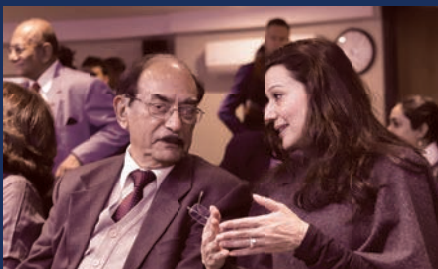
Best practices and procedures have been adopted in all areas so as to be fully compliant, and to meet process schedules and obligations. Hiring and on-boarding have been streamlined. Further, aligning the structure with our strategic goals has resulted in a happy team, fully vested in the success of the organisation.

Brookings India believes in the power of collaborations to further multidisciplinary research. Over the last one year, we have entered into collaborative partnerships with Government of Karnataka, Indian Institute of Corporate Affairs, University of Southern California, LUSK Center, Mercator Foundation Switzerland, Access Health International and MannDeshi Foundation

Our internship programme has grown from strength-to-strength, providing young researchers with intriguing and well-mentored research opportunities. Interns attend orientation sessions and one-on-one interactions with scholars and staff, to expose them to the world of policymaking.

At Brookings India, whether it is the research we produce or the institution we are building, we remain fully committed to the values of quality, independence and impact.





SUPPORT FOR BROOKINGS IN INDIA

Since its founding in 2013, Brookings India has relied on a wide range of donors to support its high-quality, independent research. These individuals, corporations, foundations, and other organisations share Brookings' abiding belief in the power of thoughtful policy analysis and recommendations grounded in observable facts to improve the lives of people. Their contributions strengthen and sustain not just the institution but also individual research programs and projects that have an immense collective impact.

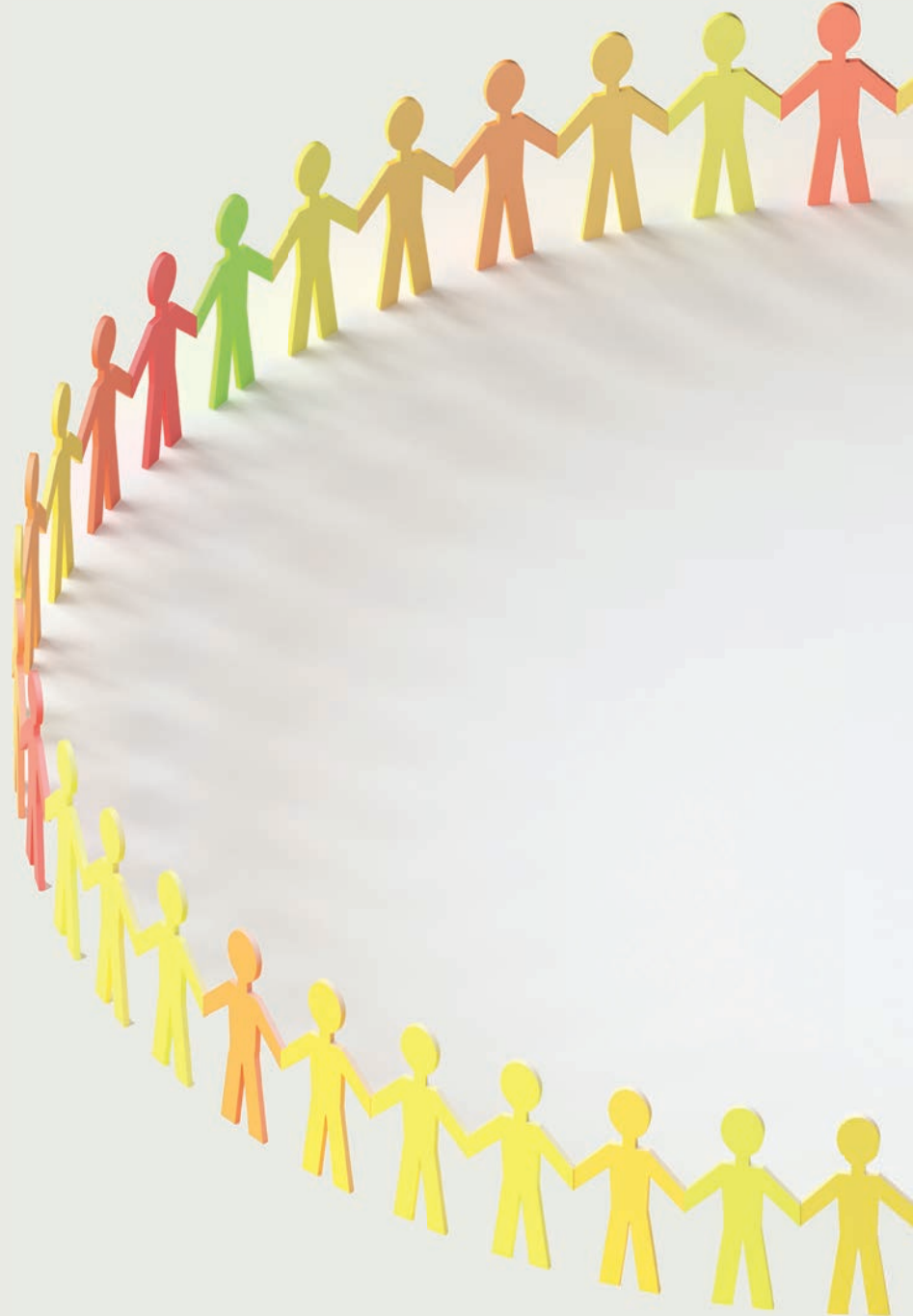
Brookings in India actively seeks support from a diverse group of donors to ensure that no single person, entity, or industry can be perceived to have influence on the research or recommendations produced by its scholars. As a matter of policy, Brookings does not accept gifts from donors who would impinge on the independence of its scholars' research or otherwise predetermine or influence recommendations, nor does the institution accept support for proprietary research.

Other than specific project support, unrestricted funding is the foundation for all that Brookings India accomplishes each year. These flexible

resources allow the institution to remain nimble in the face of a dynamic policy landscape, enabling our scholars to pivot quickly in response to breaking developments while also pursuing longer-term research goals that are not completely funded by project grants. The reports, papers, blogs, events, and other forms of knowledge that Brookings scholars produce require strategic investments to support and disseminate. The critical core funding and support from our Founders Circle and Friends of Brookings India has enabled us to advance our comprehensive research agenda that covers the most pressing issues facing India and the world.

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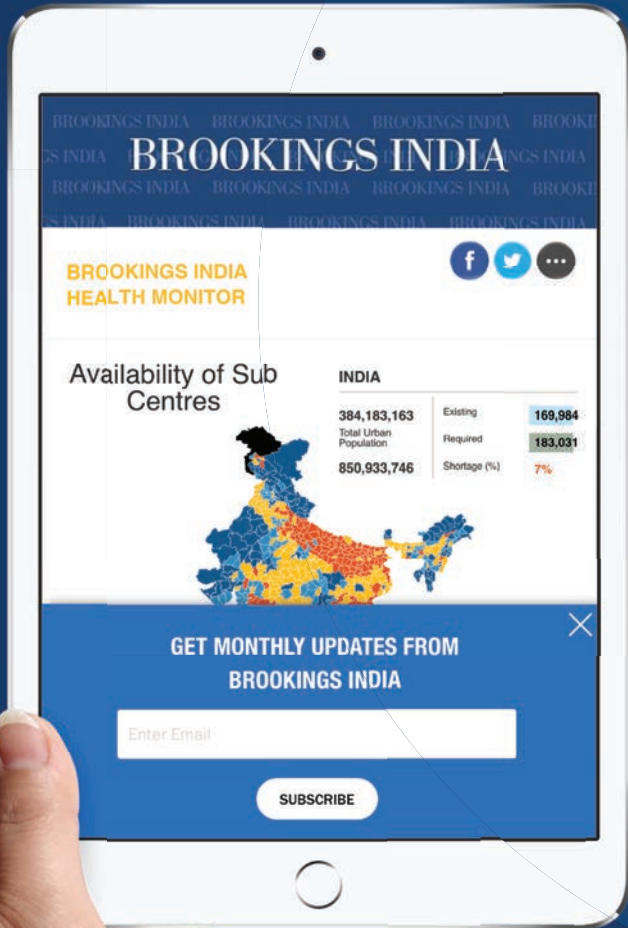
Financials

Balance sheet as at 31 March, 2019

Particulars	as at 31 st march, 2019 (₹)	as at 31 st march, 2018 (₹)
I. Equity and liabilities		
1. Shareholder's funds		
(a) Share capital	1,00,000	1,00,000
(b) Corpus funds	38,24,00,000	37,17,00,000
(c) Reserves and surplus	(3,00,40,109)	(2,88,25,387)
	35,24,59,891	34,29,74,613
2. Non-Current Liabilities		
(a) Long-term provisions	19,71,728	15,47,859
3. Current Liabilities		
(a) Trade payables	10,19,687	23,37,526
(b) Short term provision	28,203	8,857
(c) Other current liabilities (deferred revenue)	4,62,15,839	3,82,25,102
	4,72,63,729	4,05,71,485
Total	40,16,95,348	38,50,93,957
II. Assets		
1. Non-current assets		
(a) Fixed assets		
(i) Property, plant & equipment	1,11,98,785	1,29,19,981
(ii) Intangible assets	45,541	28,965
	1,12,44,326	1,29,48,946
(b) Long-term loans and advances	1,98,32,610	1,41,32,756
	3,10,76,936	2,70,81,702
2. Current assets		
(a) Cash and bank balances	35,26,32,812	35,47,91,772
(b) Short-term loans and advances	4,25,367	293,640
(c) Other current assets	1,75,60,233	29,26,843
	37,06,18,412	35,80,12,255
Total	40,16,95,348	38,50,93,957

Statement of income and expenditure for the year ended 31 March, 2019

Particulars		Current year, 2018- 2019 (₹)	Previous year, 2017- 2018 (₹)
I.	Revenue from operations	6,19,98,341	6,57,10,398
II.	Other income	2,52,65,269	1,91,57,686
III.	Total income (I + II)	8,72,63,610	8,48,68,084
IV.	Expenses		
	Employee benefits expense	3,30,14,178	3,54,76,830
	Depreciation and amortisation expense	27,29,355	38,46,100
	Other expenses	5,26,36,019	4,89,96,041
	Total expenses	8,83,79,552	8,83,18,971
V.	Profit / (Deficit) before tax (III - IV)	(11,15,942)	(34,50,887)
VI.	Tax expenses		
	Current tax	---	---
	Deferred tax	---	---
	Tax demand of earliar year	98,780	---
VII.	Profit / (Deficit) for the year (V -VI)	(12,14,722)	(34,50,887)
VIII.	Earnings per equity share:		
	Basic and diluted	(1,215)	(3,451)
	Nominal value of equity shares	100	100



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