



India's Multiple Transitions: Financing a Big Investment Push

Proceedings of the

NITI-UC Berkeley-IGIDR

**International Conference
Mumbai**

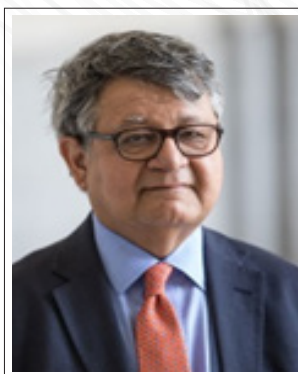
DECEMBER
16 – 17 | 2024



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Shri Suman K. Bery
Vice Chairman

National Institution for Transforming India (NITI Aayog) Government of India

Foreword

The conference on India's Multiple Transitions: Financing a Big Investment Push was able to bring together distinguished international scholars, seasoned bureaucrats and industry experts to deliberate on India's investment landscape. Hosted in collaboration with UC Berkeley and IGIDR, the conference provided an essential platform for discussing strategic financial mobilisation to accelerate India's growth ambitions. I am pleased that we successfully translated the conference insights into actionable policy recommendations through the experts' contributions.

India is headed towards becoming an economic superpower of the world by 2047. Achieving this vision requires a well-crafted and strategic approach to investment financing. Maintaining high economic growth, enhancing infrastructure and accelerating industrial development requires a robust financial system that can efficiently mobilise both domestic and global capital.

However, as we continue to achieve significant progress, key challenges persist. The banking industry faces constraints in financing major projects, making it crucial to diversify credit sources. While the municipal bond market does show potential, further development is required to enable states and municipalities to finance urban infrastructure independently. Therefore, aligning fiscal policies with long-term investment requirements, adopting flexible fiscal deficit goals, and optimising expenditures will be critical to providing sustained growth in investment.

Going forward, strong coordination among policymakers, financial institutions and private sector stakeholders will be instrumental in building a resilient and vibrant financial system. A well-calibrated strategy that boosts market liquidity, strengthens investor confidence and reinforces regulatory frameworks will be instrumental in realising India's long-term economic ambitions.

I commend the efforts behind this meticulous study, which offers valuable insights into India. I am confident that the recommendations presented will serve as a guiding framework for policymakers, finance experts and business leaders in shaping a resilient and inclusive economic future.



B. V. R. Subrahmanyam
Chief Executive Officer

National Institution for Transforming India (NITI Aayog) Government of India

Foreword

India stands at the threshold of a transformative decade—one that demands an unprecedented level of investment to drive growth, foster innovation, and build a sustainable future. As the country navigates multiple economic transitions from financial deepening to climate adjustment, the challenge lies in not only capital mobilisation but in channelling it effectively into productive, long-term investments. This policy volume on “*Financing India’s Big Investment Push*” seeks to address this pressing issue, offering insights grounded in the deliberations of the IGIDR-Berkeley Conference.

Financing India’s ambitious investment agenda calls for a strategic realignment of both domestic and global financial policies. While international capital continues to be a significant source of funding, the inherent risks associated with foreign inflows underscore the need to strengthen domestic savings and deepen the financial ecosystem. With household savings accounting for 18.4 per cent of GDP, and approximately 70 per cent directed towards physical assets, there is an urgent need to shift this preference toward financial assets. This can be achieved by expanding the bond market, enhancing financing mechanisms for SMEs, and driving institutional innovation.

At the core of India’s growth ambitions lies the need for an updated financial architecture, one that supports the scale and complexity of the country’s evolving investment needs. This volume underscores the critical role of robust policy frameworks in enabling efficient capital allocation. In particular, it emphasises the significance of comprehensive fiscal reform that strengthens non-tax revenue mobilisation, improves the quality of public spending, and creates space for sustained infrastructure investment. A shift towards more flexible budgetary deficit targets and reassessment of revenue deficit management is crucial in this regard.

India’s journey toward investment-led growth also demands a forward-looking approach to financial liberalisation. This volume explores the complex interplay between capital controls, foreign exchange reserves, and macroprudential policy, highlighting the need to balance financial stability while absorbing capital flows effectively. As the global financial dynamics continue to evolve, and as India seeks deeper integration with the international financial system, it becomes imperative to design policy frameworks that attract capital inflows while ensuring long-term economic resilience and sustainability.

India’s growth trajectory demands a well-coordinated and thoughtfully designed financing strategy. By aligning financial markets, fiscal policies, and investment frameworks, the country can effectively navigate its economic transitions and unlock the full potential of



its development aspirations. The perspectives presented here offer essential guidance for policymakers, financial institutions, and industry leaders committed to shaping India's investment future. We trust that this volume contributes meaningfully to the ongoing discussion on India's financial transformation and provides valuable insights for the future course of action.



Donald P. Hanna

Center for Growth Markets, UC Berkeley Haas School of Business

Foreword

India stands at a pivotal juncture, emerging as a rising economic powerhouse with a vision to achieve high-income status by 2047 while also committing to sustainability and climate resilience. The scale and complexity of this dual challenge call for a correspondingly sophisticated financial strategy. In light of this, the Center for Growth Markets at UC Berkeley had the privilege to co-organize the IGIDR-Berkeley-NITI Aayog conference on India's Multiple Transitions: Financing a Big Investment Push.

The conference served as a unique forum for the exchange of ideas between global scholars, policymakers and experts. Across four focused sessions, we explored macroeconomic trends, capital mobility, financial deepening, and fiscal innovations that will be necessary to steer India's economic transformation. The discussions bridged theory and practice, rooted in an appreciation of India's unique institutional and social context, while drawing valuable insights from international experiences.

A recurring theme throughout the discussion was the recognition that while India's investment needs are vast, its financial landscape is evolving in promising ways. The growing popularity of systematic investment plans (SIPs), emergence of REITs and InvITs, progress in municipal bonds, and the expanding the role of fintech solutions all point to a dynamic and adaptive financial ecosystem. However, the scale of India's climate and development investment requirements underscore the need for further progress, particularly in strengthening bond markets, improving credit ratings, and fostering an environment conducive to long-term risk capital.

As Berkeley scholars, we were especially encouraged by the openness and engagement shown during the conference, and by the shared understanding of the critical need for deeper collaboration between academia and policy. India's financial transformation cannot be achieved in silos. It demands an integrated strategy that balances macroeconomic prudence with innovative capital mobilisation, blends fiscal discipline with developmental urgency, and, importantly, fosters continuous dialogue between research institutions, policymakers, and market participants.

We extend our sincere thanks to NITI Aayog and IGIDR for their leadership in convening this important event. The Center for Growth Markets is committed to India's financial transformation through collective research, joint workshops, and long-term interaction with Indian institutions. We look forward to strengthening our collaboration and contributing significantly towards India's path of inclusive and sustainable prosperity.

**Basanta Pradhan****Director and VC**

Indira Gandhi Institute of Development Research, Mumbai

Foreword

The Indira Gandhi Institute of Development Research (IGIDR) was honoured to co-host the international conference on India's Multiple Transitions: Financing a Big Investment Push in Mumbai in December 2024. Organised in collaboration with NITI Aayog and the University of California, Berkeley, the conference brought together a distinguished group of participants, renowned international scholars, leading Indian academics, senior policymakers, and the financial sector to deliberate on the fiscal strategies needed to support India's ambitious development trajectory.

At a time when India is navigating multiple overlapping transitions—economic modernisation, climate adaptation, financial deepening, and the pursuit of social inclusion—the significance of investment-led growth cannot be overstated. The conference underscored this urgency. Structured around four thematic sessions, dealing with macroeconomic management, liberalising capital flows, constructing a new financial architecture, and the fiscal dimensions of investment financing, offered a comprehensive view of the scale and complexity of the challenges ahead.

For IGIDR, it was particularly rewarding to see all the core areas of our research, fiscal policy, capital markets, household savings behaviour, and macroeconomic stability, interwoven into the broader policy discourse. The discussions made it abundantly clear that addressing India's investment needs for achieving climate goals, developing infrastructure and enhancing productivity will require more than just new sources of finance. The emphasis was firmly placed on the need to more effectively mobilise domestic savings, deepen bond markets, unlock long-term capital, and reform fiscal frameworks to improve the quality and impact of government expenditure.

IGIDR feels proud to have contributed to this valuable intellectual exercise. As a leading institution committed to economic research and policy application, we are encouraged by the depth of debate and rich exchange of ideas that this conference promoted. We extend our sincere gratitude to our partners, NITI Aayog and UC Berkeley, for their spirit of collaboration and academic excellence. In the future, IGIDR is dedicated to promoting such cross-institutional and cross-disciplinary partnerships that infuse economic policy thinking with rigour and relevance.

We sincerely hope that the ideas that have emerged from this conference will serve as valuable inputs to India's changing investment strategy and contribute to the policy architecture required for sustainable and inclusive growth in the years ahead.



Dr. Pravakar Sahoo

Senior Lead

National Institution for Transforming India (NITI Aayog) Government of India

Foreword

India's vision to emerge as an advanced economy by its centenary year in 2047 is a visionary and ambitious goal. Realising this vision will require a radical shift in the manner in which we plan, finance, and execute our development priorities. The conference on *India's Multiple Transitions: Financing a Big Investment Push*, co-hosted by NITI Aayog, IGIDR, and UC Berkeley, was held at a crucial juncture as India's financial and developmental future undergoes a profound reconfiguration..

At NITI Aayog, we have consistently championed the power of collective thought and multi-stakeholder engagement in shaping sound policies. This conference was a reflection of that ethos. Over two days of rigorous and spirited dialogue, we brought together some of the best minds in macroeconomics, public finance, development economics, and financial regulation to unpack the intricacies of India's investment puzzle. What came out was a common understanding: the scale of investment India needs, particularly for climate resilience, infrastructure development, and urban transformation, cannot be met through public funds or conventional banking alone. We need a 21st-century financial strategy—one that leverages deep bond markets, mobilises both household and institutional savings, attracts stable foreign capital, and de-risks long-term investments through innovative financial instruments. Importantly, this strategy must be grounded in fiscal responsibility, regulatory transparency, and strong institutions that inspire confidence among investors and citizens alike.

One of the key takeaways from the conference was to reexamine and redesign India's fiscal architecture— shifting from rigid deficit targets towards a more fluid, growth-based framework. Discussions on financial deepening, similarly, highlighted the importance of expanding retail participation in bond markets, increasing SME finance mechanisms, and encouraging green and thematic bonds aligned with India's sustainability goals. At NITI Aayog, we are committed to translating these valuable insights into actionable policy frameworks. We extend our sincere gratitude to our co-hosts, UC Berkeley and IGIDR, for their intellectual leadership and meaningful engagement. This conference has laid the foundation for future collaborations, and we are eager to continue this alliance in developing knowledge-led, future-ready policies that will drive India's transformation.

As we look forward, the true success of this conversation will be our capacity to translate insights into institutional change and policy measures. We are hopeful that through such collaborative platforms, we will create a financial ecosystem that can step up to the challenge and finance India's growth story with resilience and vision.





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Overview

India is poised for a historic transformation. By 2047, the country aspires to be a high-income, climate-resilient and globally connected economy. This vision is not just aspirational, it is a necessity driven by the confluence of six structural transitions: the demographic shift, urbanisation, deepening of financial markets, climate change mitigation, a manufacturing and agricultural productivity surge and the recalibration of fiscal and regulatory governance. To finance these transitions and ensure equitable outcomes, India must undertake a “big investment push”, mobilising annual investment levels of 33–38 per cent of GDP consistently over the coming decades.

Reaching such elevated investment rates involves more than just increasing savings. It requires a re-engineering of India’s macroeconomic strategy, liberalisation of capital flows, modernisation of the financial architecture and a robust fiscal framework that sustains while maintaining fiscal discipline. At the same time, investments must be directed toward infrastructure, climate resilience, human capital, and innovation in a way that ensures both productivity and sustainability.

The policy framework underpinning this push must also account for the evolving nature of global capital markets, the volatility of financial flows, and the rising cost of climate inaction. Moreover, while fiscal consolidation remains critical, it must not come at the expense of capital formation. A modern fiscal strategy must enhance revenue buoyancy, optimise expenditure, promote intergovernmental equity and balance development with debt sustainability.

This report is organised around four critical policy themes that underpin India’s investment-led growth strategy: aligning macroeconomic stability with the country’s multiple transitions; carefully sequencing capital account liberalisation; building a modern financial system to support productive, tech-driven investment; and redesigning fiscal policies to mobilise and deploy capital efficiently. Together, these pillars form the foundation of India’s long-term roadmap to 2047.

Macroeconomic Management and India’s Multiple Transitions

India stands at the intersection of several transformative shifts, demographic changes, rapid urbanisation, the clean energy transition, digital proliferation and evolving patterns of saving and investment. These transitions, occurring simultaneously, present both unprecedented opportunities and complex challenges. Navigating them effectively is essential for sustaining robust growth and ensuring macroeconomic stability in an increasingly volatile global environment.

Central to this process is the need to significantly raise the level and quality of investment. Gross fixed capital formation as a share of GDP, after peaking during the mid-2000s, has plateaued and remains insufficient to sustain 7.5–8 per cent annual growth over the long term. To reverse this trend, India must not only mobilise more capital but ensure that it is directed toward high-productivity sectors, such as infrastructure, green energy and innovation-driven industries. Furthermore, the quality of investment, its return on capital, linkages to employment and alignment with climate and urban development goals are as crucial as its scale.

This investment momentum must align with India’s demographic window, which presents a unique, time-limited opportunity. With the working-age population expected to rise until the early 2040s, the potential for growth is immensely provided it is matched with



sufficient capital investment. However, without parallel progress in education, health, skilling and labour-intensive manufacturing, the demographic dividend may turn into a liability. At present, India's capital-to-labour ratio and productivity per worker remain low, particularly in manufacturing and construction. A failure to address this mismatch could constrain output, worsen income inequality and strain public resources.

The climate transition introduces another layer of macroeconomic complexity. Climate change is no longer a distant risk; it is a present and intensifying economic shock. Extreme weather events have already begun to erode capital stocks, depress productivity and increase fiscal pressure. India's commitment to net-zero emissions by 2070 and to adding 500 GW of non-fossil energy capacity by 2030 requires transformative investments in renewables, green mobility and urban resilience. However, the climate transition also presents opportunities to drive technological change, develop new industries and tap into global green finance flows. For this to happen, climate objectives must be embedded into the core of macroeconomic planning, not treated as an environmental afterthought.

Urbanisation is another critical dimension. India will see its urban population nearly double by mid-century, placing immense pressure on cities, while also creating agglomeration opportunities. The macroeconomic implications of urbanisation are substantial: it affects housing demand, energy use, labour mobility and public service delivery. If well-managed, cities can become hubs of innovation, productivity and formal employment. If mismanaged, they can exacerbate informality, congestion and climate vulnerability. India must prioritise investments in urban infrastructure, transit, housing and municipal finance, while linking spatial planning with industrial and labour market strategies.

The pattern of savings and its intermediation through financial markets also requires close attention. While India's aggregate savings rate is relatively healthy by international standards, the composition is skewed. Household savings are predominantly in physical assets, such as gold and real estate, which do not translate effectively into productive capital formation. Corporate savings, though rising, have not led to commensurate investment due to risk aversion and regulatory bottlenecks. To bridge this gap, India must channel household financial savings into long-term instruments, such as infrastructure bonds, pension funds and green finance vehicles. This will require reforms in financial markets, tax incentives, investor education and regulatory support for new financial products.

Equally important is the quality of investment demand. Public and private capital must be deployed efficiently. Weak institutions, delays in project execution, and governance failures can erode the productivity of capital. Improving the business environment, strengthening contract enforcement and fostering transparent public procurement are essential to ensure that every rupee of investment contributes meaningfully to growth. Total factor productivity, which has lagged in recent years, must be revived through reforms that enhance competition, innovation and labour reallocation from low- to high-productivity sectors.

India's external sector also plays a stabilising role in the macroeconomic framework. The services sector, especially digital, R&D and financial services, has emerged as a strong export performer. But a sustained increase in goods exports, especially in manufacturing, is necessary to balance the current account and create jobs. Trade policy, export credit and logistics infrastructure must be aligned with industrial development and investment promotion goals. At the same time, the exchange rate regime and foreign reserve management should continue to provide stability without undermining export competitiveness.

In the face of multiple transitions, macroeconomic policy must strike a careful balance. Fiscal prudence, inflation control and external stability remain essential anchors. Yet, these



must not come at the cost of investment and innovation. Policy coherence across monetary, fiscal, trade and industrial domains is critical. Institutions must coordinate across levels of government, ministries and regulatory bodies to align incentives and ensure that growth is broad-based, inclusive and sustainable.

In sum, macroeconomic management in India is no longer about managing cyclical fluctuations in output or inflation. It is about enabling and governing structural transformation on multiple fronts, i.e. economic, social and environmental. The choices made today, in terms of investment strategy, institutional reform and policy alignment, will shape the next generation of development outcomes. If executed well, India can convert its transitions into multipliers, building a dynamic and resilient economy that not only grows faster but also grows better.

Liberalising Capital Movements: A Strategic Path to Openness with Stability

In an era of expanding global integration, the strategic opening of India's capital account is vital to securing long-term investment, enhancing financial resilience and deepening ties with international markets. However, the path to openness must be carefully managed. India's approach must prioritise stability, sequence reforms thoughtfully and tailor safeguards to its unique macroeconomic and institutional context to avoid the missteps seen in other emerging economies.

This balancing act is informed by the well-known Mundell-Fleming trilemma, which states that a country cannot simultaneously maintain a fixed exchange rate, free capital flows and independent monetary policy. Unlike advanced economies that have embraced open capital accounts and floating exchange rates, India has followed a middle path, gradually opening its capital account while maintaining a managed float and retaining monetary sovereignty. This approach has served India well, helping it navigate the turbulence of the 1997 Asian Financial Crisis and the 2008 Global Financial Crisis. By liberalising trade and foreign direct investment (FDI) before allowing significant portfolio inflows and favouring long-term capital over speculative money, India has managed to avoid destabilising episodes of capital flight.

A cornerstone of India's approach has been the accumulation of substantial foreign exchange reserves, which now cover more than ten months of imports, among the highest for emerging markets. These reserves provide a critical buffer, enabling the Reserve Bank of India (RBI) to intervene during periods of currency volatility without undermining monetary autonomy. The RBI employs a mix of spot market operations, forward contracts and policy signalling to manage the rupee, focusing not on pegging it to a specific level, but on reducing excessive fluctuations that could impact trade and investment.

India's preference for FDI over portfolio flows reflects a strategic choice. FDI tends to be more stable and brings productivity benefits, while being less prone to sudden reversals driven by global liquidity cycles. However, recent trends are cause for concern. Gross FDI inflows have stagnated at 2–3 per cent of GDP for over a decade, and net inflows have declined sharply from USD 44 billion in FY21 to near-zero by FY25, largely due to divestments and profit repatriation. Domestic challenges, including regulatory uncertainty, procedural delays and land acquisition issues, have dampened investor enthusiasm. Revitalising FDI will require structural reforms that enhance the ease of doing business and provide clearer, more consistent policies, particularly in key sectors, such as telecommunications, insurance and agriculture.

In contrast, portfolio flows, especially debt inflows, have gained importance. India's inclusion in global bond indices like the JP Morgan GBI-EM is expected to channel substantial passive capital into the economy. This shift calls for stronger risk management frameworks, given the inherently volatile nature of portfolio flows and their sensitivity to global interest rates and risk sentiment.



India's cautious approach to liberalisation is informed by past crises in other countries. The Eurozone crisis revealed the dangers of financial integration without fiscal coordination, while countries like Mexico and Argentina suffered when excessive reliance on short-term capital inflows collided with weak institutions. These examples underscore the importance of having robust macroeconomic and regulatory foundations in place before liberalising the capital account.

India's ability to effectively harness foreign capital will also depend on its absorptive capacity. This means deepening domestic financial markets, expanding the availability of instruments like corporate bonds and infrastructure trusts (REITs and InvITs) and improving macroeconomic predictability. Transparent tax regimes, reliable data and efficient dispute resolution mechanisms are essential for building investor confidence. Capital inflows should also be directed toward development priorities, such as infrastructure, climate resilience and innovation. Instruments like green bonds, blended finance and public-private partnerships can help align foreign investment with these national goals.

Volatility in capital flow remains a key risk. Portfolio investments, especially those driven by global institutional investors and hedge funds, can amplify boom-bust cycles. Sudden outflows may destabilise asset markets, weaken the currency and force contractionary policy responses. To mitigate these risks, India needs a strong macroprudential framework, including leverage caps for financial institutions, liquidity coverage norms and rules to align the currency and maturity structure of corporate borrowing. Countercyclical buffers for systemically important entities, as well as real-time market surveillance and stress testing by regulators like the RBI and SEBI, are critical to ensuring financial stability.

Managing the exchange rate is another crucial element of India's strategy. While a stronger rupee may attract foreign capital, it can erode export competitiveness. India's managed float has generally succeeded in maintaining currency flexibility without allowing misalignment. The real effective exchange rate (REER) has remained stable, supporting both trade and capital flow. Effective communication of policy intent by the RBI also plays a vital role in anchoring market expectations and deterring speculative behaviour.

India has also taken steps to liberalise outward capital flows. Indian multinationals are investing more abroad, and this trend should be encouraged to help them access technology, new markets and risk diversification. However, the framework for outward portfolio investment by individuals remains restrictive. Gradual liberalisation of these flows, with appropriate prudential safeguards, could deepen India's financial integration and offer diversification options to domestic investors. Moreover, outward flows can serve as a useful tool to offset rupee appreciation during periods of large capital inflows, provided they are managed to avoid undue vulnerabilities.

Emerging technologies and digital finance offer promising avenues for capital account innovation. India's experimentation with Central Bank Digital Currency (CBDC) has the potential to transform cross-border transactions, making them faster, cheaper and more transparent. Retail CBDCs can reduce remittance costs and foster financial inclusion, while institutional CBDCs can enhance data quality and improve the efficiency of capital markets. Meanwhile, fintech innovations like tokenised securities and blockchain settlements could improve market access and liquidity, provided regulatory oversight keeps pace.

Looking ahead, India's capital account liberalisation must be driven by strategic priorities. The goal is not liberalisation for its own sake, but to channel global capital into high-return, development-aligned investments. A successful roadmap will emphasise gradualism, prioritise market depth, maintain policy transparency, uphold prudential safeguards and



align financial openness with national goals, such as sustainability and employment. This can include raising FPI limits in selected sectors, expanding the rupee bond market for foreign investors, issuing benchmark green bonds and implementing carbon pricing mechanisms.

With a clear policy vision, institutional readiness and macroeconomic discipline, India can pursue capital account liberalisation in a way that strengthens resilience, promotes growth and supports its rise as a high-income economy.

Modern Financial Architecture for a Fast-Growing Economy

The engine of a high-growth economy is its financial system, capable of efficiently mobilising savings, channelling capital into productive uses and supporting innovation. India's financial architecture is evolving rapidly, but gaps remain in credit delivery, long-term financing and market depth. As digital technologies and new financial actors reshape the landscape, India must build a more inclusive, robust and forward-looking system to meet the demands of a dynamic, investment-led economy.

Indian households have traditionally exhibited high savings rates, but these have been skewed toward physical assets like real estate and gold. As of FY23, nearly 70 per cent of household savings still flowed into such non-financial assets, limiting their contribution to productive investment. Encouragingly, this trend is beginning to shift. Rising financial literacy, improved access to digital platforms, and more attractive returns in financial markets have drawn households toward financial instruments. The number of demat accounts has grown at a compound annual growth rate of 40 per cent between FY20 and FY24, mutual fund assets have more than doubled since 2019, and systematic investment plans (SIPs) are reaching record inflows. This shift is crucial if India is to meet its target of an investment-to-GDP ratio of 33–38 per cent. To channel household savings into long-duration, productive investments, the financial ecosystem must offer a mix of safety, liquidity, attractive returns, tax incentives and regulatory clarity.

The corporate sector, too, is undergoing a quiet revolution. Once reliant on external borrowing and bank credit, Indian companies are now increasingly funding operations through internal surpluses. From FY14 to FY24, the ratio of investing cash flows to operating cash flows fell from 140 per cent to 70 per cent, reflecting a growing trend of self-financing. While this enhances resilience and reduces systemic credit risk, it also presents a challenge: unless corporates increase capital expenditure, surplus funds may be inefficiently allocated or directed toward speculative assets. In the broader macroeconomic context, with government deficits averaging 8 per cent of GDP and the current account deficit around 1 per cent, corporate savings have become a stabilising force, reducing the need for external financing and insulating the economy from capital flow volatility.

India's equity markets have emerged as a global success story. With the fourth-largest market capitalisation in the world, India is poised to witness record equity issuance of 7.5 trillion in FY25 through IPOs and promoter stake sales. Domestic demand, buoyed by contributions from the Employees' Provident Fund Organisation (EPFO), mutual fund SIPs and insurance inflows, is absorbing much of this issuance. Despite periodic foreign institutional investor (FII) outflows, robust domestic institutional investor (DII) participation has supported market resilience. Still, high valuations, evident in the Nifty 50's, elevated price-to-earnings ratio signal potential vulnerability, particularly in a downturn. Strengthening IPO processes, enforcing corporate governance, broadening institutional participation and improving liquidity in mid- and small-cap segments are critical to sustaining healthy equity markets.

Yet, India's financial architecture suffers from a major gap: a shallow corporate bond market. While the equity market thrives, debt issuance remains limited due to weak



investor confidence, underdeveloped secondary markets and inefficient credit resolution. The corporate bond market is just a fraction of its U.S. counterpart, despite India having comparable equity depth. This stunts long-term finance, especially for infrastructure and innovation-driven sectors. The solution lies in reforming credit rating practices, strengthening insolvency frameworks, enhancing transparency in debt markets and encouraging long-term investors, such as insurers and pension funds, to participate in bond markets.

Meanwhile, India's digital transformation has revolutionised its financial system. Innovations like the Unified Payments Interface (UPI), Aadhaar and the Account Aggregator framework have expanded access, cut costs and democratised retail investing. Between 2019 and 2024, fintech platforms surged across payments, lending and wealth management. Digital lending apps, peer-to-peer investment tools and robo-advisory services are empowering users like never before. Regulatory technologies (regtech) and supervisory technologies (suptech) are also enhancing compliance and oversight. However, rapid digitisation introduces new risks—cyber threats, algorithm-induced volatility and operational vulnerabilities from fintech failures. Regulators must walk a tightrope between enabling innovation and safeguarding stability. Sandboxing policies, combined with rigorous data governance and monitoring systems, can strike this balance.

One of the boldest innovations is the pilot rollout of India's Central Bank Digital Currency (CBDC). A retail CBDC has the potential to reduce reliance on cash, lower transaction costs, and improve transparency. An institutional CBDC can streamline cross-border settlements and enhance foreign exchange efficiency. CBDCs also promote financial inclusion by integrating underserved regions into the formal financial system. Yet, care must be taken to avoid disintermediating commercial banks. Retail CBDCs should be distributed through existing banks and financial intermediaries to preserve the stability of deposit bases.

A key test of the new financial architecture will be its ability to mobilise capital for India's green transition. Meeting climate investment requirements estimated at USD 200–350 billion annually through 2035 will demand substantial redirection of financial flows. While India has issued sovereign green bonds and launched ESG-themed funds, the green finance ecosystem remains nascent. A climate-aligned financial system requires a well-defined green taxonomy, mandatory ESG disclosures, increased participation from development finance institutions (DFIs) and de-risking tools like blended finance and credit guarantees. Public policy must enable investment in renewables, battery storage, green hydrogen and sustainable transport, sectors that need long-term capital and policy.

Inclusivity remains the final, vital pillar of a modern financial system. Despite progress in formalisation, a significant share of India's population remains unbanked or underbanked. Financial exclusion persists, especially across gender lines and in rural areas. Making finance more inclusive means broadening access to savings, credit and insurance; promoting gender-sensitive financial tools; and supporting micro, small and medium enterprises (MSMEs) with growth capital. Digital platforms and competition can help reduce costs, but they must be complemented by targeted financial literacy programs and infrastructure. The Jan Dhan–Aadhaar–Mobile (JAM) trinity offers a powerful platform, but must be expanded to include credit access, pension coverage and safety nets.

India can draw useful lessons from global models. The United States demonstrates how market-led finance can drive innovation and participation, while China's state-backed development of the corporate bond market highlights the impact of public policy alignment, albeit with risks of over-leverage. The European Union showcases the benefits and limits of bank-dominated finance. India must chart its own hybrid course, leveraging market-led intermediation while guiding finance toward long-term, inclusive and sustainable goals through policy direction and institutional development.



In sum, a modern financial architecture is the foundation upon which India's high-growth ambitions must be built. Progress in equity markets and digital access has been notable, but gaps remain in corporate bond markets, institutional investment capacity and climate finance. Deepening financial markets, improving the quality of intermediation and ensuring broad-based access to financial services will be essential to meet India's rising capital needs and to support its evolution into a high-income, sustainable economy.

Fiscal Dimensions of a Big Investment Push

Meeting India's vast developmental and climate goals demands not just more investment, but smarter public finance. With limited fiscal headroom and mounting long-term needs, the challenge lies in mobilising additional resources while ensuring that every rupee spent delivers a high impact. This calls for a reimagined fiscal framework, one that enhances revenue generation, boosts spending efficiency, empowers states and anchors long-term sustainability in public finance.

In recent years, India's capital expenditure has risen significantly. Central government outlays increased from INR 3.4 trillion in FY20 to over 10 trillion in FY25, with state governments also scaling up spending in areas like roads, energy, housing and healthcare. Yet, the sheer scale of the investment required, especially for climate infrastructure, green energy, digital public goods and robust social protection, remains far beyond current levels. Climate-related investments alone may demand between USD 200–350 billion annually by the 2030s, representing close to 5 per cent of GDP. Meanwhile, general government debt stands above 80 per cent of GDP and interest payments absorb nearly 30 per cent of government revenues. Relying on high nominal GDP growth alone to passively correct fiscal imbalances is becoming increasingly untenable. Without a recalibrated fiscal approach, capital formation could be crowded out and intergenerational equity compromised.

Creating fiscal space to sustain high levels of capital expenditure will require a combination of increased revenues, better utilisation of public assets and improved expenditure management. On the revenue front, India's tax-to-GDP ratio has recently crossed 18 per cent, a milestone not reached since 2007, due to better direct tax collection, improved GST compliance and digital enforcement. Still, this remains below the 21–23 per cent range typical of comparable emerging economies. Further reforms must broaden the direct tax base, reduce exemptions, improve property tax systems and rationalise cesses and surcharges to ensure equitable distribution of central revenues. Introducing carbon-pricing mechanisms within the GST framework, such as a "carbon top-up", could generate additional revenues while supporting climate goals. In parallel, the National Monetisation Pipeline outlines opportunities to recycle public assets across transport, power and other sectors. Urban finance tools like land-value capture, municipal bonds and infrastructure investment trusts (InvITs) could also unlock significant non-tax revenue. Public-private partnerships, particularly in climate-resilient urban infrastructure, can integrate innovation with fiscal prudence when designed with proper safeguards.

Elevated capital outlays must be converted into high-quality assets that enhance productivity. This calls for substantial improvements in planning, implementation and evaluation. Outcome-based budgeting must replace input-driven allocation, prioritising projects through rigorous cost-benefit analysis and alignment with development objectives. Public financial management systems need to incorporate geospatial data, performance metrics and lifecycle costing. Reducing leakage and duplication is also essential. Thousands of overlapping centrally sponsored schemes and state programs lead to fragmented service delivery. Consolidating schemes and enforcing coordinated planning at the district level, such



as through a “one district-one plan” approach, can boost impact. Furthermore, investment in human capital, such as early childhood education, health and skill development, should be classified as capital formation, on par with physical infrastructure. Recognising this would justify larger budgetary allocations and dismantle artificial constraints imposed by narrow definitions of capital expenditure.

India's existing fiscal rules, governed by the Fiscal Responsibility and Budget Management (FRBM) Act, need rethinking. Originally enacted in 2003 to limit deficits and debt, the framework has since been diluted. Borrowing is now often used to fund current spending, rather than investment. A new generation of fiscal rules must reinstate revenue deficit targets and ensure that borrowing finances future growth. A more flexible, countercyclical fiscal framework similar to inflation targeting could allow room for short-term support during downturns while maintaining a clear medium-term path toward consolidation. Debt sustainability thresholds should also account for economic cycles and climate risks. Establishing a credible glide path to reduce general government debt to 60–65 per cent of GDP by 2035 would enhance market confidence, lower borrowing costs, and provide room for priority investments.

Fiscal federalism is another critical dimension. States are responsible for the delivery of education, health, electricity distribution and urban services. Reforming the Finance Commission's devolution formula to reward investment efficiency, rather than just population or income levels, can better align incentives. Revisiting the division of responsibilities in the Constitution's Seventh Schedule, particularly for concurrent sectors, such as environment and health, would improve coherence. Performance-based grants linked to measurable outcomes, such as forest conservation or learning achievements, should be expanded. Allowing states greater borrowing capacity for productive capital expenditure, under a robust risk framework, would enable them to play a stronger developmental role. A renewed fiscal federal compact is essential: India's transformations cannot succeed without empowered and well-resourced subnational governments.

India's green transition presents a fiscal paradox. As the economy decarbonises, revenues from fossil fuel taxes, including excise on petroleum and coal, will decline. These revenues represented over 3 per cent of GDP in 2019. Meanwhile, spending on green infrastructure, adaptation, and innovation will increase. Addressing this mismatch requires the introduction of climate-aligned revenue mechanisms, such as carbon pricing, ideally embedded within the GST structure. Climate budget tagging systems should be used to track and prioritise green public expenditure, while climate finance should be integrated into the broader public investment strategy. Development cooperation and blended finance instruments will be vital. States heavily reliant on fossil fuel revenues like Jharkhand and Gujarat must be supported through a just transition framework that includes compensation, worker reskilling and economic diversification.

Finally, long-term productivity growth rests on public investment in innovation, digital infrastructure and institutional capability. Yet public R&D spending remains below 0.7 per cent of GDP, among the lowest in the G20. A strategic reclassification of R&D and digital infrastructure as capital expenditure is needed. The establishment of a National Innovation Fund, co-financed by the private sector and global partners, could catalyse new technologies and solutions. India must also expand green industrial policies, using tools like production-linked incentives to foster capabilities in sectors such as green hydrogen, battery storage and precision agriculture. As global value chains shift and domestic digital ecosystems mature, fiscal policy must proactively enable regional economic clusters, technology diffusion and entrepreneurship.



India's investment-led development strategy will not succeed without a modern and adaptive fiscal framework. Expanding the revenue base, improving spending efficiency, empowering states and navigating the green transition are all necessary components. Fiscal discipline, when properly designed, is not a constraint on development but its foundation. India must move from a paradigm of merely "spending more" to one of "spending better," ensuring that every rupee is aligned with long-term productivity, equity and sustainability.

CONCLUSION: TOWARDS A COHERENT INVESTMENT STRATEGY FOR INDIA @2047

India's aspiration to become a high-income, climate-resilient economy by 2047 hinges on its ability to undertake a coherent and sustained investment push, supported by sound macroeconomic management, strategic capital account liberalisation, a robust financial architecture and a future-oriented fiscal framework. As this overview has demonstrated, the country's multiple transitions, demographic, climatic, urban and financial are not isolated phenomena but interconnected forces that must be aligned with a long-term development strategy. Raising the investment rate to 33–38 per cent of GDP will be critical, but the quality, composition and productivity of that investment will determine whether it translates into inclusive and sustainable growth. Capital account reforms must be sequenced carefully to ensure that foreign savings complement, rather than destabilise, domestic financial markets. Meanwhile, domestic savings, particularly from households and corporations, must be efficiently intermediated through deeper, more inclusive financial systems that embrace digital innovation and climate alignment.

At the same time, India's fiscal framework must shift from a narrow focus on deficit containment to one that enables structural transformation. Public finances should be reoriented toward high-impact capital expenditure, supported by a broader and more buoyant revenue base, effective intergovernmental coordination and institutionalised transparency. States and cities must be empowered to invest in infrastructure, education and resilience, while the centre leads to innovation, green transition and fiscal risk management. With credible macroeconomic policy, institutional reform and a renewed commitment to sustainability and inclusion, India can unlock the full potential of its multiple transitions. The task ahead is immense, but so is the opportunity to craft a growth model that is not only fast and resilient but also equitable and future-ready.



Climate Change in India: Adaptation, Mitigation and Finance



Barry Eichengreen

UC Berkeley

INTRODUCTION

India stands at a pivotal moment in its development journey, with the opportunity to lead on climate action while pursuing strong, inclusive economic growth. As one of the fastest-growing major economies, India has made important strides in renewable energy, sustainable infrastructure and environmental policy. Its National Climate Strategy reflects this ambition, setting out a vision that aligns domestic priorities with global climate goals.

To realise this vision, substantial investment will be required. The Government of India estimates a need for around US\$200 billion annually through 2030, equivalent to about five per cent of the country's current-dollar GDP (Government of India 2024). Other projections suggest even higher requirements, reaching \$260 billion per year over the same period and potentially \$350 billion annually in the years 2031–35 (International Finance Corporation 2023). How manageable this challenge proves will depend on India's economic momentum — for instance, sustained growth of 8 per cent per year would double the size of the economy within a decade, easing the relative burden of these investments.

The urgency of the task is clear. India needs to mitigate pollution, as anyone who has spent the November–February season in New Delhi will know. It needs to combat and adapt to sea-level rise. It needs to avoid disrupting the monsoon. And it has a commitment to its own people and to the world to achieve COP goals of increasing non-fossil-fuel-based capacity by 500 GW by 2030 and achieving net zero by 2070.

CONTEXT

Some progress has already occurred. The energy intensity of Indian manufacturing (kWh per rupee of Gross Value Added) fell by 15 per cent between 2009–10 and 2019–20, while carbon intensity fell by 7 per cent.

Economy-wide, future trends will depend on the efficiency of energy use in manufacturing, but also on the relative importance of manufacturing and services and the breakdown of the latter between Artificial Intelligence and cloud computing, which are notoriously energy-intensive, versus other services. This last point is worth emphasising. India aspires to be a global leader in the coming digital revolution. The country's AI-related investment and revenues have been growing by 40 per cent per annum since 2020. Training a single AI



can emit as much carbon as five internal-combustion engines over their lifetimes. And then there's the steel and concrete required for the construction of new data centers. Non-fossil fuel sources currently account for 46 per cent of energy. The goal is to obtain 50 per cent of the country's electricity from renewables by 2030, which would seem to be within reach.

At the same time, India's energy strategy continues to balance its growing demand for affordable and reliable power with its climate commitments. While the government has laid out ambitious renewable energy targets, it also plans to expand domestic coal mining and currently extends subsidies and tax incentives for coal production and imports. This reflects the complex realities of meeting the country's immediate energy needs while transitioning to a low-carbon economy.

Independent assessments, such as those by Climate Action Tracker, indicate that while India has made important progress in setting climate targets and expanding renewable energy, further efforts will be needed to align its emissions trajectory with the Paris Agreement goal of limiting global temperature rise to 1.5 degrees Celsius. These analyses suggest that India may need to enhance its planned investments and accelerate the implementation of climate initiatives to stabilise emissions by 2030 in a manner consistent with international climate objectives.

FINANCE

The question I ask in this paper is how India should finance climate-related investments on the order of 5 per cent of GDP annually, on top of its already extensive investment needs. There are five obvious possibilities: (1) additional household saving, (2) additional corporate saving, (3) additional government savings, (4) bilateral and multilateral aid and (5) borrowing abroad. Consider them in turn.

Gross household savings as a share of GDP are on the order of 19 to 22 per cent in India, according to the National Statistical Office. This is more than respectable by international standards; it is above the global average, albeit below household savings as a share of GDP in certain other Asian emerging markets such as China. However, household savings rates have been trending downward over time, from closer to 25 per cent in 2011-12 to 20 per cent today. Some officials suggest that the trend decline reflects expectations of continued rapid growth and higher future incomes, prompting additional consumption spending today. This may indeed be the motivation, but it leaves less saving to finance immediate climate-related needs. In addition, there is the fact that Indian households invest heavily in real estate, leaving fewer financial savings for investing in climate-related finance and projects through banks and securities markets.

Corporate saving, in contrast, is stable at 11 per cent of GDP, although it is somewhat surprising that this ratio is not higher in a fast-growing emerging economy. Contrast China in its high-growth period, when corporate savings totalled some 25 per cent of GDP.

A third potential source of finance is government savings. India's public finances reflect the scale of its developmental responsibilities and investment needs. The consolidated fiscal deficit of the general government — combining the Centre and the States — is currently close to 10 per cent of GDP, with the primary deficit (excluding interest payments) around 5 per cent of GDP. General government debt stands at above 80 per cent of GDP. Given these levels, the government's capacity to further expand borrowing, either domestically or internationally, is naturally limited. This highlights the importance of complementing public resources with private investment, international climate finance and innovative funding solutions to meet the country's ambitious climate and growth objectives.



In terms of revenue enhancement, total revenue relative to GDP is a bit below the emerging market median. Eichengreen, Gupta and Ahmed (2024) suggest some modest steps that the government can take to mobilise additional revenues: broadening the tax base, raising property tax, streamlining administration and proceeding with additional digitisation. In principle, the government can also compress transfer payments and limit other current expenditures to free up resources and revenues for climate-related investments.

According to India's Ministry of Finance, international aid has so far financed roughly a tenth of the country's ongoing climate-related expenditures. Looking ahead, the prospects for a substantial expansion in aid remain uncertain. At COP29 in Azerbaijan last year, countries agreed to increase the collective provision of concessional climate finance to developing countries, raising the target from US\$100 billion annually to US\$300 billion (United Nations 2024). It is important to note, however, that this commitment applies to all developing countries collectively, while India's own climate investment needs plausibly exceed this amount on their own.

Another potential avenue is to expand external borrowing. This would likely involve revisiting some of the Reserve Bank of India's regulations on External Commercial Borrowings, which currently set limits on the amount and conditions under which Indian entities can borrow internationally. The rationale for considering this option stems from India's relatively modest external debt, which stands at under 20 per cent of GDP and a current account deficit of about 2 per cent of GDP, well below the 4 per cent level often cited as a risk threshold. While international capital flows can be unpredictable, with sudden stops historically imposing economic costs — including GDP level declines averaging 4 per cent in such episodes (Eichengreen and Gupta 2017) these risks can be mitigated. Careful debt management strategies, prudent external borrowing guidelines and stronger financial safety nets can help safeguard macroeconomic stability. Additionally, developing deeper, well-regulated markets for rupee-denominated international debt over time could reduce currency mismatch risks. Though investor appetite for rupee debt is currently limited, targeted reforms and gradual market development could enhance India's ability to tap international markets in a more resilient and sustainable manner.

From a long-term perspective, foreign direct investment (FDI) represents a more stable and growth-oriented form of external financing for addressing climate and development goals, compared to more volatile portfolio capital. In India, FDI inflows currently average between 1 to 1.5 per cent of GDP. While India has attracted significant global investment in recent years, FDI as a share of GDP has moderated, with gross and net inflows in 2024 at their lowest levels since the mid-2000s. Investors have cited a number of areas where further reforms could help enhance India's investment climate — including streamlining regulations related to land use, strengthening contract enforcement and expanding bilateral investment agreements (Zeeshan 2024). Additionally, while India remains an attractive destination, global investors increasingly have a wider set of opportunities in other emerging markets. That said, India holds considerable potential to mobilise FDI in climate-friendly sectors, particularly in renewable energy, where international partnerships and technology transfers can significantly advance national goals. In this context, there is scope for reviewing sectoral FDI policies — including in areas such as telecommunications, insurance and agriculture — where liberalisation could indirectly free up additional domestic resources for investment in climate-sensitive infrastructure and industries.

In connection with financial resources, a word is appropriate about the limited role of central banks. Following the practice of the European Central Bank, collateral policy can be adjusted to favour green bonds. Regulatory preferences can be extended to commercial banks'



lending for green investments. More radical suggestions (e.g. Ferrari and Landi 2023) include proposals for “green quantitative easing” (asset purchase programs with a preference for or even limited to green bonds). Central banks and the commercial banking system have been used in the past, in India and other countries, to advance the government’s industrial policy strategy. (Under existing rules, as I understand them, commercial banks in India are obliged to extend 40 per cent of their credit to priority sectors, which include renewable energy.) But regulators and other officials have been moving away from these policies of financial repression and directed credit in favour of more freely operating market mechanisms, experience having shown the considerable advantages of the latter.

My own view is that central banks, through their collateral and regulatory policies, can contribute modestly to financing the green transition. But the maintenance of price and financial stability is their bread and butter. Their role in the green transition is necessarily limited and should remain so.

FROM FINANCE TO INVESTMENT

Finally, then, there is the need to channel savings into climate-related investments using markets and incentives. India has the advantage of a substantially sized financial market by international standards. Unfortunately, the corporate bond market remains small, where corporate borrowing, whether for self-standing investments or public-private partnerships, will be important for climate-change abatement. Although the value of corporate bonds outstanding is growing, it could be growing faster. This is, of course, where I came in: Eichengreen and Luengaruemitchai (2005) and Borensztein, Cowan, Eichengreen and Panizza (2008) detail a number of measures emerging markets can pursue to more rapidly grow their corporate bond markets.

A recent speech by the deputy governor of the RBI (Sankar 2022) highlights that retail participation in the corporate bond market remains low; the investor base for corporate bonds is dominated by insurance companies, banks and mutual funds, which does not enhance market liquidity. Limited foreign participation in the corporate debt market has also not been favourable for secondary market liquidity. In addition, ESG funds, which have been operating in the country since at least 2018, have not been especially successful. These have seen net outflows in recent years.

Financial market depth and liquidity are important for investment and economic growth generally, but they are critically important for the green transition in a country like India with extensive climate-related needs.

CONCLUSION

The inescapable reality is that there are no easy answers. India will need to mobilise substantial domestic resources to meet its ambitious climate adaptation and mitigation goals. This effort will require a carefully balanced mix of public and private financing, with private capital likely to play a leading role in supporting the scale and pace of investment needed.

Yet, resource mobilisation alone will not suffice. It is equally important to create the right incentives, regulatory frameworks and financial mechanisms to ensure that these resources are effectively channelled into climate-friendly sectors. The key challenge will be achieving this without compromising other critical investment priorities essential for sustaining economic growth and improving livelihoods. Whether India can strike this balance and turn climate action into an engine for broader development? Time will tell.



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Thoughts on Managing India's Big Investment Push



Donald P. Hanna

UC Berkeley Haas School of Business

INTRODUCTION

India has set a goal of achieving high-income status at its centennial as a sovereign nation in 1947. It has also set a goal of creating a zero-carbon emission country by 2070. Managing these two goals present a variety of challenges in meeting the implied 7.5-8.0% GDP growth per year needed for the first while meeting the sustainability goals of the second. The Indian government has highlighted six transitions involved in these goals each of which entails investment, be that in physical and human capital or in managerial and technological expertise¹: enhanced human capital; increased job creation; increased investment in climate mitigation; deepened and broadened financial markets; more productive manufacturing and agriculture; and more effective fiscal and regulatory support for the twin goals.

In this paper I lay out thoughts on how to frame the issues raised by these transitions with a focus on the macroeconomic and financial sector challenges. Before doing that, I briefly reprise the broad framework for long-run growth that economists have developed over the last seventy years with its attention to saving, capital formation, technological progress, total factor productivity and institutional frameworks. That framework is a useful means of categorising the variety of recommendations other contributors to the work on India's transition a high income and sustainable growth have made (IGIDR, NITI Aayog 2025).

THE FRAMEWORK FOR LONG-RUN GROWTH

Economists thinking on the factors that drive long-run growth revolves around three sets of properties. The first set focuses on the resources needed to produce output, or, equivalently, the income associated with the output. Those factors of production—human and physical capital, land, energy, etc.—need to increase for production to grow. But constraints on the quantities of physical resources limit the growth that can be driven by exploiting resources. So, too, do the consequences of expanded production when that production does not fully account for the environmental and societal costs of the growth. We need a second growth driver, technological progress, to generate the rising productivity needed to wrest greater output from limited resources. Because the ideas embodied technological progress are non-rival, their dissemination is not constrained by others' use of them, but rather by limits to our creativity or the incentives to foster innovation. This last point highlights the third set of characteristics needed to foster long-run growth: the institutional framework



the underpins the use of resources be they human, physical or technological capital and channels their use in a manner that respects environmental constraints and societal aims. Here issues like the strength of individual property rights; the balance between government power and society's constraints on the concentration or abuse of government power; the extent of direct government involvement in production versus its role in creating a fostering growth indirectly through a supportive regulatory environment; a society's attitudes toward openness, toward innovation and change; its capacity to reorganise resources as natural and technological conditions shift, the alignment of private and social or environmental costs all play a role in fostering sustainable increases in production and income. A commonly used measure of the effectiveness of a country's investment is the incremental capital to output ratio, ICOR. It is the change in the capital stock for a given change in output or the inverse of the return in measured in output for a given change in the capital stock. To account for economic cycles, I have calculated India's ICOR using rolling five-year window. The data show a marked climb in India's ICOR since 2012, influenced a by a fall in real GDP growth that outstripped the fall in investment's share in GDP. The results hints that meeting India's per capita income goals will need a both a higher share of investment in GDP, but also a return to the higher output returns that investment generated in India prior to 2012.

From the perspective of national income accounting, faster growth requires boosting either the quantum or the returns to investment, be that in human, physical or technological capital. Higher investment, in turn, requires saving out of current income. That saving must come from either households or firms (private, domestic saving), from government saving (its revenues exclusive of the sale of assets less current spending) or from foreign saving (which equals a country's current account trade deficit). This means any investment transition needs to address the incentives households and firms have to invest, crucially the real interest rate.

Government fiscal policy matters as it affects government saving, government investment and the incentives for firm and household saving/investment. Lastly, addressing foreign saving means thinking through issues concerning the real exchange rate and capital flows.

Having laid out the broad strokes of the economic framework that encompasses long-run growth, I turn to specific recommendations that focus on the macroeconomic and financial sectors given my experience and expertise.

MACROECONOMIC CHALLENGES: HIGHER INVESTMENT & SAVING

Growing per capita income to current advanced country levels by 2047 while meeting India's zero-carbon climate commitments cannot be done by following the growth/resource strategies of today's high-income countries given the unsustainable resource utilisation that characterised income growth in those countries. Sustainability imposes the need for processes that are generate less waste, use more renewable, recyclable resources and that are less resource intensive.

Implementation of these new production techniques will require greater investment, not just in the new structures/equipment and processes needed, but also in retrofitting older investments and making new investments in climate mitigation. For every year over the coming quarter century, estimates of the magnitude of these additional investments range from 2% to 5% of GDP above the share of investment in GDP that India has managed in recent years (Nageshwaran 2024). The Chief Economic Advisor to Prime Minister Modi puts the needed aggregate investment share in GDP in the range of 33-38% of GDP (2024) as against an average of 29% over the five years to FY2024 excluding Pandemic-affected FY21.

Such increases in investment in GDP have been orchestrated in only a handful of countries outside of some island nations over the last seventy years. Here I will focus briefly on four



episodes. Korea and Malaysia saw sustained increases in investment as a share of GDP until the Asian Financial Crisis of 1997/98 that ended the 35-year rise in investment in GDP (Figure 2). Perhaps the most notable story of sustained, rising levels of investment in GDP is that of China. Most importantly for this paper, India itself has already produced a surge in investment's share in GDP with the dismantling of the License Raj (Figure 1). We look at each of these surges in turn for clues to what strategies India might follow to reignite its investment surge.

KOREA & MALAYSIA

The investment surge of Korea and Malaysia was part of a growth strategy driven by a focus on exports rather than the more inwardly focused import substitution strategy pursued by India or countries in Latin America in the 1970s (World Bank, 1994). A crucial element of the export-oriented strategy was the focus on efficiency and quality that meeting the demands of external markets created for domestic companies relative to the tariff protections and resultant muted incentive to produce low-cost/high quality goods. The export-oriented option, though, is more constrained today as the world fragments into geopolitical camps.

Furthermore, both Korea and Malaysia sustained current account deficits that at times exceeded five percent of GDP as they drove up investment (Figures 1, 2). That level of current account deficits and the associated foreign debt and capital flows contributed to the Asian Financial Crisis (AFC) and the collapse of investment in both countries, an outcome India has sensibly sought to avoid (citations). Korea's current account deficits were more restrained than those of Malaysia given restrictions the country imposed on foreign direct investment (FDI) along with relatively modest fiscal deficits. The former implied lower investment (if FDI and domestic investment were substitutes). The latter implied a smaller need for either foreign saving or private national saving.

A comparison with Malaysia is also problematic given the country's smaller share in global trade. Small size relative to the global market allows for larger gains in export shares without generating the same scale of political backlash from domestic competitors in export markets. While India's share in global exports is comparable to that of China in the 1980.

Figure 1: Investment Shares in GDP; Korea & Malaysia

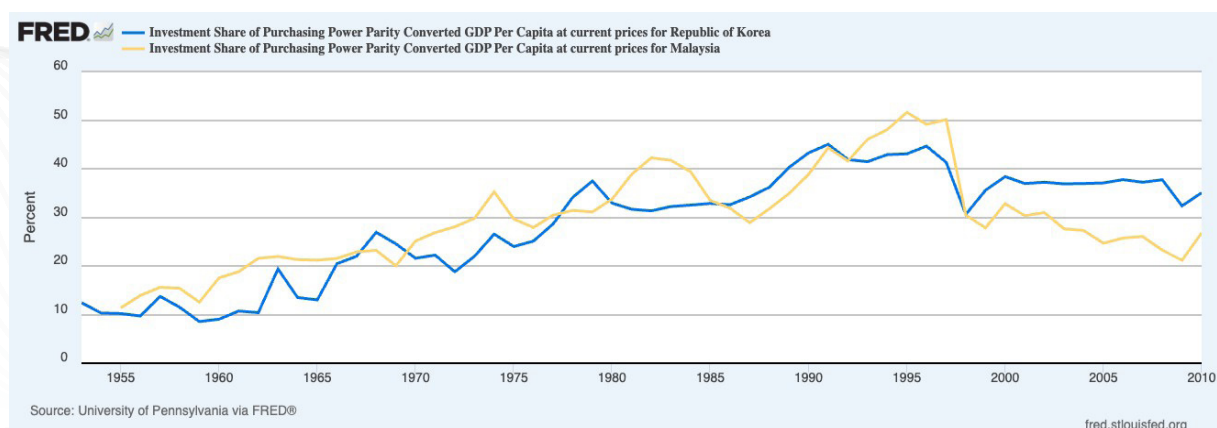
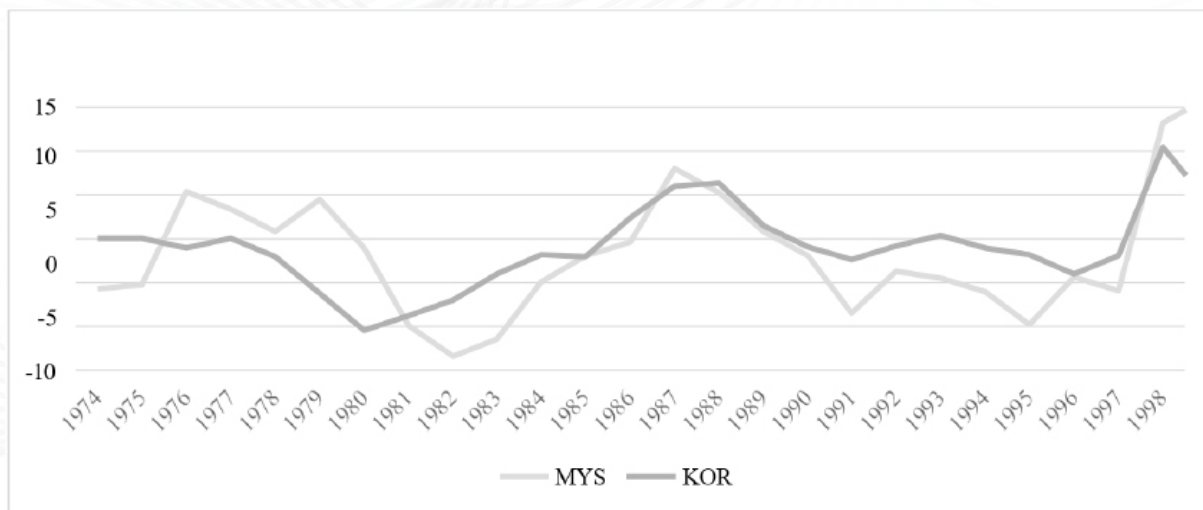




Figure 2: Korea and Malaysia Current Account Balance (% of GDP)

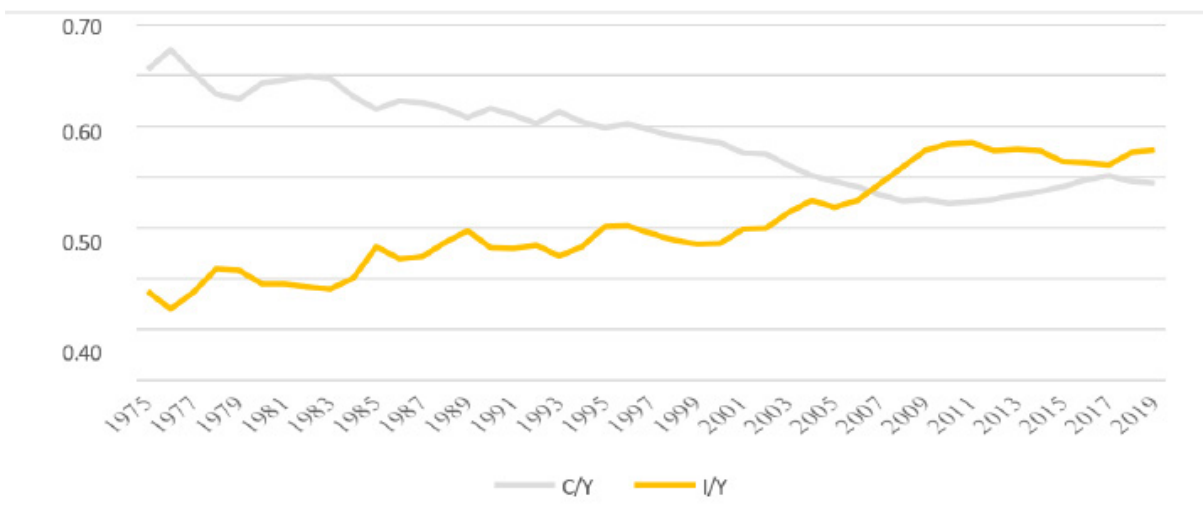


Source: Penn World Tables 10.0

CHINA'S INVESTMENT BOOM

China achieved the most sustained increase in investment as a share of GDP, rising from 19% in 1980 to the high 20s during the 1990s, and further climbing to the mid-40s in the aftermath of the Global Financial Crisis (Figure 3). China's investment surge relied initially on reforms that allowed for greater private initiative but refocused on export-led growth in the 1990's (Huang, 2001) and back toward domestic demand after the GFC. In China, the rise in investment came largely from a fall in private consumption's share in GDP, rather than that of government, particularly in the 1990's when the network of social welfare linked to employment in state-owned enterprises (SOEs) was dismantled prompting rising private saving.

Figure 3: China Consumption & Investment Shares in GDP



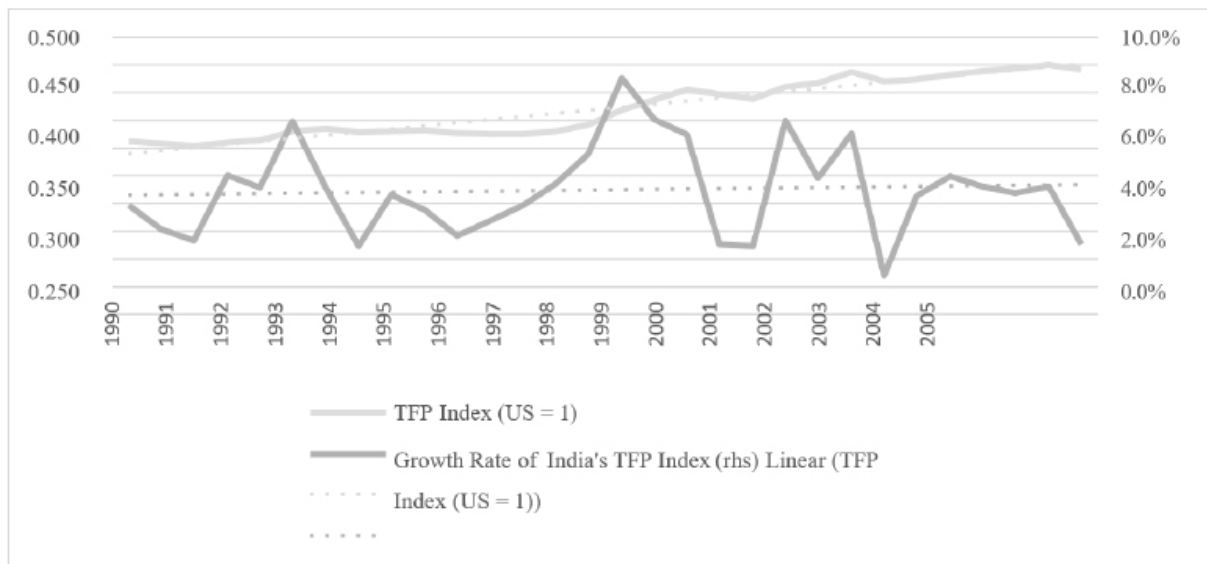
Source: Penn World Tables 10.0



INDIA

India, too, had a surge in investment as a share of real GDP following the dismantling of the License Raj in the early 1990s. Its investment share in GDP that had languished at 14-18% in prior decades, rose steadily from that range to a peak of almost 34% of GDP in 2005. That rise was not based on export promotion, but rather on creating greater flexibility in the use of domestic factors of production as regulations were stripped away and a diminution in the role of the government in directly controlling production (cite sources). Those reform efforts were followed by improvements in India's total factor productivity (TFP) relative to the US that picked up at the turn of the century (Figure 4). The challenge of the moment for India is looking at what margins exist for pushing investment to a share in GDP that would surpass that produced earlier this century and to reaccelerate the pace of growth of TFP.

Figure4: India's Total Factor Productivity Index relative to the US (Level and Annual Rate of Change)



Source: Penn World Tables 10.01 and author's calculations

Exports, the current account and foreign saving

One option is to boost the export orientation of India's economy, the global push toward autarky notwithstanding. Using IMF directions of trade data, India's share in global goods exports was only 2.9% in 2024Q3. While this is a nearly 50% increase in the last few years, it is a far cry from its share in global services trade which is roughly double. A focus on boosting goods exports would benefit India in several ways. First, success would help in its efforts to bolster industrial production and agriculture. India's efforts at getting more integrated into global supply chains is consistent with an export orientation. Greater trade integration with Europe and the US (should Trump's policies of tariff walls recede in future years) would jibe with the friend shoring trend that the US/China geopolitical confrontation has promoted. Given India's historical commitment to the non-aligned movement, a focus on deepening trade ties with ASEAN is a natural objective.

Second, an export orientation could create another rationale for foreign direct investment (FDI) into India beyond access to the local market. Indeed, China's initial efforts at bolstering domestic growth through exports revolved around special economic zones in which foreign companies could produce in China but only for export. Stronger FDI inflows would provide for stickier foreign capital inflows, lessening India's concerns about the risks of a larger current account deficit.



India by policy choice seeks to constrain its current account deficit to 2% of GDP, fearful that a higher value would risk sudden capital outflows that could spark recession. That constraint implies that India's surge investment to 35-38% percent of GDP will need to come largely from national saving. The latest data on India's current account deficit hovering just over 1% of GDP in 2024 and forecast by the IMF to increase to just over 2% by 2029 (IMF, 2025).

Net FDI has tended to run at about 1.5% of GDP in recent years covering a much of the current account deficit. Pushing the flow of FDI to 2% of GDP while expanding the current account to 3% of GDP would imply a much smaller reliance on portfolio flows for the current account than many emerging market countries. It would also lessen the need for domestic savings mobilisation.

Could India push for a larger current account deficit? One perspective is to look at the share of the deficit that FDI could reasonably be expected to cover. As the world's fastest growing major economy, one would suppose that attracting FDI would be relatively easier than in smaller slower growing economies, though investment attractiveness is not slowing about the prospects for future growth, but also about the variety of doing business elements that the World Bank identified in its now discontinued survey. In the last survey (2020) India ranked 63 out of 190, implying significant scope for creating better conditions for both domestic and foreign business in the country through the adoption of policies in use elsewhere in the world.

Another means of judging the riskiness of a current account deficit is to look at the adequacy of a country's international reserves, the cushion that can serve as a temporary source of finance. In the era of closed capital accounts, this was measured in relation to the months of import cover international reserves covered. For India at the end of 2024 was roughly eight months of imports, double the common standard of three to four months. The IMF assesses reserve adequacy with an ARA metric that comprises four main components: export earnings, broad money, short-term external debt and other liabilities. The inclusion of the financial aggregates is designed to reflect the more open capital accounts of countries today. For India, the 2024 reading is 1.14, where the IMF judges 1.0 adequate. In contrast China had an ARA reading in 2024 of 0.67, a function not of the small size of its international reserves, which are among the largest in the world, but rather a higher level of financial assets in China as a share of GDP than most advanced economies. That high level of financial assets is a result of high domestic saving but does constrain China's willingness to allow domestic capital outflows. India's reserve adequacy, although declining would seem to indicate some scope to expand its current account deficit.

Relying on foreign saving independent of the risks of sudden stops to capital flows is likely to be constrained for India because of the global need for higher investment to meet the need to mitigate the costs of rising climate damage as the earth warms. As Helene Rey points out (Rey 2025), while high losses from expected natural disasters increase the avoided costs of making climate mitigation investments today, the commonality of rising costs constrains the ability of countries boost foreign saving to meet their higher investment demands. Ultimately, we live in a closed loop. Hence meeting the needs of higher climate mitigation efforts will need to arise from some combination lowering investment in other areas and from lowering both private and public consumption. Here, the examples of Korea and Malaysia's investment booms are less relevant due to the substantially higher current account deficits they ran during much of their investment boom times.

China's history of the most persistent investment boom with the most persistent saving boom is the only model available. The size of China's economy relative to global GDP and its export share in GDP were comparable to India's in 1980 when China began its market



reform. Today, though, India's share of global GDP and of global exports is substantially larger (Table 1). India's market orientation and role of the state has already been adjusted, leaving the magnitudes of the changes China instituted unavailable. At the same time, India never established the "iron rice bowl" social safety net, dissolution of which helped spur Chinese private saving to replace the diminished safety net. Finally, China's state domination of finance and production with an initially low level of government debt and debt service and the willingness of its trading partners to access China's surging exports are not replicated in India today. That leads us to the issues of domestic finance and fiscal policy as tools for achieving India's needed investment surge.

Table 1: China & India's Shares in Global Exports and in Global PPP-based Real GDP

Year	Export Share of China (%) ^I	World Trade India	Share of Global China	GDP India
1980	0.9	0.4	2.3	3.2
1990	1.8	0.5	4.0	3.3
2000	3.9	0.7	7.4	4.2
2010	10.4	1.5	13.9	5.8
2020	14.7	2.1	18.3	6.7
2023	11.8	2.5	17.3	7.4

Sources of domestic finance

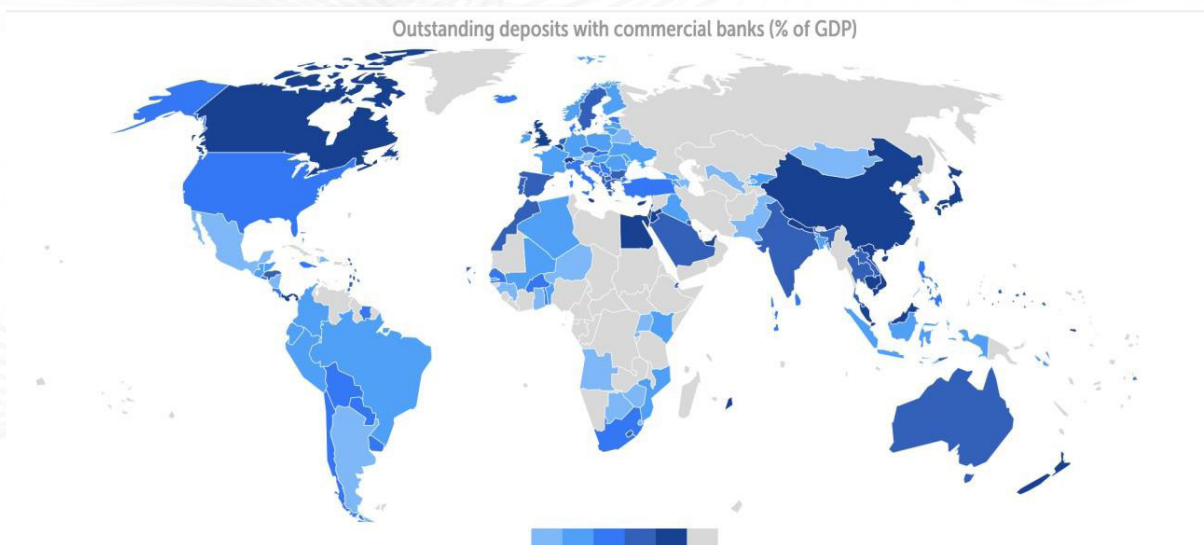
In addressing the issue of domestic resource mobilisation, one needs to address the question of whether planned investment is constrained by the supply of saving or whether the binding constraint is investment demand. If it is the former, then a rise in real interest rate would tend to bolster saving while curbing investment demand. If the latter, the opposite would be the case. Given the premise of this paper hinges on India's need for higher investment conceptualising a world where saving is the binding constraint seems more reasonable.

IMPROVING THE FINANCIAL SYSTEM

Perhaps the easiest way to respond to the issue of desired saving versus desired investment, is to realise that both could be enhanced by increasing the cost efficiency of the financial system lower costs and intermediation margins allow for higher deposit rates and lower lending rates while also fostering a deeper financial system. That is precisely the promise of digital financial technology (fintech) that India's government has helped to advance with its digital stack for payments and, increasing, lending/borrowing. While the number of households with banking accounts has soared, inactivity is an issue as is the size of deposits in the banking system relative to the economy (Figure 6). At 65% in 2023, India's ratio is higher than that of the US, but that is because of the high proportion of capital markets finance in the US. While India's capital markets are growing (Bhatia, 2024), corporate bond issuance remains relatively low. India's bond market revolves largely around central government debt. Subordinate levels of government issuance are scarce as a result in part of inadequate revenue and financial accounting.



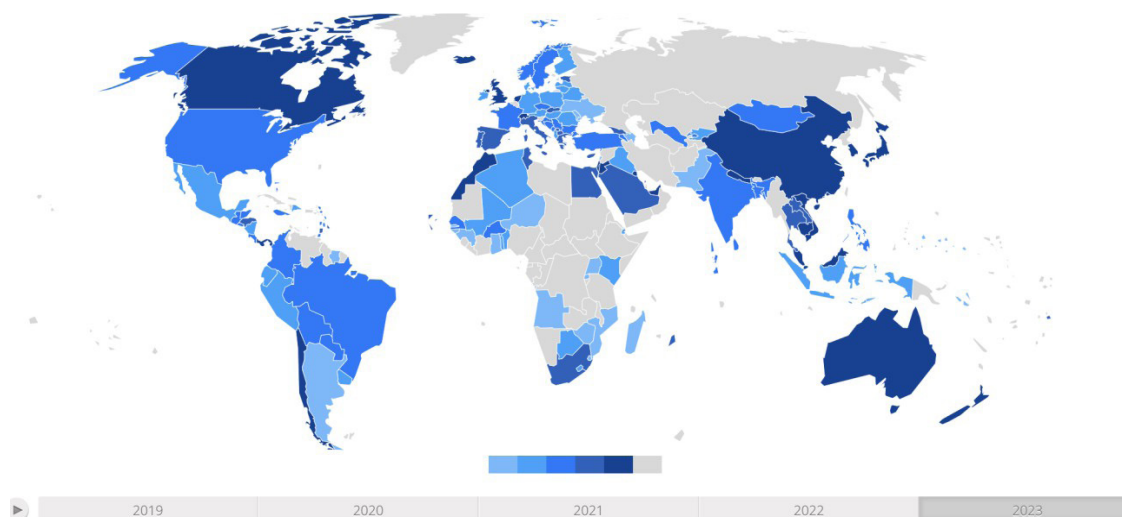
Figure 6: Outstanding deposits with commercial banks, 2023 (% of GDP; India: 64.8%)



Source: International Monetary Fund, Financial Access Survey Database, accessed 14 February 2025

In part to facilitate central government deficit financing India mandates a high level of statutory liquidity requirements that can be met by holding government bonds. That is part of the reason that while 2023 commercial bank deposits are 65% of GDP, commercial bank loans are only 48% of GDP (Figure 7). With saving and issue, lowering the SLR would create more space for credit to flow to the private sector, though likely with a higher risk-free rate as government bond prices would weaken with the shrinkage in demand from banks mandated by the SLR rules.

Figure 7: Outstanding credit from commercial banks, 2023 (% of GDP; India: 48.3%)



Source: International Monetary Fund, Financial Access Survey Database, accessed 14 February 2025

Beyond further efforts to promote greater cost efficiency in banks through broadening competition in banking with digital new entrants, fintech, regtech, etc., financial saving would be promoted through lower cost banking. India's saving out of income continues to have a high share in non-financial assets: real estate and gold. Such saving vehicles are not available for the new investment demands India's transition demands. Generating a larger proportion of financial saving in national saving would be spurred by the greater competition



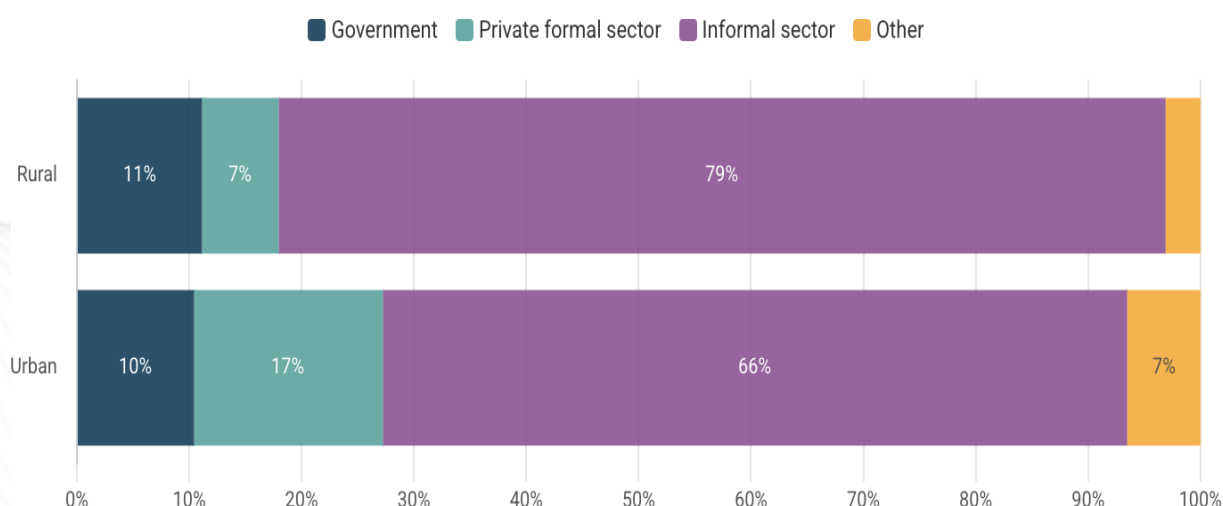
from digital banks providing less costly, more tailored financial products and higher returns to savers.

Using banks as a vehicle for saving also hinges on the quality of the banks' assets and their allocative efficiency (how well they match risk with return). Past non-performing asset (NPA) issues undermine the attractiveness of banks as institutions worthy of holding households' saving. The recommendations of this year's upcoming IMF/World Bank Financial Sector Assessment Paper should prove a useful focal point for promoting greater financial deepening, greater financial inclusion and greater stability, each of which will help with meeting India's investment needs.

GENERATING GREATER SAVING FROM HOUSEHOLD AND FIRMS

Rather than focusing on the process of financial intermediation to boost financial saving, one can focus on the three main sources of domestic saving: households, firms and the government. With the relatively high prevalence of self-employment and SMEs that are often household-based compared to other countries (Figure 8; China by comparison has 55% of its non-agricultural workforce in salaried jobs), engendering saving among these households could make a significant difference to aggregate saving. On the assumption that formal institutions provide jobs with higher productivity and higher compensation (Hasan & Jandoc, 2010), fostering more formal business would promote income and saving. This leads us back again to the impediments to creating, maintaining and dissolving business we mentioned in touching on the attractiveness of India as a destination for FDI. Much of this is linked to revisiting India's regulatory environment, reducing the complexity, time and cost of business operations—cutting red tape—that was at the heart of the reforms of the early 1990s. In India, because of the degree of informality in the economy, spurring formal business formation could have an outsized effect on private saving.

Figure 8: Non-agricultural employment by type of enterprise, India



Source: Periodic Labour Force Survey 2023-2024, National Sample Survey Office, cited by ata for India at <https://www.dataforindia.com/work-employment-in-india/> accessed 15 February, 2025.

Note: Government includes public sector undertakings (PSUs) and autonomous bodies funded by government. The category "Other" includes trusts, cooperative societies, and households employing servants.

An important part of any push to facilitate business would need to focus not just on the ease of formation and of maintaining a business, but also the ease of shuttering business



or acquiring existing ones. Indian industry is characterised by a wide distribution of firm productivity levels within industries, implying inadequate competitive pressures on inefficient firms. Hsieh & Klenow (2008) estimate that the reallocation of existing resources to higher productivity firms would boost India's total factor productivity (TFP) by 40% to 60%. While the data behind these conclusions is not up-to-day, the trends in India's TFP relative to the United States since early in this century are consistent with a continued benefit from resource reallocation (Figure 4). So, too, are the data on India's ICOR. Re-orienting resources to more productive firms would boost output and saving with existing resources.

FOSTERING HIGHER GOVERNMENT SAVING

Tackling the third source of domestic saving, government saving, is perhaps the most controversial because of the trade-offs between fiscal consolidation and growth and the hurdles to reducing expenditures or raising taxes. There is a long-standing debate in India, as in many emerging market countries about the management of the country's fiscal deficit and its rising public debt to GDP (see, for example, Rangarajan and Srivastava (2005) and Das & Ghate, (2021)). The Indian government passed the Fiscal Responsibility and Budget Management Act (FRBM) in 2003 designed to gradually lower both deficits and the debt to GDP ratio. Chinoy, Jain and Sood (2025) have suggested a new framework for managing central and state debt that lowers debt-to-GDP ratios over time, but in a fashion that differentiates targets based on the varying macro conditions of India's states. A government's overall deficit, though, is not its saving.

From the deficit one needs to subtract investment spending less any revenue generated through the sale of assets (capital revenue). Hence, a focus only on the overall deficit can obscure the path of government saving.

Table 2: Key Indian Fiscal Ratios (% of GDP)

Fiscal Year	Revenue Deficit (% of GDP)	Capital Expenditure (% of GDP)	Fiscal Deficit (% of GDP)
2015-2016	2.5	1.8	3.9
2016-2017	2.1	1.9	3.5
2017-2018	2.6	1.8	3.5
2018-2019	2.4	1.7	3.4
2019-2020	3.3	1.7	4.6
2020-2021	7.3	2.2	9.2
2021-2022	4.4	2.5	6.7
2022-2023	4.0	2.7	6.4
2023-2024	2.8	3.1	5.8
2024-2025	1.9	3.4	4.8
2025-2026	1.5	3.4	4.4



To meet the macroeconomic objective of both higher investments in GDP and a manageable level of public debt to GDP, India's fiscal focus will need to fall on current spending and revenue. Like the private sector, on the margin the deficit on current spending will need to fall to accommodate a larger amount of government investment. This is a policy that India's government has been pursuing and that is embedded in its newly announced 2025-26 budget (Table 2). With the heightened need for investment, this trend will need to persist. Given the need for improved education and health to promote a more productive workforce (which would complement greater formal employment), current expenditures in those areas will need greater prioritisation. A guiding principle might be one focusing current expenditure on areas that enhance human capital rather than consumption.

The degree of further shrinkage in the revenue deficit will depend on the balance between India's government borrowing rate and its growth rate. This implies a positive feedback loop between reforms designed to promote more efficient financial intermediation and the attendant possibility of a higher risk-free rate (government borrowing rate), a higher deposit rate but little change in lending rates. Comparing the net interest margin (NIM) of US banks (3.55% in mid-2024) to that in India, improved cost effectiveness in India could shrink India's NIM by XX percentage points.

Another avenue for creating more space for investment without necessarily limiting current deficits or debt-to-GDP may arise from a more holistic presentation of the Government of India's (GoI) balance sheet. By highlighting not just government liabilities, as occurs with the preoccupied but also assets and net worth, along with the potential for future taxes, investors' attitudes toward a given level of debt-to-GDP would be based on sounder footing. Were the GoI to propose a phase-in of carbon taxes linked to greater investment in climate mitigation investments, it might create expectations of future taxes that could diminish the need for fiscal adjustment today.

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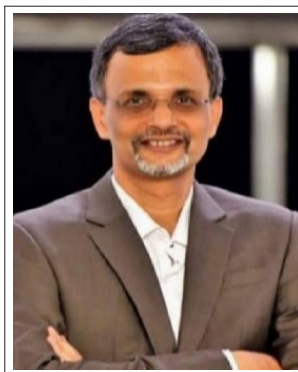


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Critical Transitions and Investment Strategies for India's Growth by 2047



Dr Anantha Nageswaran,

Chief Economic Advisor (CEA), Government of India.

INTRODUCTION

India stands at a historic juncture, poised for a transformation that could see it emerge as a developed nation by 2047. The article underscores the scale and complexity of India's economic transformation, emphasising the need for coordinated efforts across multiple sectors and levels of government.

India has undergone a remarkable transformation in the three decades since economic liberalisation. From a modest USD 300 billion economy in 1993, it will be larger than a USD 4 trillion economy by the end of the current fiscal year. Similarly, over the past decade alone, India has experienced a series of rapid and unprecedented transitions that have set a strong foundation for future growth. The country has achieved what took other nations decades in a few years. For instance, financial inclusion expanded across the country in just eight years, a feat that typically takes nearly half a century elsewhere. The development of a robust digital payment ecosystem, debt management of the COVID-19 pandemic, and significant improvements in public service delivery and infrastructure have all contributed to this momentum.

The success of the past now needs to be sustained with forward-looking policy design. The measures and tailwinds that have carried us this far may not be able to do so in the coming decade. The global economic landscape is undergoing a structural reordering, signalling the ebb of an era defined by seamless globalisation and liberalised trade. In its place, a more fragmented and cautious world is emerging—one where protectionist instincts, recalibrated supply chains and intensifying geopolitical rivalries are reshaping the terms of engagement. Advanced economies that once championed open markets are now turning inward, seeking to fortify domestic capacities and reduce overdependence on transnational value chains.

This pivot is not merely a cyclical adjustment in the aftermath of pandemic-induced disruptions; it marks a secular shift with profound implications for developing economies like India. The contours of global integration are being redrawn with national security, technological sovereignty and resilience at the core. For India, this altered milieu presents both constraints and catalytic opportunities. Amidst all this, India must navigate a series of profound, overlapping transitions – each demanding targeted investment, policy reform and institutional innovation.



CRITICAL TRANSITIONS FOR THE FUTURE

Education and Skilling

With over 60 per cent of its population under 35, India can reap a significant demographic dividend - provided it can create sufficient quality livelihoods. That can be either through employment or entrepreneurship. Current estimates suggest that India must generate 8 million non-farm jobs annually until 2036, absorbing both new labour-force entrants and the continual migration of workers from agriculture. This challenge is compounded by uneven regional development, technological disruption from automation and Artificial Intelligence, and emerging skill mismatches.

Addressing these challenges will require an evolution in our education and skilling methods. Despite the progress made, only about half of young Indians are currently deemed employable by independent assessments. This gap is as much about mismatched curricula as it is about pedagogical quality. In an economy straddling multiple sources of demand for skilled labour, training programmes and the education system must be finely tuned to sectoral demands. This calls for a three-pronged approach. First, industry-integrated curricula must be co-designed with corporates and utilities involved in highways, ports and energy, ensuring that technical skills are imparted at scale. Second, a network of regional Skill Innovation Hubs - housed within existing polytechnic colleges - should deploy modular, competency-based courses that can be rapidly updated as technologies evolve. Third, digital platforms must be leveraged to map out individual aptitude to guide students towards specialisations with the steepest demand curves, thereby reducing dropout rates and underemployment.

The core consideration here is that all of this needs to be achieved within a limited window of time, as the favourable age distribution of the population may not last for long. According to the United Nations Population Fund, the number of elderly people in India doubles every 15 years¹. In practical terms, this demographic transition will elevate the old-age dependency ratio to nearly 20 per cent by mid-century, constraining labour supply and amplifying fiscal pressures on healthcare and social welfare systems. Technical training institutions can partner with healthcare providers to establish opportunities for hands-on experience in home-based care and institutional settings. Investing in creating a cadre of professionals qualified to care for the elderly - spanning geriatric nursing, physiotherapy and psychosocial support - can help mitigate the impending fiscal strain on public health systems. By embedding demographic foresight into skilling interventions, India can convert a looming concern into a source of sustainable employment and social stability.

The urgent need for higher-quality education and a broader range of skills cannot be understated. To convert the fleeting advantage of a young population into an enduring economic advantage, India's strategy must be both swift in execution and broad in scope, integrating demographic realities into every facet of growth planning.

Manufacturing

India's manufacturing ambitions are equally significant. The country aims to develop global market power in high R&D sectors while boosting the growth of its vast micro, small and medium enterprises (MSME) sector. Achieving this requires improved access to finance, more flexible labour markets, better knowledge flows across firms and stronger linkages to external markets.

In future, India's long-term trajectory will be defined by its prowess in technology-intensive domains. The global economy is accelerating into the Fourth Industrial Revolution—an era driven by artificial intelligence, robotics, automation, advanced semiconductors,

¹ India Ageing Report 2023, United Nations Population Fund India. Published June 2023



biotechnology and cleanenergy innovations. India must swiftly deepen its competencies across these frontiers to claim a leading role in this century's growth narrative. Encouragingly, the Production Linked Incentive (PLI) scheme has already begun to bear fruit. India has moved toward self-sufficiency by nurturing a fully integrated domestic value chain for air conditioners under the white goods PLI. At the same time, the telecom PLI has driven a 60 per cent import substitution. Parallel PLI programmes in solar photovoltaics, battery storage and electric vehicles strengthen manufacturing ecosystems and reinforce India's energy security.

Sustaining this momentum demands an industrial policy that judiciously balances labour and capital deployment. India's youthful demographic profile obliges us to prioritise labour-intensive pathways that deliver broad-based employment and social cohesion. Yet this imperative must coexist with a deliberate push into high-tech sectors. Far from pitting one model against the other, technology-intensive industries should augment labour-driven growth, enhancing output quality, logistics and supplychain resilience without wholesale job displacement. Further, Indian states that are further ahead in the GDP ladder can pursue relatively capital-intensive and scale-based growth. In contrast, states still lower down the ladder can focus on labour-intensive growth. However, either approach will require extensive deregulation to make doing business in India a breeze.

India may have made significant progress in the last few decades from the license-control-permit regime that prevailed earlier. However, it is a journey and not a destination. One has to keep running to stay in the same place and run faster to get ahead of the game, as those who benefited from the earlier regime will not reconcile themselves to the new hands-off regime. Therefore, believers in the government getting out of the way of legitimate economic activity must be in action mode always.

Technological tools enable administrators and regulators to engage in surveillance and supervision and punish offenders. Therefore, laws, rules, regulations, and enforcement need not subject the majority to oppressive inspection and compliance regimes. There is still considerable scope for lightening, eliminating rules, regulations and compliances, and exempting certain classes of enterprises from those that remain. Responsibility lies as much with state governments as with the Union government. If this becomes a top policy priority and endures, entrepreneurship will flourish and manufacturing will gain strength.

Energy Transition and Energy Security

Another major transition involves climate adaptation and energy security. India's economic trajectory is inextricably linked to the quality and cost of its energy supply, and the lessons from advanced economies underscore the perils of hasty decarbonisation. In many Western nations, the abrupt retirement of conventional power plants without fully matured renewable alternatives has precipitated deindustrialisation and elevated electricity prices, undermining competitiveness. Europe's recent energy crisis, exacerbated by geopolitical shocks and policy miscalculations, is a cautionary tale: energy security cannot be sacrificed on the altar of rapid transition.

As Javier Blas said in a recent Bloomberg article, 'Electricity realism is not climate denialism.'² REDEIA is the global transmission system operator. In 2024, it had revenues of about EUR1.6 billion. It is based in Madrid, Spain and has a significant presence in Latin America.

Their Annual Report Cum Financial Accounts for 2024³ highlights the increasing risks in incorporating more and more renewable energy power generation capacity in the system:

² See <https://www.bloomberg.com/opinion/articles/2025-04-24/energy-security-it-s-electricity-realism-not-climate-denialism>

³ See <https://www.redeia.com/en/publications/financial-information/annual-accounts-2024>



- i. The increase in (renewable) generation facilities with an installed capacity below the system operator's observation and controllability threshold entails greater uncertainty because there is no way of reliably knowing how much power they produce, which poses a risk to the secure operation of the electricity system.
- ii. The high penetration of renewable generation without the necessary technical capabilities in place to keep them operating properly in the event of a disturbance (small generators or self-consumption generators) can cause power generation outages, which could be severe in some cases, thus disturbing the generation-demand balance and significantly affecting the supply of electricity.
- iii. The closure of conventional generation plants, such as coal, combined cycle and nuclear (in response to regulatory requirements) leads to a reduction in the firm generation and balancing capacities of the electricity system, as well as its strength and inertia.

In the context of the recent power supply blackout in Spain-Portugal-France the above risks assume a much higher salience than before.

Our strategic imperative, therefore, is a phased, technology-inclusive transition that aligns with India's growth ambitions. Renewable capacity must expand, but not at the expense of prematurely decommissioning baseload assets. Pragmatism must also guide our approach to storage solutions and critical mineral access while mobilising domestic resources and international climate finance to bridge investment gaps.

Achieving this goal is going to be expensive, and it is estimated that India will require an estimated \$1.4 trillion in investments, averaging \$28 billion annually, to meet its Net-Zero ambitions. Given the climate financing needs confronting us, we need to exploit the rapidly growing pool of global green capital from sovereign wealth funds, global pensions, private equity and infrastructure funds. However, the issue is that global capital still chases relatively low-hanging, derisked fruits of investment. Much of the climate finance originates in the developed world and stays invested in the developed world. According to the Global Landscape of Climate Finance 2024 report⁴, EMDEs (excluding China) accounted for only 14 per cent of the total climate finance received, while the advanced economies and China received nearly 83 per cent of the total climate finance mobilised in 2024. Thus, much of the investment available for emerging economies may only exist on paper.

Agricultural Productivity and Food Security

Food security and agricultural productivity also remain at the forefront of India's development agenda. With a large population to feed, India's agriculture sector has achieved self-sufficiency and become a net exporter. Yet, the sector's future potential lies in improving productivity and diversifying away from over-reliance on staple cereals such as rice and wheat, which have significant implications for water tables and soil fertility.

Beyond staple grains, the next frontier is scaling high-value and allied agricultural activities. India's fisheries sector remains undercapitalised relative to its potential, particularly in inland aquaculture. Similarly, horticulture can be turbo-charged by upgrading our cold-chain infrastructure and streamlining farm-to-fork logistics. Dairy stands to benefit from breed improvement programmes, cooperative models reminiscent of Amul's success and expanded value-added processing.

India can knit these diverse subsectors into a cohesive growth engine by allowing market signals to operate with minimal distortion – phasing out restrictive stock limits, easing inter-

⁴ Global Landscape of Climate Finance 2024, Climate Policy Initiative.



state movement restrictions and rationalising export quotas. Reforms that facilitate private investment in contract farming, agritech platforms and post-harvest processing clusters will further catalyse competitiveness, ensuring that agriculture continues to underpin rural livelihoods while driving broad-based economic expansion.

Financing multiple transitions

The transitions detailed above are in no way a comprehensive list, but they do put into perspective the magnitude of the challenge India faces, especially from a resource perspective. As a developing country with limited avenues of raising additional fiscal resources, what matters the most is delivering the highest benefits for the least possible cost. For instance, supporting these transitions requires a substantial increase in investment, ideally raising the investment-to-GDP ratio to between 33 and 38 per cent; however, not just the quantum of investment matters, but also the efficiency. Deregulating the economy will help improve the incremental capital-output ratio and ensure that investments translate into output faster.

Recognising the need for investments across various sectors, the government has taken significant steps to stimulate capital flows. This includes the introduction of Production Linked Incentives (PLI) under the Atma Nirbhar Bharat initiative, a push towards public-private partnerships (PPP) in infrastructure, the creation of structured financing instruments like REITs and INVITS, and the liberalisation of foreign direct investment across sectors, including space and defence.

However, investment in India is a collective endeavour involving urban local bodies, state governments, and the central government. While the Union government has played a leading role in recent years, especially when private and banking sector balance sheets were under strain, the baton must eventually pass to the private sector.

Public-Private Partnerships

First, the financial performance metrics show that the corporate sector has never had it so good. Results of a sample of over 33,000 companies show that, in the three years between FY20 and FY23, the profit before taxes of the Indian corporate sector nearly quadrupled. Further, the corporate profits-to-GDP ratio rose to a 15-year high in FY24. However, private sector investments have not kept pace with the profit growth. Private sector GFCF in machinery, equipment and intellectual property products has grown cumulatively by only 35 per cent in the four years to FY23.

Similarly, an analysis of 408 non-financial corporates that make up the BSE 500 and form 94-95 per cent of the net fixed assets of the index companies over the 2014-24 period reveals that their share of fixed assets (as a percentage of total assets) declined from 66 per cent to 59 per cent. The ratio of net fixed to financial assets declined from 1.95 to 1.49. Given a booming stock market, many corporate sector entities find it convenient to invest their surplus cash in the financial markets rather than in real assets.

There is an incentive compatibility issue at play here. Profits generated today reward executives, but real investments made now will generate returns for future executives. Therefore, putting corporate profits and savings to work towards creating productive assets and nation-building will require a robust public-private partnership to realign some incentives.

India has come a long way since the 2000s. It has matured in PPP implementation in roads, power, ports and renewable energy sectors, underpinned by robust regulatory frameworks and model contracts. It is time for the next wave of PPP in new and upcoming sectors like health, education, warehousing, nuclear energy and other sunrise sectors such as semiconductors. For this, the third P, i.e. Partnership, must be stressed.



Authorities often forget that PPP is not a public and private engagement, like the one done in Engineering, Procurement and Construction (EPC), but a public-private partnership. Despite several policy reforms, the inherent trust deficit between the private and public sectors continues to play spoilsport. Many authorities still believe that the private sector is not a 'partner' but a 'vendor'; they must rein in from making more than expected returns.

At the same time, the private sector continues to seek out projects where all the positives are assured upfront while attempting to shrug away the potential risk of undesirable outcomes. Derisked PPP models get all the traction, while pure PPP often loses out in the push for safety. Similarly, derisked projects should also commensurately earn lower returns, but the private sector wants these projects to earn high returns, which is a contradiction.

A genuine spirit of collaboration and risk-sharing is essential for PPP to succeed. It needs to be understood that the government can, at best, act as a catalyst, creating infrastructure and investment opportunities. Still, the critical success factors need to be strengthened in PPP. Efficacy is demonstrated through execution, and once on-ground projects become successful, more traction will be gained in the market. The government, on its part, needs to have a ready pipeline of investable projects. Suppose authorities, particularly state and local governments, do not develop good PPP models with clear contracts, timely dispute resolution and risk-sharing mechanisms. In that case, private capital will continue to look for safe investment vehicles.

On the part of the private sector, they are expected to bring in the best expertise and the most relevant technology to improve project delivery and performance. However, aggressive bidding and underwhelming delivery forever taint the experience of the public authority towards PPP. They also need to take the initiative and develop investment proposals in economically desirable areas, but less commercially viable areas, since the government already encourages projects in these sectors with schemes around viability gap funding or concessional funding. The private sector needs to leverage its expertise and take initiatives towards nation-building.

Productivity of Investments

As highlighted earlier, the efficiency of capital matters in addition to the quantum of investment. In this context, if we envisage an incremental capital-output ratio of 3.5 to 4, the supply and demand sides of investment productivity must be addressed.

Research by the World Bank suggests that while removing distortions (such as imperfect financial markets, labour market regulations, or taxes) may yield large gains during initial reform periods, once the big distortions have been eliminated, productivity growth is more likely to come from the process of upgrading products and processes within existing firms and sectors, and from new firms.⁵ For instance, nearly 60 per cent of observed productivity growth in China (between 2002 and 2007) was due to improvements within firms through innovating, adopting new technologies and implementing best managerial practices.

Macro data for India reveals that within-firm productivity improvements have remained sluggish between FY20 and FY23. India's R&D expenditure as a percentage of GDP is generally lower than that of emerging economies such as Brazil and China. Importantly, the government takes up more than 50 per cent of R&D investments in India. This is unusual compared to the trend in the rest of the world, where the private sector bears a majority stake of 60-80 per cent in R&D investments. Therefore, the private sector must abandon short-termism and look beyond the rigmarole of routine thinking if investment productivity is to improve in the country.

⁵ World Bank 2024, Unleashing Productivity through firm financing, <https://openknowledge.worldbank.org/server/api/core/bitstreams/68f18b88-b481-598f-b36a-2bcbb4439df7/content>



At the same time, obstacles created by excessive regulations warrant attention. They induce uncertainty through their opaque framing, subjective and arbitrary enforcement, and little in terms of remedies or rectifications. As India seeks to realign itself and reevaluate its strategic dependencies, cultivating an agile and streamlined regulatory regime will secure us a distinct competitive advantage.

WHAT WILL BE THE SOURCES OF FINANCE?

India's credit-to-GDP ratio is 51 per cent, in contrast to Malaysia's 136 per cent and Brazil's 70 per cent. This trend persists despite India's gross domestic savings rate being around 30 per cent of GDP, similar to that of its peer countries. Undoubtedly, the Indian financial system's regulatory competence, crisis management and capital markets microstructure match that of the developed world or even exceed that in several areas. Even so, the looming problem of a low credit ratio requires a re-look at the country's financial plumbing.

To make capital markets purposeful, regulators must balance encouraging socially useful innovations and ensuring financial market stability. Similarly, the private sector must not simply view the financial markets as an avenue for cashing in on the returns from their Private Equity or Venture Capital investments or for the founders and entrepreneurs to secure a profitable exit. Institutional and retail investors must understand that speculative trading is a guaranteed pathway to losses while creating additional uncertainties for the companies whose shares are being gambled on.

All in all, mobilising the required finances is bound to be a herculean task, but not impossible. It requires long-term vision, a firm commitment and confidence in the underlying fundamentals of the Indian economy.

CONCLUSION

In the crucible of the coming decades, India's quest to become a developed economy by its centenary year will be defined less by singular breakthroughs than by the cumulative success of multiple mutually reinforcing transitions. From harnessing the demographic dividend through a world-class skilling ecosystem to rebalancing our agricultural portfolio toward high-value and sustainable crops, from deepening labour-intensive manufacturing even as we scale cutting-edge, PLI-backed high-tech industries, to orchestrating an energy transition that marries energy security, reliability and affordability with gradual decarbonisation—each strand of this strategy must be woven with pragmatism, keeping India's large size and development aspirations in mind. The nation's financial architecture, in turn, must channel our savings into real assets, ensuring that every rupee maximises its incremental capital-output ratio and fosters broad-based prosperity.

Yet underpinning these sectoral imperatives is an equally vital requirement: institutional agility. Regulatory frameworks must be streamlined, dispute-resolution mechanisms accelerated, and performance-linked fiscal transfers established so that state and local bodies become co-architects of growth rather than passive beneficiaries. Equally, corporate India must recalibrate its incentives, shifting from short-term financial engineering toward long-term asset creation, and embrace genuine risk-sharing partnerships with the public sector. Only through a collective realignment, where government, industry and society cohere around a common vision, can India navigate the headwinds of geopolitics, climate change and global reorganisation.

Ultimately, the blueprint for a developed India is as much about mindset as it is about megaprojects. By investing in education, health, energy, agriculture, infrastructure, innovation and governance—and by anchoring each transition in rigorous institutional design—India can convert structural challenges into catalytic opportunities.

In doing so, we will not merely chase a headline GDP figure in 2047; we will lay the foundations for an inclusive and competitive economy.



SESSION 1

Macroeconomic Management and India's Multiple Transitions



Session Chair:
Basanta Pradhan

Director

Indira Gandhi Institute of Development Research (IGIDR),
Mumbai (India)



Speaker 1:
Alicia García Herrero

Senior Research Fellow
Bruegel, Adjunct Professor at Hong Kong
University of Science and Technology, Chief
Economist for Asia Pacific at NATIXIS, (Hong
Kong) Development Research (IGIDR),
Mumbai (India)



Speaker 2:
Niranjan Rajadhyaksha

Executive Director
Artha Global



Speaker 3:
Santanu Sengupta

Chief India Economist
Goldman Sachs



Speaker 4:
Dr. G. V. Nadhanael

Director (Economic and Policy Research)
Reserve Bank of India



SESSION 1

SUMMARY

India is undergoing multiple simultaneous transitions—demographic shifts, urbanization, clean energy transformation, digital proliferation, and evolving saving-investment patterns. These developments offer significant opportunities but also pose complex challenges to sustaining long-term growth and ensuring macroeconomic stability.

Gross fixed capital formation has stagnated, falling short of the level needed to support 7.5–8% annual growth. Investments must increase in scale and efficiency, targeting high-productivity sectors like infrastructure, green energy, and innovation. The demographic dividend, with a rising working-age population till the 2040s, demands parallel progress in education, healthcare, skilling, and job creation to avoid becoming a liability.

Climate change, no longer a distant risk, is already affecting productivity and capital stocks. India's net-zero targets and renewable energy commitments require massive, climate-aligned investments. Urbanization, expected to double the urban population by mid-century, presents opportunities for growth but also risks congestion, informality, and climate vulnerability if not well-managed.

Savings patterns are skewed toward physical assets, and financial intermediation remains weak. Regulatory bottlenecks and risk aversion also suppress corporate investment. Governance issues, inefficient public spending, and low total factor productivity further constrain returns on capital.

India must mobilise capital efficiently through financial sector reforms, long-term instruments, and investor education. Climate and urban planning goals must be embedded in macroeconomic policy. Institutional strengthening, transparent procurement, and improved business environments are vital. Policy coherence across sectors and coordination across government levels will be key to enabling inclusive, sustainable growth. Structural transformation, not short-term fluctuation management, must now define India's macroeconomic strategy.



Some issues on India's macroeconomic management in the midst of multiple transitions



Alicia Garcia-Herrero
Bruegel Hong Kong

A TALE OF TWO CITIES: CHINA VERSUS INDIA IN SAVING-INVESTMENT DEVELOPMENTS

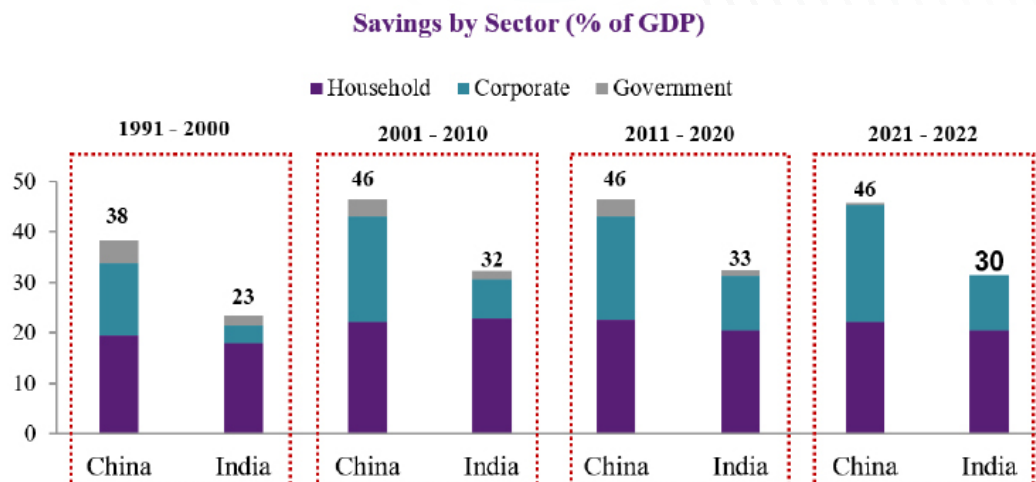
The ratio of investment in an economy is a crucial variable when determining potential growth, but not always more is better. It is also about the return on such investment, which determines productivity gains and, eventually, sustainable development. Over the past several decades, China has consistently demonstrated a higher investment ratio compared to India. Notably, the Gross Fixed Capital Formation (GFCF) as a percentage of GDP, a key indicator of investment activity, has seen a widening disparity between China and India, from a 10 per cent differential between 2001 and 2020 to a 13 per cent differential from 2021 to 2023. While the positive investment differential may be one of the key factors behind China's higher growth rate, it cannot be any more since India's growth is now much higher than that of China. Behind this apparently counteractive investment, there is an important reality for the Chinese economy, namely, overinvestment and an increasingly low return on assets.

Moving to the reasons behind this divergence in investment rates, it is important to analyse the disparity in national savings. China's overall savings rate, as a percentage of GDP, has continuously surpassed that of India by approximately 15 per cent. China's elevated savings rate is predominantly driven by corporate savings, which have long benefited from China's lower-than-equilibrium return on capital. There are a number of benefits from such high long-term saving ratios, such as reduced dependence on foreign capital, even foreign direct investment, which gives countries with high savings, but also with a big market size like China, more leverage to negotiate investment and trade deals with other countries⁶. There are also disadvantages in keeping excessively high domestic savings as they push to either large imbalances, namely large current account surpluses or excessive investment, resulting in overcapacity. The fact that China uses capital controls to keep its excess savings domestically also points to a not-so-positive view of China's macroeconomic situation. In fact, capital controls make it possible to deploy Chinese savings inefficiently without the risk of losing them. For some, this is positive insofar as it allows China to use its savings for

⁶ For example, Ribaj and Mexhuani, 2021 suggests that countries with high national savings rates are less dependent on foreign direct investment (FDI)



industrial policy so as to become more competitive in export markets. The counterargument to this, though, is that using repressed savings to become more competitive equates to subsidising foreign consumption, which might be unsustainable. Against such a backdrop, it is important to note that China's saving rate has come down recently, mostly due to the deterioration of China's fiscal position, but also the need for corporates to reduce excessive leverage.



Source: Natixis, CEIC

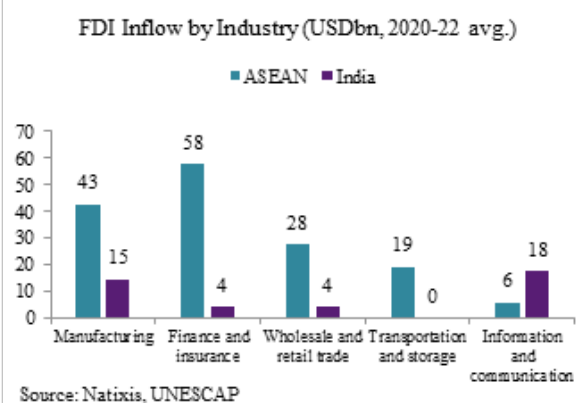
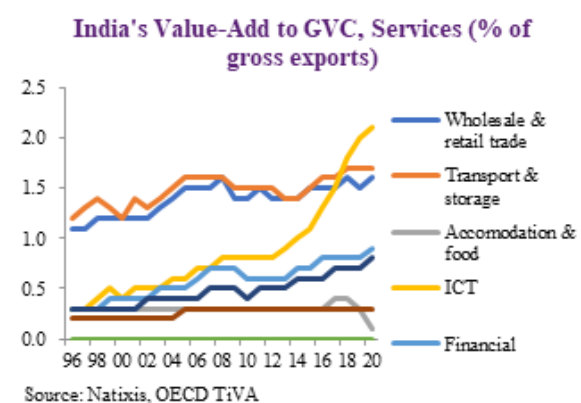
China's current account surplus, which is by now structural, is the result of China's excess savings notwithstanding its very high investment. This surplus is primarily driven by a positive balance in goods, while services remain in deficit. India, in contrast, exhibits a current account deficit, as its savings are not enough to cover the ratio of investment, which is much more moderate than that of China. Still, India holds a surplus in services, which reflects its comparative advantage, while the deficit in goods is substantial. It is the surplus in goods which has helped reduce the current account deficit to a much more moderate level than in the past. India, however, cannot replicate China's development model, which is predicated on increasing savings through lower returns and capital controls. For India, domestic savings alone are insufficient to meet its investment needs. Among the different types of capital that China can attract, FDI is clearly the safest in terms of lower volatility, but also the one that can create more jobs, something extremely important for India with its growing population. Consequently, India must focus on attracting savings from the global market, which necessitates a further opening of the capital account, but also creating a more conducive environment for foreign investment. Given China's growth story and higher equilibrium interest rate, compared to India, India can attract international savings. This approach necessitates a higher equilibrium real interest rate to make Indian investments more appealing to global investors, which, in any event, is possible given China's high potential growth.

INDIA'S INTEGRATION IN THE GLOBAL SUPPLY CHAIN IS IMPORTANT: SOME CONSIDERATIONS FROM CHINA'S AND ASEAN'S CASES

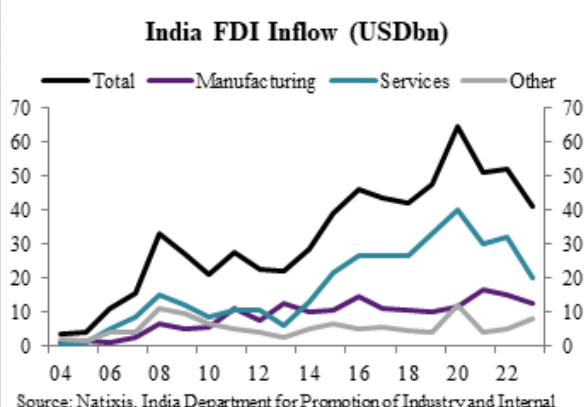
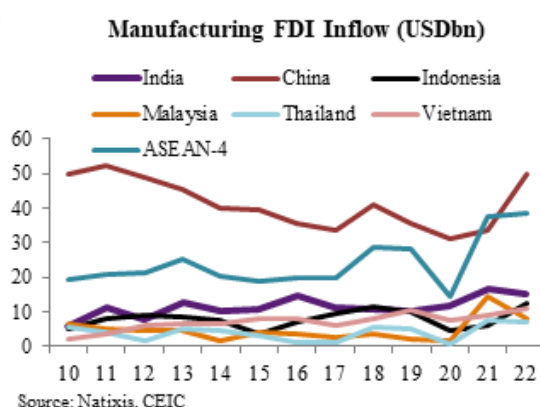
India's integration in the global value chain (GVC) is much less significant than that of China or ASEAN. In the past few years, though, India's integration has increased not so much by raising its value added in exports (forward integration) but rather by reducing the foreign value-added component of its exports (backward integration), particularly within the manufacturing sector. This is quite different from past trends in India, which have been generally dependent on inputs of intermediated goods. Such dependence peaked in 2012.



Subsequently, India's domestic supply chains began to replace foreign value-added inputs, notably in industries such as petroleum refining, metals, chemicals, pharmaceuticals and transport equipment. This progress in import substitution raises questions about the role of high import tariffs, which may have encouraged the substitution with domestic products. Such a trend may risk limiting competitiveness by restricting access to advanced technologies and materials. One important signal that this is indeed what might be happening is that forward participation in GVCs, i.e., its own exports of such intermediate goods, remains limited, particularly in manufacturing, which points to a lack of competitiveness. The stagnation in exports of manufactured goods contrasts with the increase in exports of services, pointing to where India's true competitive advantage is. In particular, the service sector, especially the Information and Communication Technology (ICT) industry, has become the key of India's integration into GVCs and also receives the largest inflows of foreign direct investment (FDI), with an average of USD 18 billion, significantly higher than the ASEAN average of USD 6 billion. This investment underscores India's competitive advantage in ICT services and its prominent role in global digital trade. However, this success is not mirrored in the manufacturing sector, where FDI inflows average USD 15 billion, substantially lower than the ASEAN average of USD 43 billion.



To bolster India's integration into global manufacturing supply chains, attracting more FDI into manufacturing is paramount. Several factors contribute to the current low levels of manufacturing FDI. First, on the geo-economic front, ASEAN countries are better positioned than India within the rapidly globalising landscape centered around China. The geographical proximity and cost advantages in transportation and raw materials have enabled ASEAN countries, particularly Malaysia and Vietnam, to establish robust manufacturing supply chains with FDI from China, Japan and Korea. Second, India's underdeveloped inland transportation and power infrastructure pose significant challenges. These infrastructure deficits are crucial bottlenecks in manufacturing supply chains. Recognising this, India has prioritised infrastructure development through initiatives like the PM GatiShakti National Master Plan, which aims to enhance connectivity across all economic zones. Additionally, India's regulatory environment presents significant hurdles for international trade and investors. The country has maintained a protective stance, reflected in its high effective tariff rates on intermediate goods, which stand at approximately 8.2 per cent, significantly higher than those in ASEAN countries. This protective stance contributes to India's low total trade value of intermediate goods compared to China and ASEAN. Furthermore, India's ease of doing business score ranks among the lowest in the region, indicating the need for substantial regulatory reforms.



To increase the share of manufacturing in India's GDP, several strategic actions are necessary. Firstly, India must lower regulatory and tax barriers to attract foreign players, thereby facilitating greater FDI in manufacturing. Secondly, funding the necessary infrastructure requires better mobilisation of India's savings, shifting from traditional bank deposits to institutional investments in alternatives that can finance infrastructure projects. Thirdly, attracting foreign portfolio flows from long-term institutional investors interested in high-return infrastructure investments is crucial. These investors need to view India as an opportunity for substantial returns, particularly in infrastructure. Lastly, India's urbanisation presents both a challenge and an opportunity. Urbanisation requires massive investment in infrastructure and the creation of millions of jobs annually. Developing the manufacturing sector is key to generating official employment opportunities, thereby supporting sustainable urban growth.

SOME LESSONS FOR INDIA FROM CHINA'S URBANISATION TRANSITION

China's economic growth trajectory has shifted significantly, dropping from a peak growth rate of 10.6 per cent in 2010 to 6.1 per cent in 2019. The subsequent disruption brought about by the COVID-19 pandemic has further undermined economic growth, despite a favourable base effect. This clearly underscores the structural deceleration trend the Chinese economy is going through. China's rapidly ageing population has been perceived as a one driver of this slowdown. In 2016, China embarked on a new demographic chapter with a significant decline in the birth rate. But even before that, China's working-age population as a proportion of the total population had already been decreasing since 2011.

In contrast, the impact of this negative population trajectory on China's economic growth has been offset by rapid urbanisation over the past two decades. Between 2000 and 2010, China experienced a positive population dividend, with the labour force growing annually by 0.53 percentage points, which, however, reverted into a fall in labour supply from 2010 to 2020. The impact of ageing is more pronounced in rural areas, attributed to the migration of working-age individuals from rural to urban regions. While the elderly population has also been migrating to urban areas, their proportionate increase in urban areas is comparatively moderate. In essence, the urbanisation process results in a surge in the urban labour supply, as children and the elderly are less likely to migrate. In fact, despite the decelerating pace of total labour-force growth, China's urban labour force continued to grow from 2010 to 2020, which will help mitigate the negative consequences of ageing on productivity.

Looking forward, the pace of the ageing of China's population is projected to accelerate over the next thirty years, as per United Nations population forecasts. The fertility rate is anticipated to stay low, and the percentage of elderly individuals is projected to soar



from 13 per cent in 2021 to 30 per cent in 2050, with a particular increase among females because of their longer lifespans. Assuming other economic growth drivers remain constant, if urbanisation were to halt, the slightly slower growth of the working-age population from 2020 to 2035 would decrease the growth rate by approximately 0.32 per cent. This, however, is an unlikely scenario as urbanisation in China has been further fostered in the current Five-Year Plan (2020-2025). Conversely, from 2035 to 2050, the negative effects of population ageing on growth will increase significantly, both because the population will age faster and, most importantly, because China will have completed its urbanisation process, having reached an urbanisation rate similar to that of advanced economies (between 70 percent and 80 percent of the population). This is why the full impact of depopulation on growth will only be felt from 2035 onwards, but will be massive, shaving off approximately 1.36 per cent off GDP growth each year.

India can draw valuable lessons from China's experience. First, China's slow urbanisation process, maintained through the hukou system, has allowed for a positive labour contribution to growth even amidst depopulation. For India, avoiding rapid urbanisation and uncontrolled growth of the informal economy is crucial to maximising its demographic dividend. Still, introducing a hukou system might not be the best way to manage migration flows either. China's creation of a two-tier labour market has had unintended social consequences, such as discrimination against migrant workers (Meng and Zhang, 2001), despite its economic benefits. India should be mindful of these social implications while pursuing similar economic strategies.

SOME CONSIDERATIONS FROM CHINA'S ENERGY TRANSITION FOR INDIA

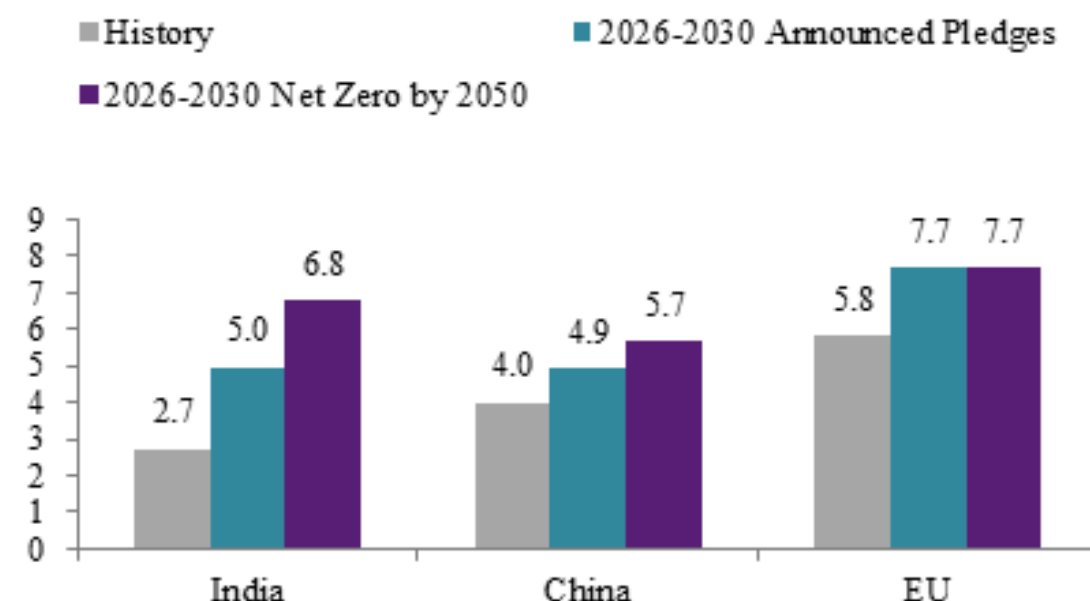
In the global quest to combat climate change, India's role is becoming increasingly significant. As of 2023, India has surpassed the European Union to become the third-largest source of global emissions. This shift underscores a broader trend within developing Asia, where countries now account for around half of global emissions, a notable increase from two-fifths in 2015 and one-quarter in 2000. China, in particular, is a major contributor, responsible for 30 per cent of global greenhouse gas (GHG) emissions, with its total CO₂ emissions exceeding those of all advanced economies combined in 2020 and rising by 15 per cent by 2023.

The Paris Agreement calls for urgent action to limit global warming to no more than 1.5°C, necessitating a 45 per cent reduction in emissions by 2030 and reaching net zero by 2050. In response, during the COP26 summit in 2021, Indian Prime Minister Narendra Modi announced a 2070 net-zero target for India. Meanwhile, China committed to achieving "carbon neutrality before 2060" in September 2020.

Historically, China's total green investment has averaged 4.0 per cent of GDP. To reach its net-zero target, China will require additional annual investments of about 2 per cent of GDP between 2026 and 2030. For India, the challenge is even more pronounced. India's green investment has averaged 2.7 per cent of GDP. To achieve its net-zero target, India will need to increase its annual investments by about 4 per cent of GDP, underscoring a substantial investment gap that demands significant effort and strategic planning. In contrast, the European Union has set a target to achieve net-zero emissions by 2050, with additional annual green investments of about 2 per cent of GDP needed between 2021 and 2030.



Green Investment as Share of GDP (%)



Source: History is 2019-23 Natixis, IEA, Bruegel

However, while China shares a similar green investment gap as a percentage of GDP with the EU, its approach to green transition diverges from the EU's strategy of curbing demand through carbon pricing. Despite the launch of a nationwide emission trading scheme (ETS) market in 2021, China's emission permit prices remain much lower than those in the EU, at only one-fifth of the EU emissions allowance price.

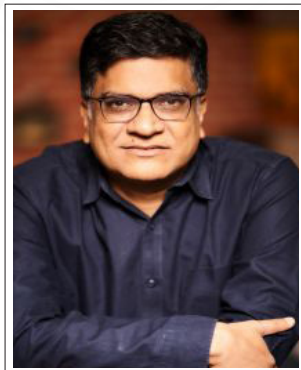
China's strategy for a green transition heavily relies on supply-side dynamics, which have been pivotal to its success. The nation's competitive edge in green products has not only bolstered green financing but also attracted substantial private investment. Revenue from exports to the rest of the world has played a significant role, supported by the increasingly low prices of Chinese green products. However, this approach is now encountering challenges, particularly in the form of overcapacity.

The deepening overcapacity in China's renewable energy sector has begun to erode revenue and profit margins for manufacturers, subsequently discouraging capital expenditure. While the export volume of solar products continues to grow, the pace has slowed, and export values have contracted for two consecutive years due to declining prices. Despite these challenges, China's economic slowdown inadvertently aids its emission reduction efforts. As GDP growth decelerates, energy consumption trends downward, assisting in meeting emission targets.

India can draw valuable lessons from China's experience. First, India's green transition will necessitate substantial and sustained investment over the long term. This requirement will impact the saving-investment imbalance, highlighting the need for increased domestic savings or reliance on foreign savings. Addressing this imbalance is crucial for financing the green transition effectively. Second, while China faces challenges such as increased dependence on export markets and overcapacity, India is currently far from encountering similar issues. This positions India advantageously, allowing it to craft industrial policies that capitalise on its unique circumstances. Unlike China, India can potentially avoid overcapacity pitfalls by strategically managing its green transition investments and policies.



Savings, Investment and Growth in India: Reassessing Macroeconomic Targets



Niranjan Rajadhyaksha

Artha Global, Mumbai, India

It is an indisputable fact that economic growth is tightly correlated with domestic savings rates for countries that are on the development path. The countries of East Asia that successfully completed their structural transformations in recent years are a prime example. Growth accelerations in these countries were accompanied by high rates of domestic savings and investment. For example, savings and investment rates in East Asia and Latin America were more or less the same in 1965; East Asian rates were almost double Latin American ones by 1980. There are important lessons for India here as it sets its eyes on becoming a developed country by 2047, the centenary of our independence.

The usual interpretation of the East Asian growth stories is that higher rates of domestic savings preceded an acceleration in economic growth in each of these countries, or that they “led” to higher economic growth. The causation here runs in a straight line from the former to the latter. However, there is good reason to consider another possibility — those higher incomes from economic growth led to higher savings. The causality, then, is bidirectional and more complicated. In this framing of the issue, savings are at least partly endogenous.

There are several possible channels through which higher economic growth can spur higher domestic savings. Some of it works through distribution dynamics. Modigliani argued in an influential paper that economic growth increases the share of national income of the young relative to the elderly. The underlying assumption is that the young save for retirement while the elderly dissave to maintain their living standard, so a shift in the distribution of national income towards younger workers increases the savings rate at the aggregate level.

Kaldor proposed the idea that the savings rate is dependent on how national income is distributed between the wages earned by workers and the profits earned by firms. The latter have a higher propensity to save. So, a rising share of corporate profits during an economic boom generates more savings. A more behavioural explanation could be that households do not immediately update their consumption plans and firms do not immediately update their investment plans when higher growth suddenly increases their incomes. They hence end up saving more.

The point is that the causal link between savings and economic growth may be more complicated than the simple correlation between these two variables suggests, and has profound implications for a growth strategy. How this translates into Indian reality deserves



more empirical examination. The behaviour of each of the three components of domestic savings — households, firms and government — will matter. The anecdotal evidence is that domestic savings went up (endogenously?) during the two episodes of growth acceleration in India in recent decades, from 1993-96 and 2004-08. Much of this was driven by higher corporate savings on the back of record profits, though government dissaving also fell during these two periods.

The question of what governments should do to ensure that higher incomes get saved is still an important one. Most economic research zeroes in on three main policy lessons for countries that seek to save more to finance ambitious growth plans. First, macroeconomic stability ensures that savers are not hurt because of volatile inflation or interest rates. Second, the presence of some form of social security could change the preferences for precautionary savings. Third, financial market development provides people with instruments for higher financial savings, though there are also fears about financialisation leading to higher borrowings by households.

One intriguing trend is the structural shift in India's savings composition. In the 1990s, nearly 80 per cent of domestic savings came from households or non-financial companies. Over the past two to three decades, household savings have declined while corporate savings have increased. According to the latest RBI data, household savings now account for about 40 per cent of total domestic savings, while corporate savings contribute around 60 per cent, marking a 20-percentage-point shift. This shift raises important empirical questions. Why have household savings declined while corporate savings have risen? The technical explanation would be that retained earnings and depreciation are key components of corporate savings, meaning companies may be reinvesting profits rather than distributing dividends. On the household side, people might be smoothing their consumption by reducing savings in response to economic uncertainties.

However, a more structural interpretation could be that profits are becoming a more significant share of the economy than wages. This trend has implications for both investment patterns and financial intermediation. Relying primarily on corporate savings creates a different economic dynamic compared to a system dependent on household savings. Another significant trend in recent years is the rapid rise in household leverage. The question is whether this represents consumption smoothing or a more fundamental shift in financial behaviour.

Some literature suggests that financial deepening and inclusion should lead to higher household savings, but this is not happening in India. One possible reason is the nature of financial inclusion itself. In the 1970s, when India's banking sector expanded, increased savings were driven by deposit growth rather than credit expansion. However, the current wave of financial inclusion, especially through fintech companies and microfinance institutions been largely credit-driven. This raises the question of whether different forms of financial inclusion have different impacts on savings behaviour.

There is no surprise that the recent economic success of China plays a big role in discussions about the critical savings-investment-growth triad. However, the sort of savings rates that China needed to sustain its rapid economic growth may not be viable in India. That should not mean that India cannot aspire to higher economic growth rates unless the domestic savings rate rises to well over 40 per cent of GDP. South Korea is a good example to follow. Its savings rate was between 32-35 per cent of GDP in its years of structural transformation, not far from what India had in the 2004-08 period. And South Korea never had an ICOR — measured here as the ratio of gross fixed capital formation to GDP growth — of over four between 1961 and 1980. ICOR later rose, perhaps in response to more capital-intensive



industrialisation, but never touched China-like levels. The implicit argument here is that how much economic growth is generated with one extra unit of investment depends on the nature of the investment as well, especially if it is labour-intensive or capital-intensive. One final point. Currently, India operates with multiple macroeconomic targets:

- A 2 per cent current account deficit limit (from Dr. C. Rangarajan's 1993 report)
- A 4 per cent inflation target (from the Urjit Patel Committee)
- A 6 per cent fiscal deficit target (from the Union and state FRBMs).
- An aspirational 8 per cent growth target (which is a minimum required to reach the goal of Viksit Bharat).

Over the past 20 years, India has rarely managed to stay within all these targets simultaneously. This suggests a need to reassess whether our macroeconomic frameworks are internally consistent. Should we adopt a more integrated framework that balances these targets in a more coherent manner? And do any or some or all of these macroeconomic targets need to be recalibrated in an internally consistent manner? One useful starting point may be a consistency accounting matrix that integrates the national income accounts of the CSO, the balance of payments and monetary data of the RBI and the fiscal data of the government, to tease out some of these issues.

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The Indian (Long-Term) Savings Glut

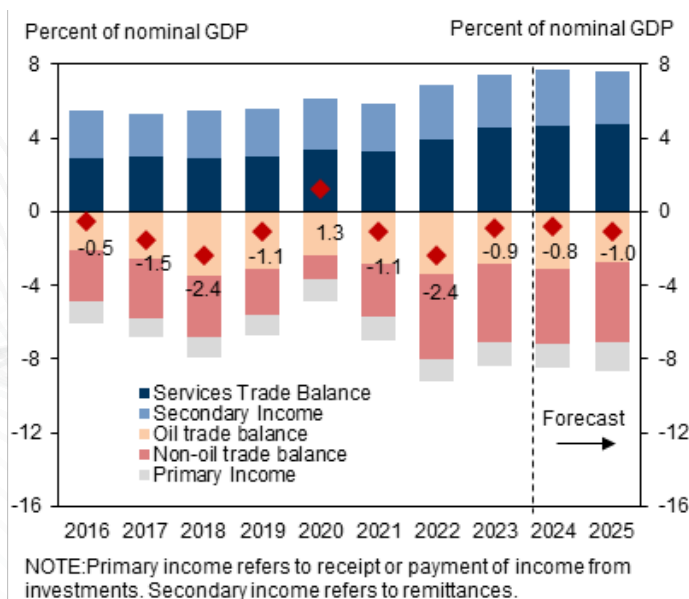


Santanu Sengupta
Goldman Sachs

India's macro-economic stability has significantly improved over the last ten years since the 'Taper Tantrum'. Firstly, inflation, which was near double digits ten years back, is broadly under control with headline CPI inflation averaging 5.8 per cent yoy in the last three years (within the Reserve Bank of India's [RBI] target of 2-6 per cent). The reduction in inflation is attributable to the RBI adopting flexible inflation targeting framework from 2016 and supply-side enhancing measures by the government, which have broadly kept a lid on food inflation (~5 per cent yoy average since 2016).

Secondly, the current account deficit has narrowed (from nearly 5 per cent during the 'Taper Tantrum' to an average of around 1 per cent of GDP over the last two years). India's growing share in services exports globally and net remittances to India from the rest of the world have provided a healthy cushion to the current account deficit (remittances today fund >40 per cent of the goods trade deficit). Further, to deal with external flow shocks, the RBI's strategy, since the pandemic, has been to build FX reserves in the face of capital inflows and draw down reserves to smoothen volatility in the currency, when dealing with capital outflows.

Exhibit 1: Higher services trade surplus and remittances have helped to cushion the current account balance

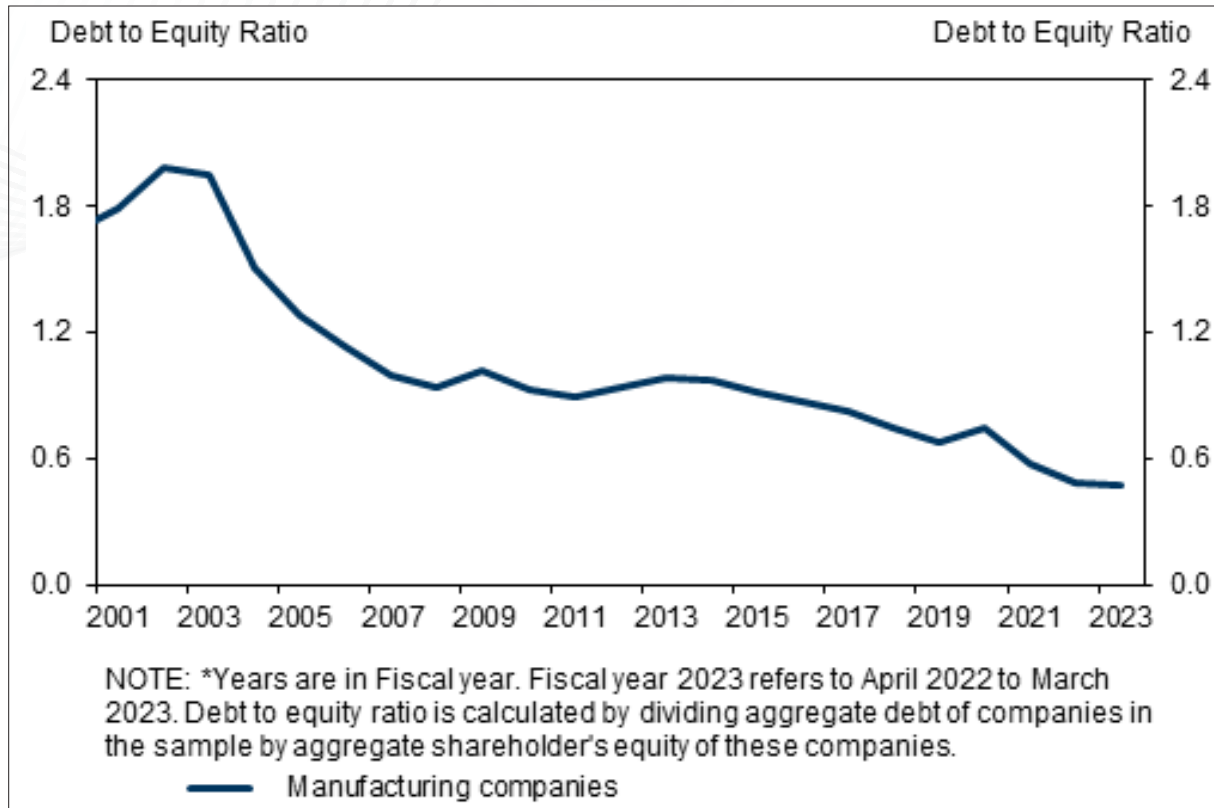


Source: Goldman Sachs Global Investment Research



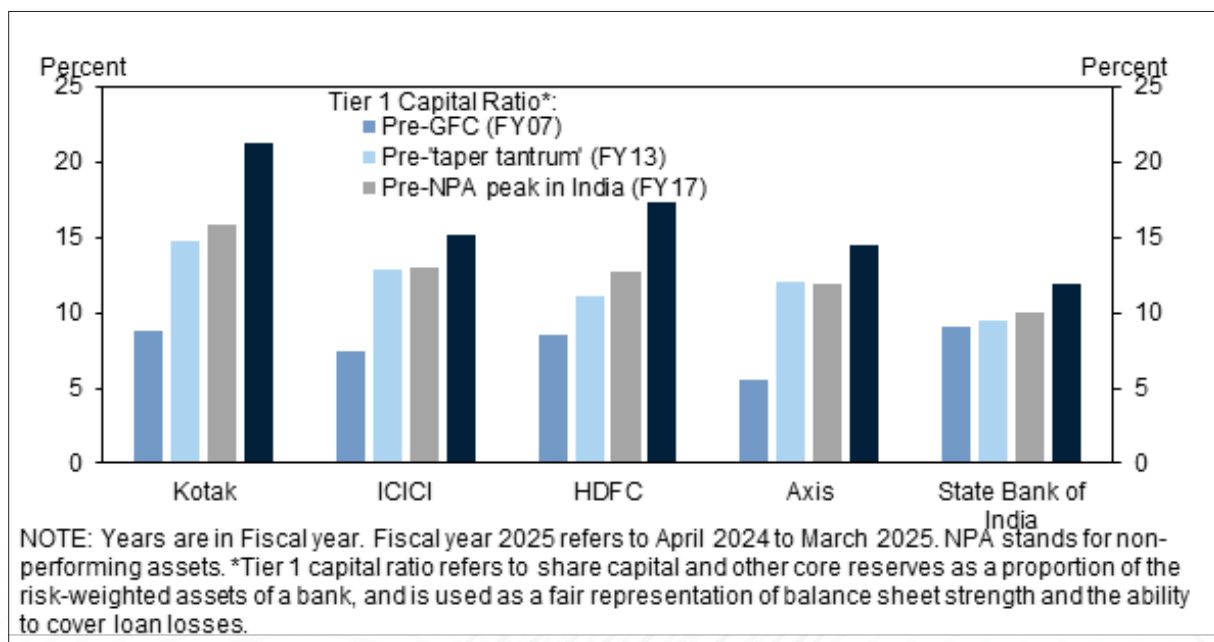
Finally, India's private sector balance sheets have strengthened – India's corporate sector leverage has sharply declined (Exhibit 2), and Indian banks are well-capitalised (Exhibit 3) (large private and public sector banks have more-than-adequate capital buffers), which gives them sufficient headroom to increase lending.

Exhibit 2: Indian corporates have deleveraged during the COVID-19 pandemic



Source: CMIE

Exhibit 3: Major Indian banks have the best capital position since the GFC

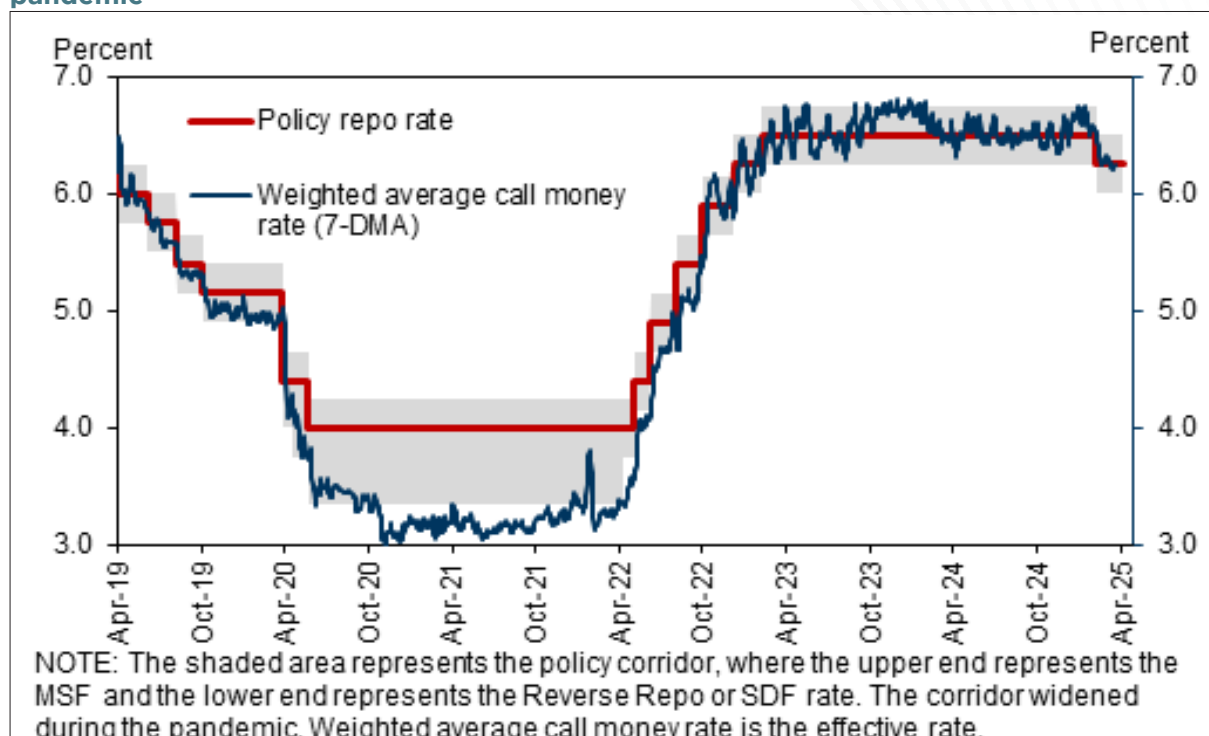


Source: Company Data, Goldman Sachs Global Investment Research



The only aberration to the improving macro-stability story has been India's fiscal position. The central government was consolidating the fiscal deficit in the second half of the last decade, until the COVID-19 pandemic. At the onset of the pandemic, Indian policymakers acted decisively to mitigate the growth contraction through a range of counter-cyclical fiscal and monetary policy measures. The general government's fiscal deficit expanded by ~600bp in fiscal year 2020-21 or FY21 (April 2020-March 2021), and effective interest rates (as measured by the overnight inter-bank rate) eased by ~180bp in CY20 (Exhibit 4).

Exhibit 4: Overnight rates traded at the bottom end of the policy corridor during the pandemic

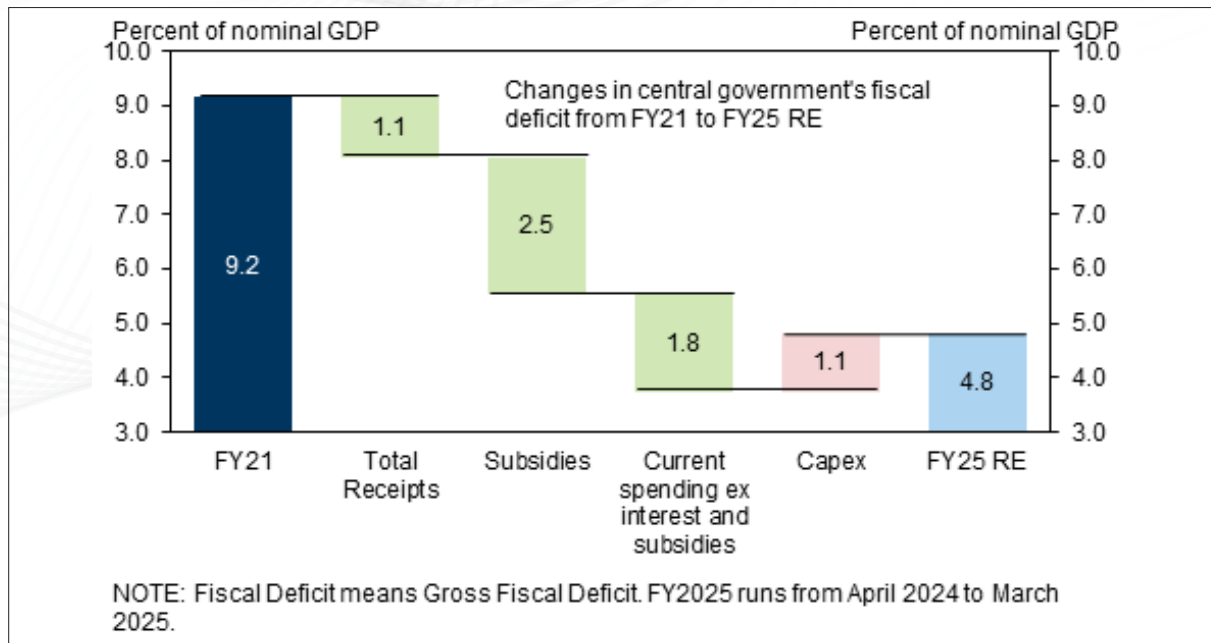


Source: Bloomberg, Goldman Sachs Global Investment Research

However, post-pandemic, fiscal policymakers have been unwavering on the fiscal consolidation path. Amidst the sharp projected fiscal consolidation of 4.4pp of GDP by the central government post-pandemic from FY21 to FY25 (revised estimate), policymakers judiciously re-allocated spending towards capex, thus giving a significant boost to infrastructure investment growth (Exhibit 5).



Exhibit 5: The central government has consolidated its fiscal deficit by 4.4pp post-pandemic

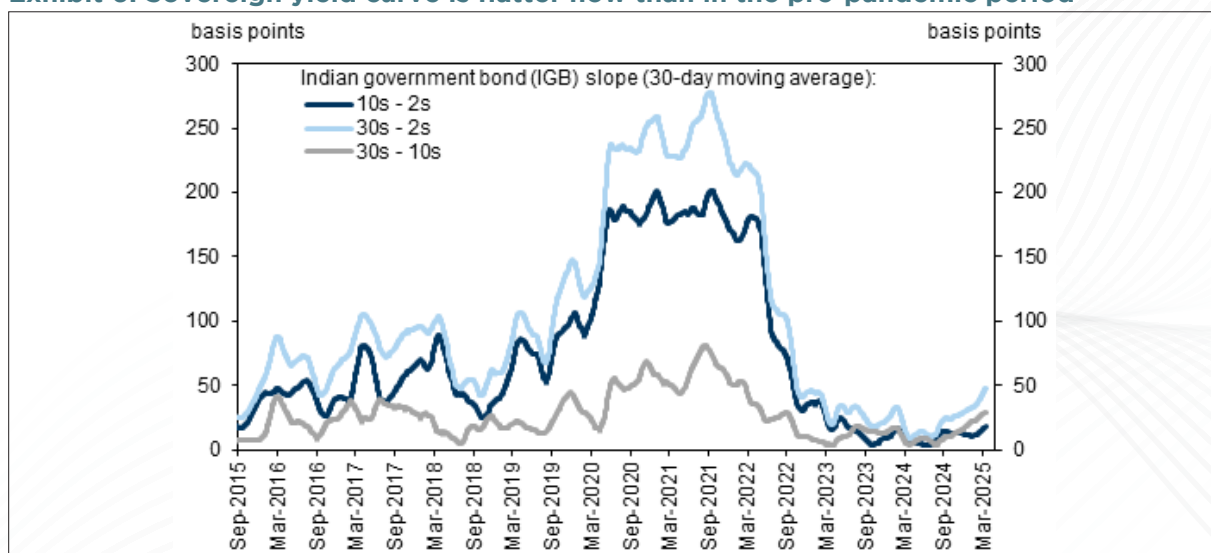


Source: CEIC, Goldman Sachs Global Investment Research

Indian consumers also levered up, taking advantage of easy financial conditions that prevailed post-pandemic, so much so that even after tightening monetary policy by 250bp in the cycle, the RBI had to put the brakes on unsecured consumer lending in late 2023. The combined effect of policy support and pent-up consumer demand boosted India's real GDP growth to an above-trend rate of 8.4 per cent yoy on average during FY23-FY24.

Despite robust growth over the last three fiscal years and elevated general government fiscal deficit, India's current account deficit is the lowest in seven years (apart from the current account surplus year of FY21) at 0.7 per cent of GDP in FY24 (and tracking -0.8 per cent of GDP for FY25). Further, the long end of the sovereign yield curve is quite flat (Exhibit 6), comparing across different tenors (the recent steepness in the yield curve is due to the monetary policy easing cycle).

Exhibit 6: Sovereign yield curve is flatter now than in the pre-pandemic period



Source: Bloomberg



However, if growth is that strong and the government is borrowing that much, why is the current account deficit low and the yield curve relatively flat in India? One explanation for a low current account deficit is the rapid growth in services exports from India, led by the Global Capability Centres (GCCs). India's services exports account for 10 per cent of GDP today, from around 7 per cent of GDP on average between FY16 and FY20, with ~50 per cent of the increase driven by higher business³ and software services exports. The other implication of a low current account deficit is that private investment demand is tepid (according to the national income accounting [NIA] identity, domestic [public and private] savings, net of investments, must equal the current account balance), despite deleveraged corporate sector balance sheets.

WHY IS THE YIELD CURVE RELATIVELY FLAT IN INDIA?

We can decompose the yield on any bond, e.g., the Indian Government Bond (IGBs), into three parts: expected future path of inflation, expected future path of short-term real interest rates and a term premium. The term premium is the extra return that lenders demand to hold a longer-term bond instead of investing in a series of short-term securities. Usually, longer-term bond yields are higher than shorter-term bond yields, implying a positive term premium as bondholders require extra compensation to hold longer-term bonds.

On the term premium, there are two main driving factors (among others): a) investor perception of the risk of holding longer-term bonds and b) changes in the demand and supply for particular tenors of bonds.

Historically, risk aversion among investors has caused the IGB term premium to increase (e.g., the 'Taper Tantrum' of 2013). But over the last ten years, the sensitivity of term-premia to risk aversion is likely to have declined, given India's improved macroeconomic stability and ability to effectively navigate geopolitical risks in an uncertain world. On the changes in demand for bonds, there have been noteworthy shifts in Indian households' saving behaviour, which we discuss in the section below.

Changing composition of household savings in India

There is an ongoing trend of financialisation of household savings in India, where within financial savings, allocations are shifting towards non-banks from banks. This shift over the past several years has been driven by multiple factors: a) financial inclusion (through the universal bank account program of the central government), b) an increase in digital infrastructure (like the unique identification program), c) demonetisation of INR 500 and INR 1000 notes in India in November 2016 and d) product innovation and disintermediation and digital outreach of financial products, among others.

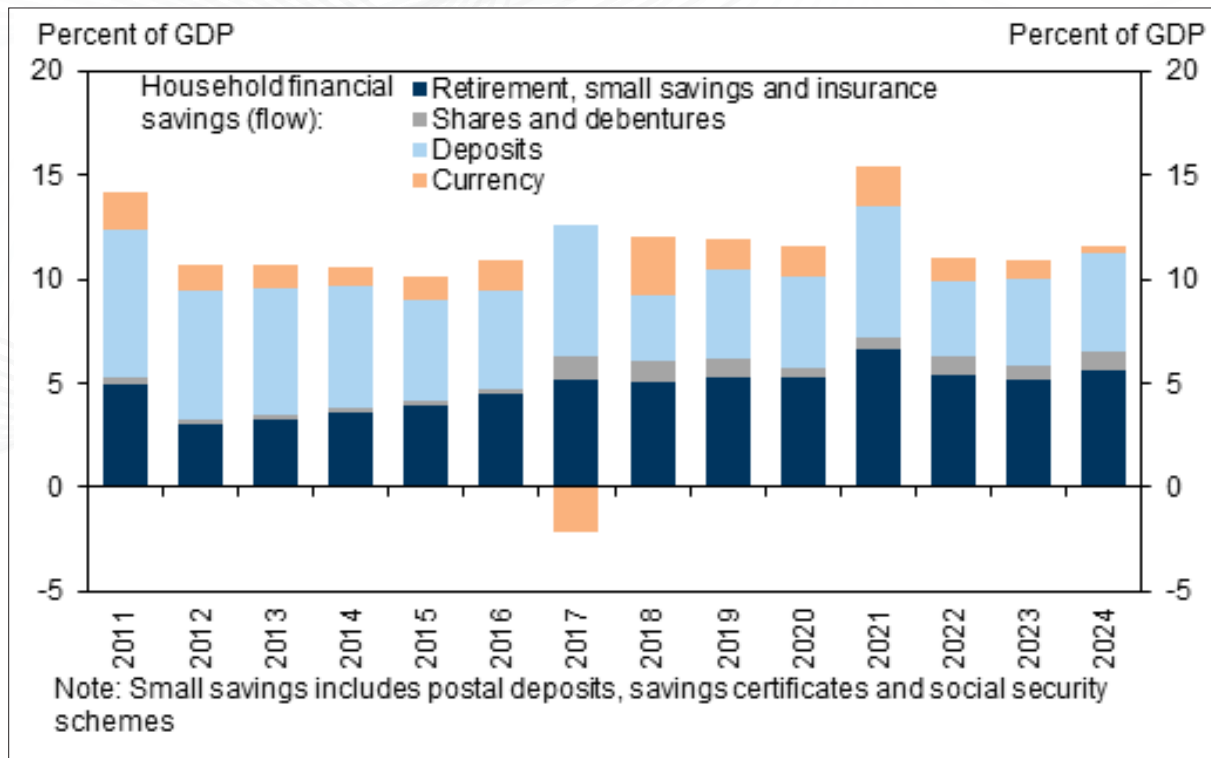
Household financial savings: The shift towards non-bank alternatives

The mix of financial savings has changed from banks to non-bank assets (Exhibit 7) over the last 15 years. As India's per-capita income increased, the allocation towards alternative savings instruments (other than deposits) increased. This was especially observed in retirement savings, partly supported by tax benefits:

- **Decline in bank deposits:** Bank deposits form the highest share in household financial savings, but their share has declined from ~48 per cent on average in FY11- 15 to ~36 per cent on average in FY16- 24 (Exhibit 7).



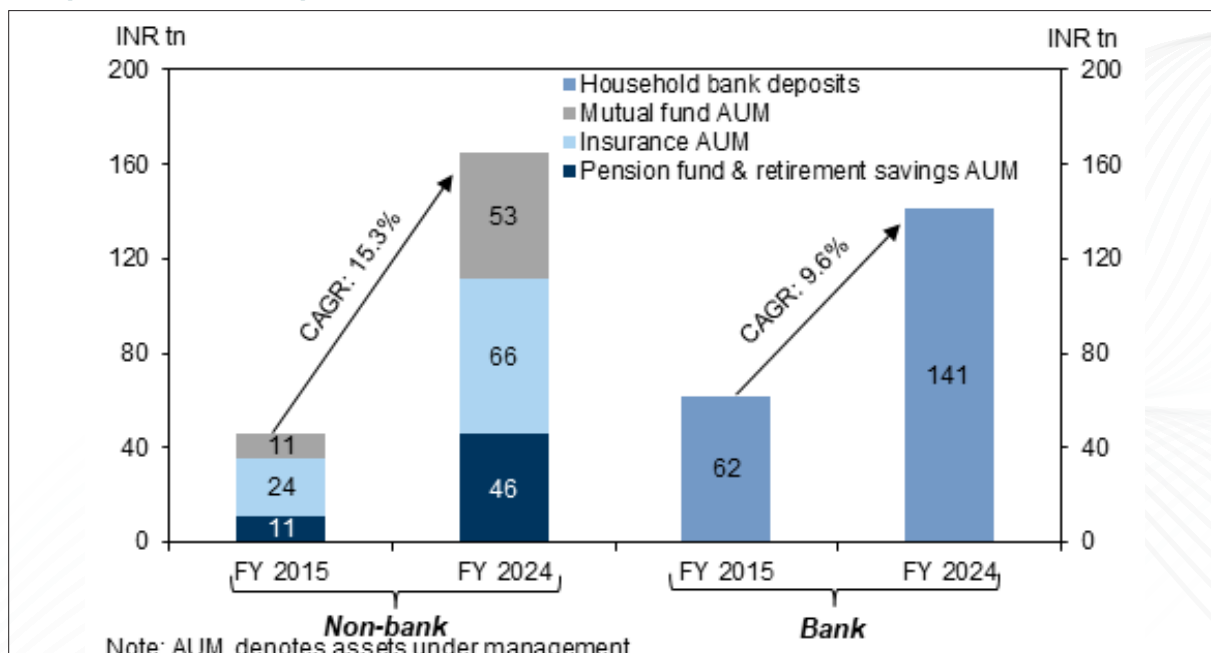
Exhibit 7: The share of retirement savings in household financial savings has increased



Source: CEIC, Goldman Sachs Global Investment Research

- **Shift towards retirement savings:** The share of retirement, small savings and insurance (pension funds, employee and public provident funds and savings in insurance) rose from an average of ~34 per cent in FY11- 15 to ~46 per cent in FY16- 24 (Exhibit 7). The overall AUM of retirement savings, insurance and mutual funds has grown at a CAGR of ~15 per cent, outpacing households' bank deposit growth rate of ~9 per cent over the last ten years (Exhibit 8)

Exhibit 8: Pension, insurance and mutual funds have witnessed faster AUM growth compared to bank deposits over the last decade

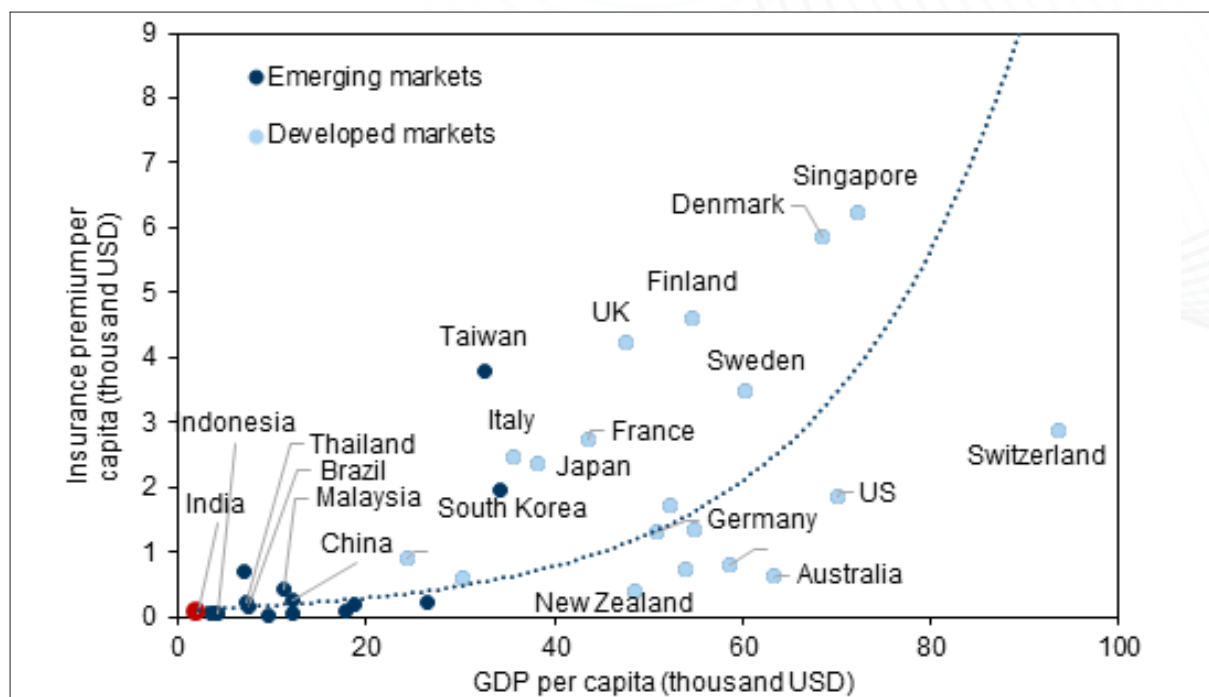


Source: CEIC, Goldman Sachs Global Investment Research



- **Savings in Insurance:** Household savings share in insurance has remained ~19 per cent over FY11- 24. With rising incomes, there is scope for higher allocation of household savings towards insurance in the future (Exhibit 9).

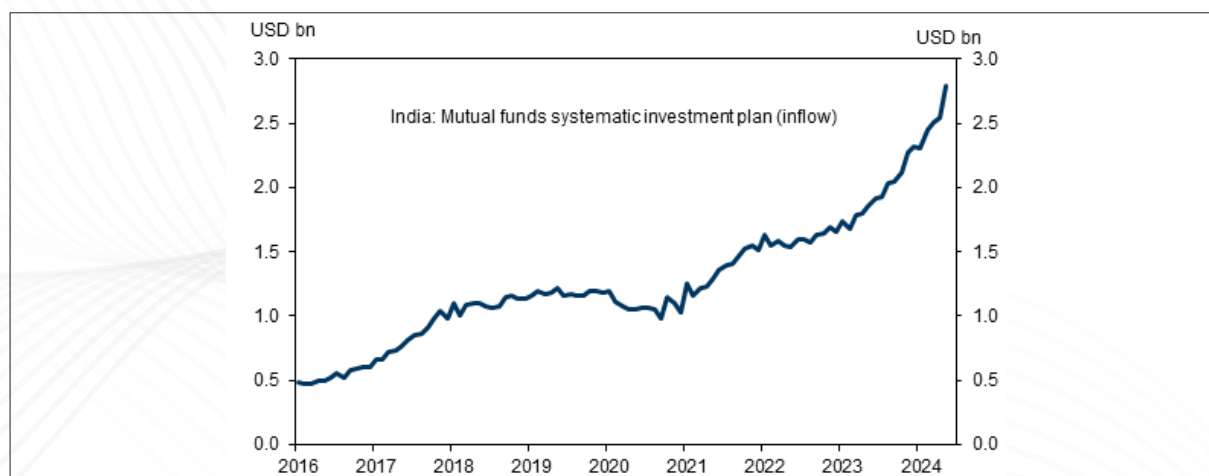
Exhibit 9: Insurance penetration tends to rise with income levels



Source: Swiss Re, Goldman Sachs Global Investment Research

- **A shift towards capital markets:** The share of savings in equity capital markets (shares and debentures) increased from ~1 per cent to 8 per cent over FY05-24, mainly driven by higher allocation to mutual funds (Exhibit 7). The total assets under management (AUM) of mutual funds have increased ~5x over the last decade, driven by a strong inflow of funds through the Systematic Investment Plan (SIP) (Exhibit 10). Retail ownership in Indian equities has risen to decade highs, especially during the pandemic (Exhibit 11). The number of retail shareholder accounts has also risen by ~6.5x over the last decade, with most of the gains occurring after the pandemic.

Exhibit 10: Average monthly retail inflows via SIP have grown to record highs at a CAGR of ~25% over the last eight years



Source: Swiss Re, Goldman Sachs Global Investment Research



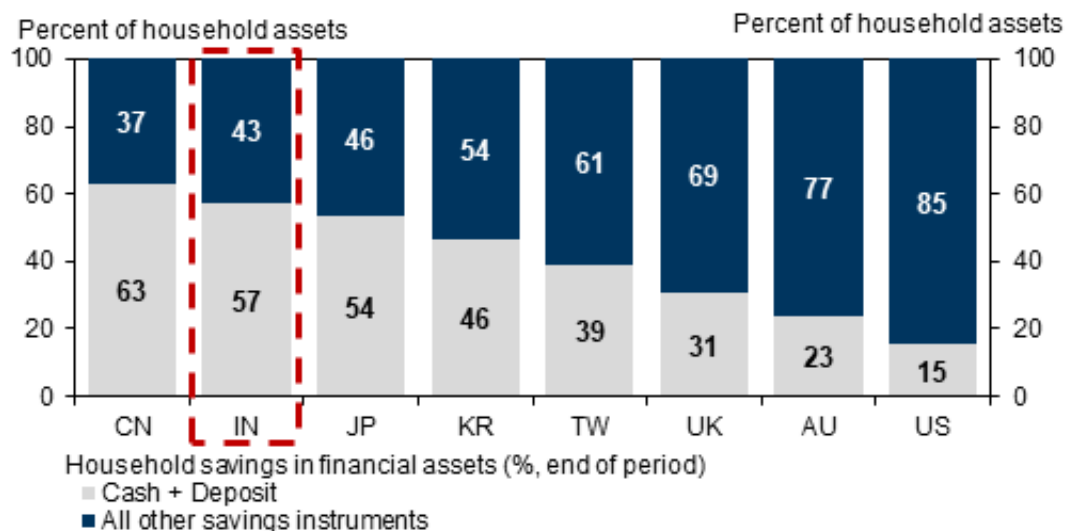
Exhibit 11: Strong retail participation in Indian equities post-pandemic



Source: Capitaline, Goldman Sachs Global Investment Research

Multiple factors like financial literacy (on, say, retirement/pension savings), government efforts towards digitalisation and formalisation of the economy and recent performance of equity markets in India, among others, have resulted in this switch towards saving in non-bank alternatives in recent years. Even then, Indian household savings allocation towards non-bank instruments is well below those in the developed markets and higher-income emerging markets such as Korea and Taiwan (Exhibit 12), which indicates scope for this trend to sustain in the coming years.

Exhibit 12: Indian households' savings in non-bank instruments still well below those in the developed markets and some EMs



Note: i) Data for India is GS estimate as of Mar-2024; ii) Data for China is as of Mar-2024; iii) Data for other markets except Taiwan is as of Dec-2023; iv) All other savings instruments consists of Equity+Mutual funds, Insurance & pension and others; v) Data for Taiwan is as of Dec-2022.

Source: NFID, CEIC, Wind, China Wealth, China Trust Association, Japan Cabinet Office, RBI, Goldman Sachs Global Investment Research

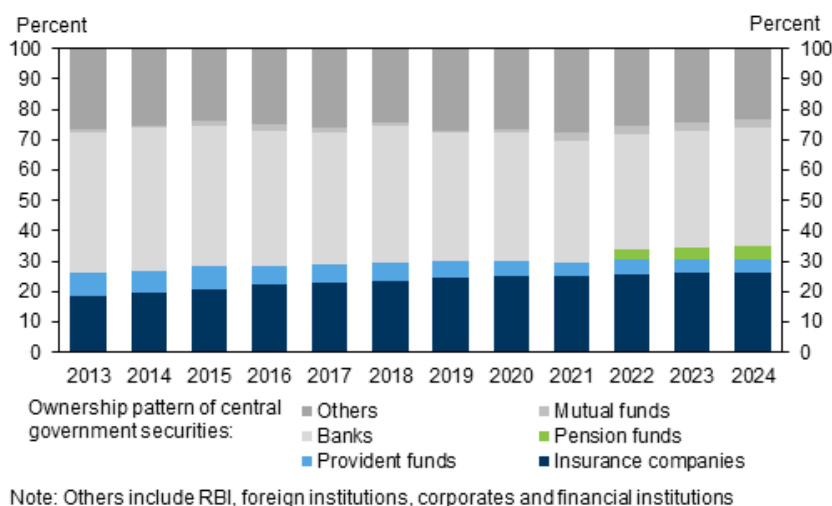


The Indian (Duration) Savings Glut

'Long-duration' investors (i.e., retirement, pension and insurance funds) are buying longer-duration government bonds given their long-term investment horizon. Life insurance companies are natural buyers of long-end bonds, as they strive to match assets with liabilities, which are typically long-dated. Pension funds also typically invest in long-duration government bonds to match their long-term investment horizon. They are also typically less susceptible to immediate withdrawals (unlike mutual funds), which helps manage volatility. Further, insurance companies and pension funds face regulations that effectively require them to hold significant amounts of liquid, safe, government bonds.

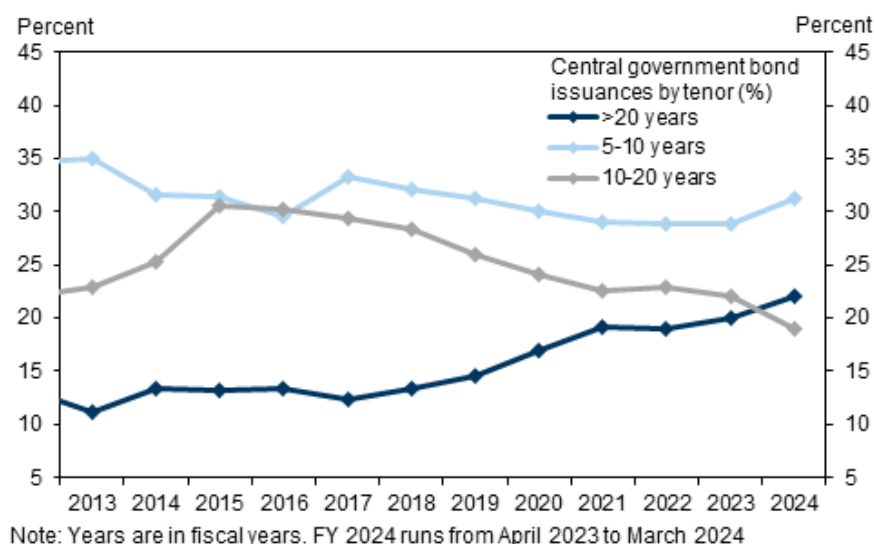
We find that the total holding of government securities by long-term investors (insurance, pension and provident funds) has steadily increased over the past ten years (Exhibit 13). The increase in inflows towards long-duration savings products like insurance and pension funds has been supplemented by larger issuances of longer-dated bonds by central (Exhibit 14) and state governments.

Exhibit 13: Long-term investors, like insurance companies, pension and provident funds, have increased their ownership of IGBs in recent years



Source: Company Data, Data compiled by Goldman Sachs Global Investment Research

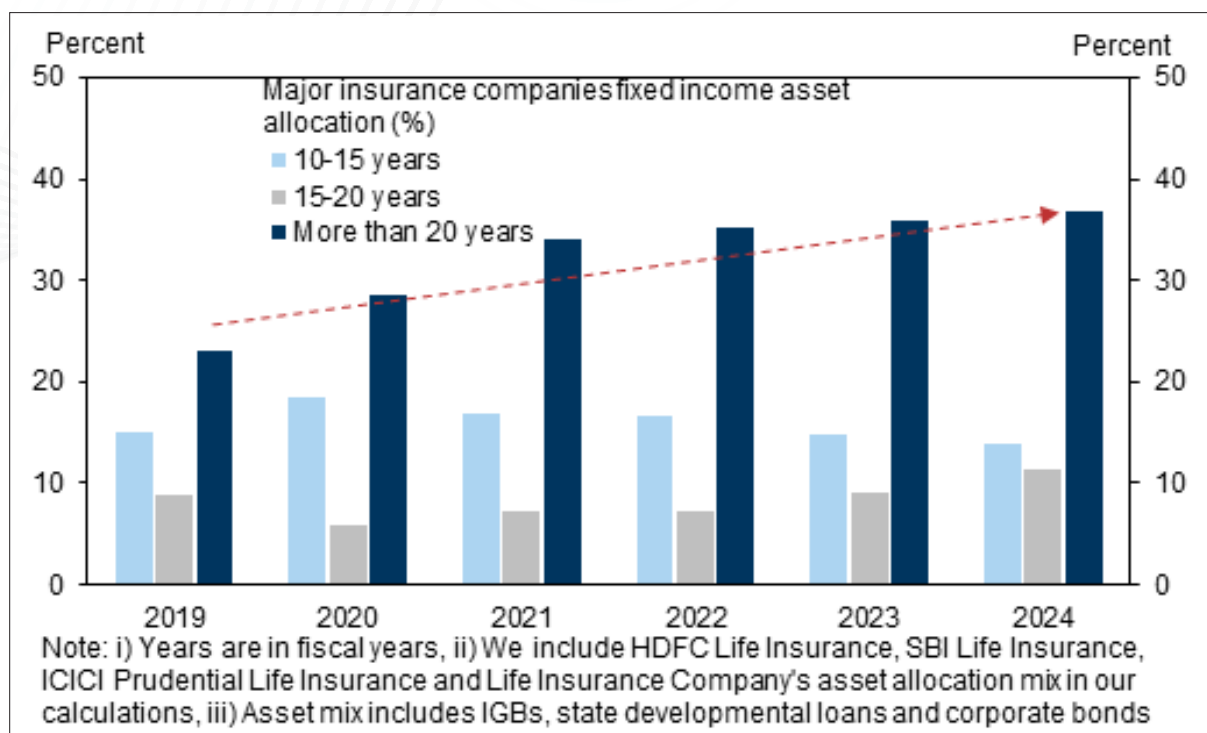
Exhibit 14: Longer-dated sovereign issuances have increased in recent years





Further, insurance companies have increased their duration of investment in fixed income securities by 20 years and above tenor from 23 per cent in the pre-pandemic period to 37 per cent now (Exhibit 15). In our view, this mandated demand from long-term investors is putting downward pressure on longer-term yields, and we expect this to continue.

Exhibit 15: Insurance companies have increased their asset allocation towards longer-dated bonds



Source: Company Data, Data compiled by Goldman Sachs Global Investment Research

We expect the central government to remain on a path of fiscal consolidation, targeting a central government fiscal deficit of 4.0 per cent of GDP or below by FY27. This means the pace of growth in net issuance of government securities will decline over the next few years, which will put further downward pressure on yields.

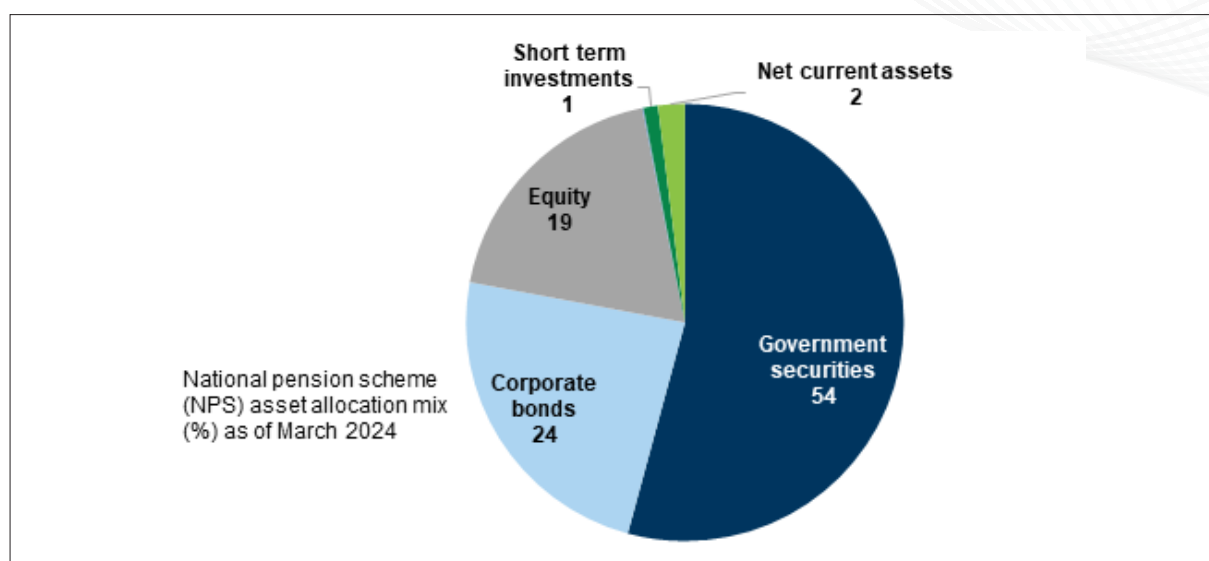
IMPLICATIONS OF FINANCIALISATION OF HOUSEHOLD SAVINGS

Funding the domestic capex cycle: The pandemic has exposed the fragility of supply chains across the world. A major opportunity for India to spur economic growth and job creation in this decade is to develop globally competitive manufacturing hubs as international companies restructure their supply chains. India's investment rate in recent years has improved to 30.4 per cent of GDP in FY24 from 28.2 per cent of GDP in FY18. However, for India to return to around peak investment/GDP ratios by 2030, it will have to increase investment/GDP by around 5pp cumulatively over the next seven years. According to the national income accounting (NIA) identity in macroeconomics, domestic savings, net of domestic investments, must equal the current account balance. In recent years, services exports have helped cushion India's external balances from exogenous commodity / supply-side shocks. Boosting domestic financial savings will help fund the domestic capex cycle in India, without widening the current account deficit to the extent that it increases external vulnerability.



Robust demand for duration assets: The increase in AUM of long-duration investment entities, like insurance and pension funds, has been supplemented by larger issuances of longer-dated bonds by central and state governments, which have been bought by these investors. Pension funds are natural buyers of long-duration government bonds, given their long-term investment horizon (Exhibit 16). They are also typically less susceptible to immediate withdrawals (unlike mutual funds), which gives them more holding power to help manage volatility. Life insurance companies are also natural buyers of long-end bonds, as they strive to match assets with liabilities, which are typically long-dated.

Exhibit 16: Government securities and corporate bonds account for ~80% of India's pension fund asset allocation



Source: PFRDA, Data compiled by Goldman Sachs Global Investment Research

CHANNELING LONG-DURATION SAVINGS INTO INFRASTRUCTURE ASSETS

We estimate incremental private sector credit demand of around INR 210 trillion (USD 2.5-3 trillion) by 2030, which will likely be shared by banks, NBFCs and the bond markets. In our view, for the financial system to be prepared to meet the incremental credit demand, some bottlenecks to the credit supply will have to be unshackled. Increasing both liquidity and depth of the corporate bond market can make the financial system less commercial bank-centric, which would help in better credit risk distribution. This may require more regulatory coordination between the SEBI (Securities and Exchange Board of India), which oversees the bond markets, and the RBI, which has historically been responsible for credit oversight and regulates and supervises commercial banks.

While the supply of long-dated sovereign bonds has increased, the corporate bond market has a low share of long-dated issuance, which is vital for funding infrastructure assets. Much of the infrastructure creation in recent years has been led by significant capital expenditure by the central government. As the government aims to consolidate its fiscal position and vacates space in the bond market, in our view, it is important that the corporate bond market is incentivised to move towards long-dated issuance, so that long-term savings from pension and insurance are channeled into infrastructure asset creation. A starting point could be to incentivise long-dated issuance from the quasi-government or public-private partnership entities.



India's Multiple Transitions: Investment Imperatives and Policy Options



Dr. G. V. Nadhanael

Reserve Bank of India

The Indian economy is at the cusp of a dramatic transformation, driven by a number of transitions that are underway in its demography and economic structure, which could shape the path of economic progress over the next decade. Apart from this, exogenous factors, like the impact of climate change or external shocks, could have a bearing on the growth outcomes. Addressing these is critical given the growth aspirations, the most important of which is to become a developed country by 2047. As detailed below, all of these have implications for the aggregate level of investment that is needed to keep the economy on a sustainable high-growth path. While securing adequate resources to fulfil these investment requirements is the first-order priority, there are also policy choices to be made, such as the role of the private versus the public sector in overall investment, which forms part of the discussion in the second section. Finally, the need for policy stability as an anchor for fostering investment by ensuring credibility and complementarity is elaborated.

THE NEED FOR STEPPING UP INVESTMENT TO MANAGE MULTIPLE TRANSITIONS

Growth Aspirations

Achieving the target of becoming a developed nation by 2047 critically hinges on increasing the level of investment in the economy from the growth acceleration perspective. It is estimated that the real per capita gross domestic product (GDP) of India would have to grow at an average rate of 7.6 per cent to reach the status of a high-income country (Behera *et al.*, 2023). This would imply a significant acceleration of growth from the levels of about 6.5 per cent projected for 2024-25 and 2025-26.³ India has demonstrated that such high growth on a continuous basis is achievable, as witnessed during 2003-08. The critical point to note, however, is that the gross fixed capital formation (GFCF) was about two percentage points higher during those years than the average levels recorded during the last 15 years. Therefore, if India has to maintain its investment levels consistent with those of a previously witnessed high growth phase, overall investment will have to be raised by at least 2 per cent of GDP.

Demographic Dividend

From the point of view of resource availability and allocation, a higher growth can be sustained only with a simultaneous increase in both factors of production, viz., labour and capital.



From the labour side, India is at an advantageous position as the country is currently going through a phase of demographic dividend marked by an increasing share of the working-age population. India's demographic dividend is expected to peak around 2031 when the ratio of working age group population to total population is projected to be at 65.1 per cent.⁴ As we know from the standard neoclassical models of growth, output per worker is a function of capital per worker and therefore, capital formation would have to keep pace with the growing workforce to maintain labour productivity. If an increase in the number of workers is not matched by an increase in capital, it would lead to a reduction in capital per worker, which would lead to a reduction in per capita output.

In fact, the efforts would have to be even a step higher to raise capital per worker in a scenario of growing population, as currently India's capital per worker is lower than most of the advanced economies, as well as its peers (Behera et al., *ibid*). This has resulted in real value added per person employed in the manufacturing sector in India being lower than the same in many other emerging economies (Malin and Tyagi, 2023). Therefore, augmenting investment is critical for the growing population to be gainfully employed

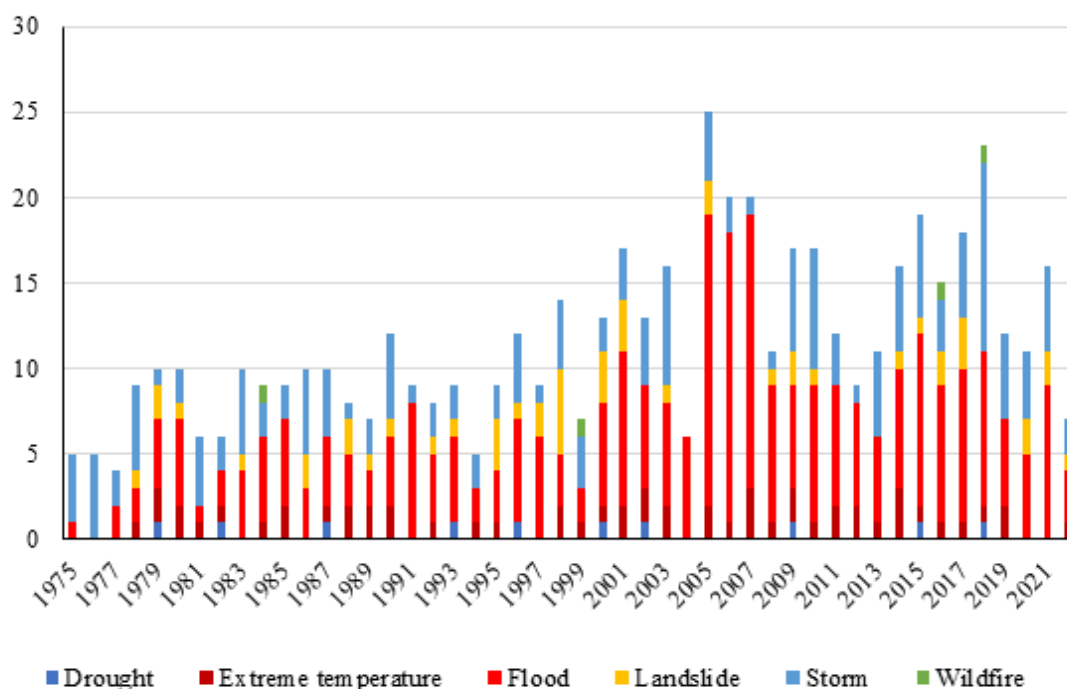
Physical Risks of Climate Change

Another major factor that is likely to shape the trajectory of growth over the next decade is the impact of climate change. The negative impact of climate change and associated weather related shocks on growth is well-documented in the Indian scenario (see RBI (2023) for a detailed survey of the literature). Policy discourse on climate change largely focuses on the transitional risks of climate change and the need for raising investments for climate mitigation and adaptation. However, the physical risks of climate change cannot be overlooked as the increased frequency of climate events has raised risks to physical capital in a significant way (Chart 1). It is estimated that in India, the average cyclone destroys 2.2 per cent of firms' fixed assets (Pell et al., 2023). The impact is even larger when the intensity of the climate event is severe, as a cyclone at the 90th percentile of the distribution destroys 8.7 per cent of the fixed assets. With both increased frequency and severity of climate events, the resources required to replenish capital and fixed assets lost to such events could increase significantly. From a growth accounting perspective, all of these add up to a higher rate of depreciation, which would have to be matched with a higher rate of capital formation to maintain the average levels of productivity in the economy. International experience also points towards the other channels through which physical risks of climate change have a bearing on overall investment. Firms that are exposed to climate change.

Research also reveals that there is a significant reduction in portfolio investments to emerging market economies (EMEs) when they are faced with adverse climate events. (Ferriani et al, 2023). There is also a risk of natural disasters reducing the ability of the government to raise more resources as climate events increase the cost of government debt on account of a higher risk premium (Mallucci, 2022). These concerns cannot be overlooked while drawing out the blueprint for generating resources to finance higher investment.



Chart 1: Number of Natural Disasters in India

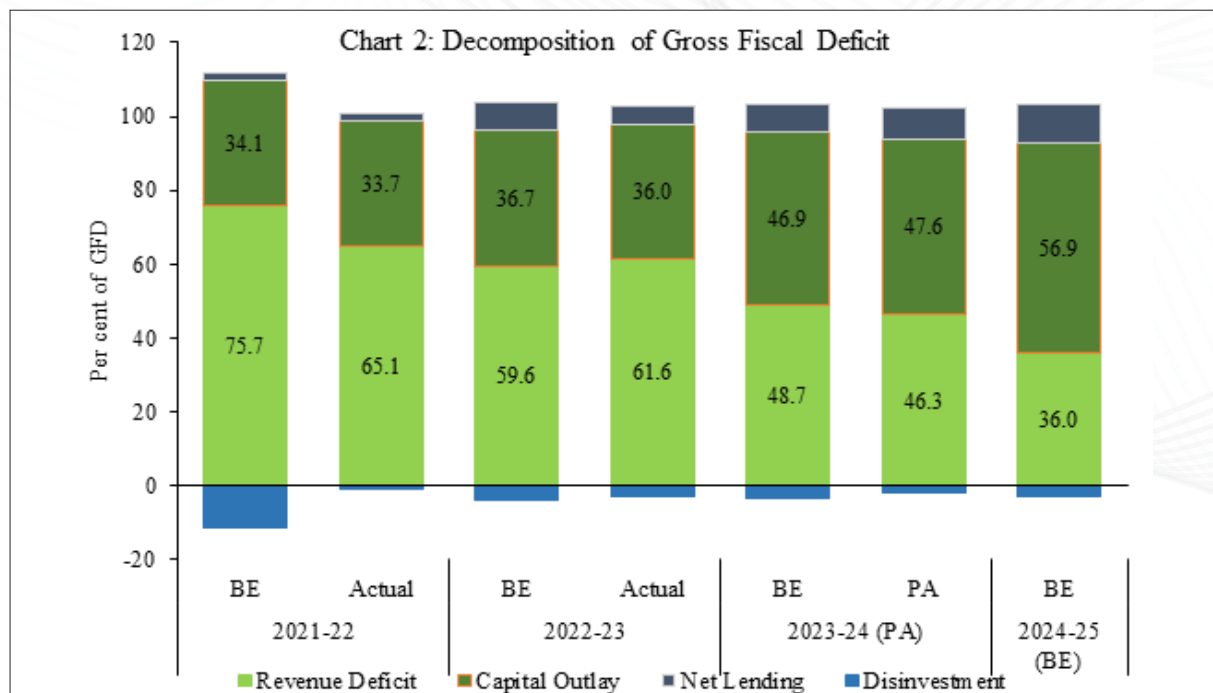


Source: Report on Currency and Finance 2022-23, RBI.

PRIVATE VERSUS PUBLIC INVESTMENT AND THE ROLE OF INVESTMENT DEMAND

If the levels of investment that are consistent with the growth aspirations and challenges discussed above need to materialise, private investment has to play a larger role, given the imperatives for fiscal consolidation. The availability of resources per se may not translate into higher investment in the private sector, as the demand for investment would have to match the supply of resources, which can be augmented through raising the national savings rate and increased inflow of foreign capital. From a macroeconomic framework point of view, higher investment can be realised by a shift in the investment demand curve outwards, which can be brought about through raising the marginal efficiency of capital. This could be achieved through a number of ways, among which policy certainty and overall macroeconomic stability are critical.

In this context, the role of public sector investment in increasing the marginal efficiency of the capital of the private sector assumes importance. It has been found that in India, public sector investment crowds out private investments, especially after the reforms of the 1990s (Bahal et al., 2018). Public sector capital expenditure also has a higher multiplier as compared to revenue expenditure (Bose and Bhanumurthy, 2015; Jain and Kumar, 2013), thus providing a boost to growth through its complementarities. The challenge, however, is to balance the need for fiscal consolidation along with the need for higher capital expenditure. The Union Government, in recent years, has been able to manage this by raising the share of capital outlay in the overall fiscal deficit.



Source: Khandelwal et al. (2024).

Another way in which private investments can be promoted through public investment is the creation of incentive mechanisms for private agents through targeted interventions. In this context, it is worth mentioning that the PM Surya Ghar: Muft Bijli Yojana, launched in February 2024 with an outlay of 75,021 crore to increase the share of solar rooftop capacity, has seen a tremendous response with monthly installation rates reaching around 70,000 in January 2025. The scheme offers a subsidy of up to 40 per cent on the capital cost, incentivising households to undertake investment in solar rooftop energy creation, which would generate substantial savings. Such initiatives could catapult private investment, with public sector investment playing a complementary role.

Macroeconomic Policy as an Anchor for Higher Investment

Having discussed the role of the private sector in raising investment, it is also important to look at the role of macroeconomic policy as an anchor and an enabler. It has been empirically established that an increase in policy uncertainty reduces overall investment in India (Economic Survey 2018-19). Rule-based policies, when such rules are committed to and diligently followed, reduce overall uncertainty and promote investment. Over the years, there have been conscious efforts both from the fiscal as well as monetary policy to reduce the extent of policy uncertainty. On one hand, a rule-based fiscal policy which provides definite targets, in terms of reduction in deficit as well as debt levels, enhances credibility, apart from making available more resources for private investment. On the other hand, monetary policy focused on flexible inflation targeting (FIT), such as what India has adopted since 2016, reduces uncertainty on two accounts. First, agents are able to better anticipate the future course of policy action and tailor their investment intentions as there is greater transparency and clarity regarding the goal of monetary policy. Secondly, FIT brings in greater stability in inflation. As has been pointed out in the Indian scenario, inflation targeting has indeed reduced both levels of inflation and its volatility, along with better anchoring of inflation expectations and improved monetary policy transmission (Eichengreen and Gupta, 2024). This contributes to sustainable high growth as low and stable inflation provides a congenial environment for investment by raising the potential growth.



Policy effectiveness also hinges on the complementarity of the two. If monetary policy pursues an inflation target without a credible fiscal rule, it may not be able to achieve the desired outcome, as fiscal pressures on price levels would act as a counteracting force. It has been found that larger fiscal expansion has been associated with higher inflation outcomes in the post-pandemic period in a cross-country setting (Singh and Bhoi, 2024). In India, however, results show that the post-pandemic fiscal support was not associated with higher inflation, as it was more targeted. Moreover, the fiscal policy has embarked on a consolidation path with an announcement of a glide path for fiscal consolidation in the Union Budget 2021-22. Further, the Union Budget for 2025-26 aims to manage the fiscal deficit from 2026-27 to 2030-31 in a manner that ensures a steady decline in Union Government debt. This disciplined fiscal approach is set to achieve a debt-to-GDP ratio of approximately 50 per cent by March 31, 2031- a commendable milestone in strengthening fiscal sustainability. This, coupled with the inflation target being kept at 4 per cent during the review of the framework in 2021, has ensured that the complementarities are strongly in place in India.

Such macroeconomic stability could also result in external sector stability. The experience of a taper tantrum shows that, faced with a global shock, countries with strong macroeconomic fundamentals fare better than others. Additionally, such credibility could also make external finance a viable source of investment. In this context, it is worth mentioning that the Committee on Fuller Capital Account Convertibility (Chairman: S S Tarapore) noted that “as the capital account is liberalised for resident outflows, the net inflows do not decrease, provided the macroeconomic framework is stable” and “the policy for macroeconomic stability widens in scope in an open economy with domestic and external market liberalisation” (RBI, 2006).

Overall, India stands ready to achieve the target of accelerating its growth over the next decade, despite a challenging macroeconomic environment. The successful transition to a sustainable high-growth path depends upon managing multiple transitions by ensuring adequate resources are mobilised for investment needs emerging out of these transitions. There is also a need to step up investment demand by enhancing the returns to investments of the private sector. Maintaining macroeconomic stability through policy credibility would go a long way in ensuring that India is set firmly on course to achieve the target of Viksit Bharat by 2047.



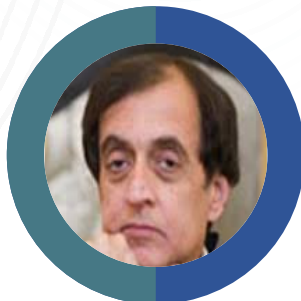
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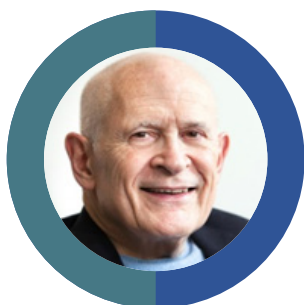
SESSION 2

Liberalising Capital Movements



Session Chair:
Anoop Singh

Distinguished Fellow
NITI Aayog, Government of India



Speaker 1:
Richard Portes

Professor of Economics
London Business School



Speaker 2:
Ashima Goyal

Emeritus Professor
Indira Gandhi Institute of
Development Research



Speaker 3:
Dr Samiran Chakraborty

Managing Director
Chief Economist, Citi Research, Citigroup
Global Markets India Private Limited,
Mumbai, India



Speaker 4:
Dr. Pravakar Sahoo

Senior Lead
NITI Aayog, Government of India.



SESSION 2 SUMMARY

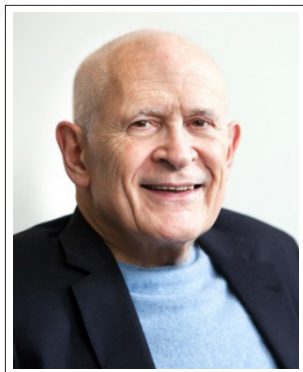
As global integration deepens, capital account liberalisation is essential for India to attract long-term investment, enhance resilience, and align with global financial markets. However, this process must be carefully sequenced, preserving monetary autonomy and managing volatility. India's middle-path approach—gradual openness with a managed float—has helped avoid crises seen in other emerging markets.

India's preference for stable FDI over volatile portfolio flows has generally served it well. Yet, FDI inflows have stagnated and net flows have declined due to policy uncertainty and operational hurdles. Simultaneously, debt-oriented portfolio flows are rising with India's inclusion in global bond indices, increasing exposure to global liquidity cycles. Absorptive capacity is limited by shallow bond markets, data opacity, and regulatory bottlenecks. Volatile flows could strain the rupee, financial markets, and monetary policy. The risks of misaligned exchange rates, asset bubbles, and sudden capital flight—exacerbated by weak institutions—remain real, as past global crises demonstrate.

India must deepen financial markets, diversify investment instruments, and prioritise long-term development goals such as infrastructure, sustainability, and innovation. Green bonds, InvITs, and blended finance can align foreign capital with national priorities. Macroprudential tools—like leverage caps, real-time surveillance, and countercyclical buffers—are crucial. Carefully liberalising outward flows and leveraging digital finance (e.g., CBDCs) can enhance integration while managing risks. Ultimately, a phased, transparent liberalisation strategy, underpinned by institutional readiness and macroeconomic stability, will allow India to unlock capital flows that boost resilience and support inclusive growth.



Navigating Capital Flows and Financial Regulation



Richard Portes

Centre for Economic Policy Research (CEPR)

The global regulatory environment is under increasing strain, with signs of a growing backlash against financial regulation, particularly in the United States. This trend is exemplified by the recent rollback of Basel III implementation, which raises concerns about the future of international financial stability and the credibility of regulatory frameworks.

CAPITAL CONTROLS AND THE EUROPEAN EXPERIENCE

The European Union's approach to capital controls illustrates the complexities of financial integration. Although the legal abolition of capital controls was initiated in 1987 and scheduled for full implementation by 1992, practical restrictions continue to persist. These controls were eliminated as part of a broader move toward a single market and currency embodied in the mantra "one market, one money."

Despite formal commitments, capital controls have re-emerged during times of crisis. Notably, during the 2008 financial crisis and again in 2020 amid the COVID-19 pandemic, several European countries restricted fund transfers from local bank subsidiaries to parent companies abroad. These actions contravened EU regulations yet received no enforcement response from Brussels. Such incidents underscore the incomplete nature of capital mobility in Europe.

Proposals for a common BRICS currency lack serious viability. Structural, political and economic differences among member nations render such initiatives largely symbolic.

LESSONS FROM INDIA'S CRISIS MANAGEMENT

India's management of the 2008 global financial crisis highlights the strategic value of foreign exchange reserves. Following the 1997 Asian financial crisis, international institutions encouraged emerging markets to accumulate reserves as a safeguard against volatility. India adhered to this guidance and entered the 2008 crisis with substantial reserves, allowing it to maintain exchange rate stability without significant depletion.

CENTRAL BANK SWAP AGREEMENTS AND LIQUIDITY

Central bank swap agreements represent an important tool for accessing emergency liquidity. During the COVID-19 pandemic, the U.S. Federal Reserve extended dollar swap lines to a limited set of countries, mitigating dollar shortages. India, however, was excluded from this



arrangement, raising questions about its ability to secure similar agreements in the future.

China has promoted RMB swap agreements with numerous countries, but these offer limited utility in global crises, where dollar liquidity is paramount. As such, these agreements do not significantly contribute to addressing systemic liquidity challenges.

RISKS OF CAPITAL FLOW LIBERALISATION

The liberalisation of capital flows entails both opportunities and dangers. Between 1999 and 2008, significant capital inflows from core Eurozone economies such as Germany, France and the Netherlands were directed toward peripheral countries like Spain, Portugal and Ireland. This led to two major problems:

- **Financial Intermediation Overload:** Domestic financial institutions were overwhelmed by the volume of capital, leading to inefficient allocation of resources.
- **Housing Market Instability:** Excess capital fueled real estate booms, which ultimately collapsed and triggered financial crises.

Historical data consistently show that instability in the housing sector is a critical driver of financial crises. These developments in the Eurozone culminated in IMF bailout programs under the so-called “Troika” arrangements.

MACROPRUDENTIAL TOOLS FOR EMERGING MARKETS

Emerging markets such as India may benefit from using macroprudential tools to manage capital flows, rather than relying solely on traditional capital controls. Key areas of focus should include:

- **Leverage:** High levels of borrowing can increase financial system fragility.
- **Liquidity Transformation:** Mismatches between short-term liabilities and long-term assets heighten systemic risk.
- **Maturity Mismatch:** Reliance on short-term funding to support long-term investments can lead to instability.

Open-ended real estate funds exemplify risky financial structures. These funds allow investor withdrawals while holding illiquid assets, creating conditions ripe for financial disruption. Past European crises have shown that these structures may necessitate withdrawal restrictions, further eroding market confidence. A ban on such funds may be warranted.

INVESTOR BEHAVIOUR AND DATA GAPS

Understanding the behaviour of different investor categories, such as hedge funds, institutional investors, and retail investors, is essential for effective capital flow management. The COVID-19 crisis highlighted the role of hedge funds in disrupting liquidity in markets like U.S. Treasuries, ETFs and corporate bonds despite their relatively limited involvement in the 2008 crisis. Enhanced data collection and surveillance are necessary to assess vulnerabilities stemming from investor composition, particularly if hedge funds constitute a growing share of capital inflows to emerging markets.

HOUSEHOLD LEVERAGE AND HOUSING RISKS

Rising household debt in the housing sector presents another systemic concern. Although current data for India is unavailable, European economies have seen significant increases in household leverage, contributing to broader financial instability. Given the historic role of housing bubbles in triggering crises, including in China, close monitoring and regulation of this sector are critical.



THE INCOMPLETE FINANCIAL INTEGRATION OF EUROPE

Despite the formal establishment of a “single market” for financial services in 1992, genuine financial integration in Europe remains elusive. The Capital Markets Union (CMU) initiative has progressed slowly, with persistent barriers to cross-border banking and investment. These impediments undermine the concept of a unified financial market.

The recent report by Mario Draghi on European financial integration underscores the enduring challenges. While some policymakers argue that regulation may have gone too far, a concurrent pushback against regulatory measures is evident in Europe, the UK and the U.S., particularly in the banking sector. This trend warrants careful attention from emerging markets.



Risks and benefits of capital account convertibility



Professor Ashima Goyal

Indira Gandhi Institute of Development Research, Mumbai

INTRODUCTION

The impossible trinity in macroeconomics states that an open capital account, a fixed exchange rate and monetary policy autonomy are not possible together. The simplicity and clarity of this paradox have led to its percolating deeply into policymakers' minds. But it is a theoretical extreme that holds only in text books and under extreme conditions of perfect capital mobility and zero flexibility in the nominal exchange rate. Only then is monetary policy tied to maintaining the exchange rate. In practice, capital flow management and a flexible exchange rate gives many degrees of policy autonomy. Only very few advanced economies (AEs) actually have zero capital account restrictions and a perfect float. And that combination raises risk, interest rate spreads, volatility and the probability of crises in emerging markets (EMs). Moreover, it does not give monetary policy autonomy either. Since depreciation tends to be persistent in EMs and reversion is rare, there is no expected appreciation after overshooting, unlike in AEs. So, despite depreciation, interest rates still have to rise to prevent further depreciation and to respond to the inflation that follows.

Since the volatility is caused by capital flow surges and sudden stops due to global shocks, the overshooting of the exchange rate can easily be in the opposite direction to that required for external equilibrium. India has experimented with more or less intervention but the underlying sequenced approach to capital account convertibility (CAC), in line with deepening of domestic markets, building of foreign exchange (FX) buffers, allowing the exchange rate to be market determined but intervening to prevent excess volatility has worked well. As domestic markets deepen sufficiently and international safety nets and regulation improve so that capital flows do not cause excess volatility, administrative freedoms will rise, and the share of capital flows reach a natural equilibrium.

India's choices have combined growing market freedoms and reduction of policy-maker discretion with market-friendly rule-based regulation and building FX buffers to lower the excess volatility to which EM FX markets are subject. The operative constraint to widening the current account deficit is investment, not the availability of foreign savings. Allowing appreciation instead of building FX buffers would further reduce export demand and divert domestic demand to cheaper imports, thus reducing investment.



The remainder of this paper first has a brief review of India's post-reform experience on capital account liberalisation and then that of other countries. It then turns to the future: how to better raise investment and absorb foreign savings on the path towards becoming a developed nation, and further freedoms to be expected, building on advances in payment systems to facilitate cross-border payments.

LEARNING FROM THE PAST

After the 1990s reforms, there were a number of Indian reports on moving to CAC, but each was followed by a global crisis, which brought out the advantages of India's sequenced capital account (KA) liberalisation that has served it well. Restrictions on foreign direct investment (FDI) and equity flows were removed more and more. Absolute restrictions on debt flows gave way to caps as a share of market size. Short-term debt was discouraged. All restrictions on foreign outflows were removed, although caps remained on domestic outflows. Even so, capital flows were large. In most years, the KA surplus exceeded the current account deficit (CAD), and FX reserves rose (Figure 1).

Fluctuations in foreign portfolio investment (FPI) are due to global risk, both on and off, and are often entirely unrelated to domestic conditions. After the global financial crisis (GFC), as a result of the relative increase in regulation on banks, FPI from non-bank financial intermediaries, which is highly sensitive to global conditions, dominated cross-border flows to EMs.

Reserves proved important in smoothing the impact of global shocks. In the volatility after the GFC, the management came to believe markets were too large for intervention, and a deputy governor said so publicly. The rupee plunged. The RBI had to step in with multiple instruments. Success in stabilising the rupee led to too much intervention in the years that followed. As a result, there was real appreciation, and exports suffered.

After the pandemic, intervention continued, but a crawling depreciation minimised real misalignment.

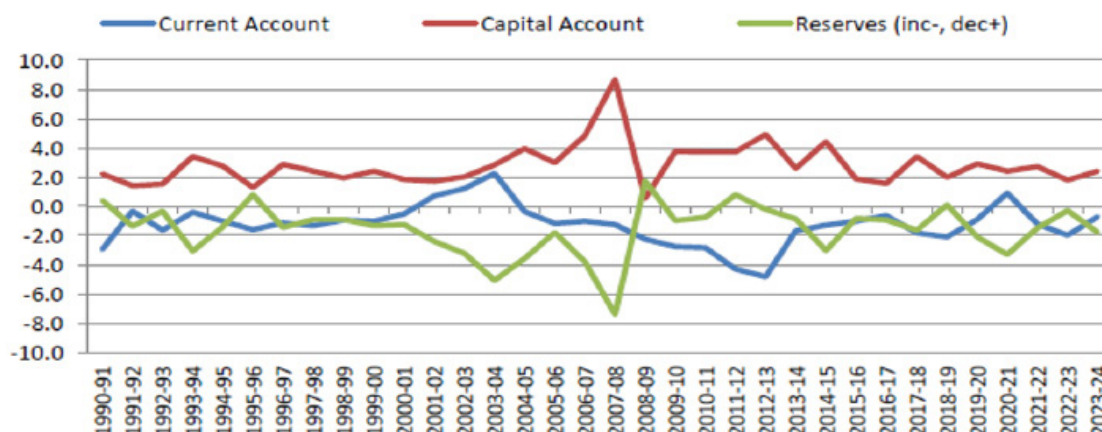
Markets and analysts tend to be nervous in periods of outflows when reserves fall. There is pressure to let the rupee go and raise domestic interest rates, for example, in 2022, the year the Ukraine War started and end in 2024 during the Trump trade. It is inconsistent to want a free float as well as reserves. In a free float, the currency is market-determined without any reserve holding.

However, the aim of building reserves and sequenced CAC that make other instruments available is precisely to prevent overshooting of real exchange and interest rates, often due to global pressures. This allows policy to be countercyclical and minimise deviation from equilibrium values suited to the domestic cycle, without tying the policy rate to the exchange rate. The nominal exchange rate is determined in large and deep FX markets, but intervention can prevent persistent real misalignment due to global events. Reserves would dip during large outflows and then be rebuilt during inflows (Figure 1).

As yields on secure US treasuries rise, there are equity outflows, but raising domestic interest rates does not help keep them in India. Debt inflows are capped, and outflows turned out to be lower in periods with the least interest differentials. Flexibility gives much more freedom to suit domestic requirements than is feasible with either extremes of a fix or a float.



Figure 1: India's balance of payments as ratios to GDP



Source: Reserve Bank of India

LEARNING FROM OTHER COUNTRIES

EMs without reserves and therefore free floats suffered a large growth sacrifice due to global volatility. Unlike in AEs, where there is trend reversion after overshooting the exchange rate, in EMs, persistent movement can continue so that risk premia rise.

Research and EM experience show the importance of reserves and intervention strategies, which enable the sustainment of market confidence in EMs. Many of India's neighbours suffered after their reserves fell to zero. Sri Lanka had 70 per cent inflation as the currency sank. Mauritius had a similar experience after following IMF advice and auctioning its reserves. EMs do not have access to Fed swaps or adequate international safety nets. Reserves serve an essential precautionary purpose and lower risk premia.

If reserves are essential, an EM cannot have a free float. FX intervention, plus prudential capital flow management, plus signaling, are compatible with flexible inflation targeting. They provide alternative instruments to affect the external balance, allowing the interest rate to target the domestic cycle. In practice, they are used in all inflation-targeting EMs, although theory says a country targeting inflation must have a free float, so the exchange rate equilibrates the external sector, freeing the interest rate for targeting inflation. However, free floating is a theoretical extreme that is not found even in most AEs. The theory neglects FPI surges and the misalignment of real exchange rates that they can cause, as well as the limited impact of domestic interest rates on FPI in EM.

ABSORBING EXTERNAL FINANCING

As the excess of domestic investment over own savings, the CAD measures the absorption of foreign savings. The fact that the capital account surplus (KAS) has normally exceeded the CAD since the nineties indicates that the constraint is not foreign savings but the ability to absorb them. Also, since domestic investment limits absorption, it is investment, not domestic savings, that is the operative constraint on growth. The historical average of the CAD is 1.3 per cent of GDP, while a level of around 2 per cent is regarded as sustainable.

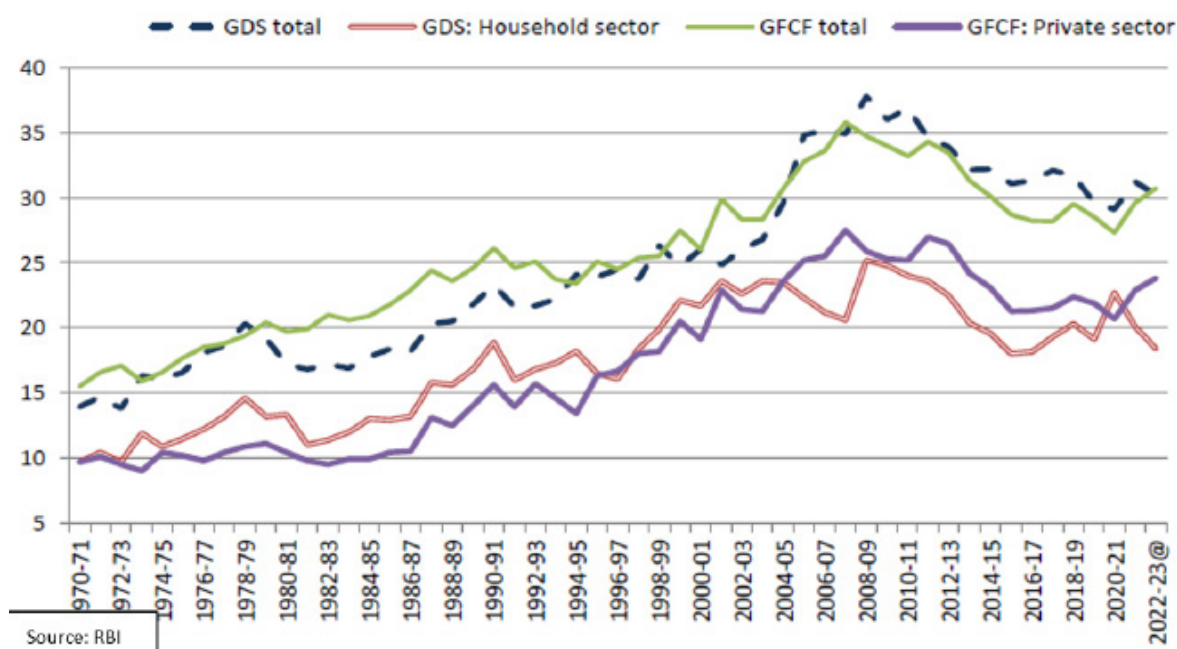
Aggregate savings equal investment tautologically, but matching differing components to isolate turning points, leads and lags in Figure 2 shows that investment has always led domestic savings in India.



Since the 2000s, volatility in private investment has affected growth. Domestic savings ratios rose in periods of high growth following a rise in investment. After the 2010s, whenever policy rates responded to domestic food inflation, keeping real interest rates persistently above 2 per cent, private investment and growth softened. So, moderating the supply-side issue that leads to food price spikes and smoothing real interest rates is essential both to raise domestic savings and aid the absorption of foreign savings. Policies to raise capacities and reduce the costs of living and doing business have to continue.

Indian financial markets are diversified enough today to allow investment to safely lead savings, unlike pre-reform, when the private and the public sector competed for limited bank deposits. Households are diversifying into equity investment; pension funds are growing in size; venture funds are financing start ups. AIFs are providing credit for lower-rated entities. The stock of bonds was 34 per cent of non-food credit in April-December 2023, although long-term bonds, ideal for financing infrastructure, need to develop further.

Figure 2: Components of Gross Domestic Savings and Gross Fixed Capital Formation



However, instruments such as InvITs and REITs show promise in releasing funds locked in infrastructure. A development bank is now intermediating funds for long-term projects. Although financing requirements are large, absolute amounts available grow with GDP⁷, so required resources become available over time.

Apart from resources, the cost of investment also matters. Exchange rate volatility is one reason the cost of borrowing is high for EMs. The excess premium charged averages 3 per cent and exceeds actual depreciation. The definition of the regime is a flexible market-determined exchange rate with intervention to reduce excess volatility, but implementation has varied depending on policy priorities and external risks.

Over 2023 and 2024, the RBI used buy-sell interventions in a narrow daily band, perhaps because markets were nervous due to continued global fragilities, with two ongoing wars. But deepening FX markets with reforms to onshore the offshore also contributed to lower

⁷ For example, estimates of financing required for greening the economy range over 78-104bn\$, which is 3-5% of GDP, although some estimates are as high as 250 bn\$. GDP doubles in 10 years with 7% growth, so it will exceed \$10tr when 3-5% is \$200-300bn



volatility. Merchant and dealer FX turnover doubled from 1 pre-pandemic to USD 2 trillion; although volatility was low yet REER misalignment reduced-so price discovery was not hampered. One year forward premium was 5.19 per cent over 2014-19 but fell to 1.95 per cent in 2023.

After Trump's November re-election, some real appreciation occurred due to USD strength and Yuan depreciation, so faster nominal depreciation was required. But still, nominal depreciation was about 3 per cent compared to 12 per cent in 2022, the year the Ukraine war started.

More daily volatility is, however, consistent with the successful post-liberalisation policy of intervening to reduce excess volatility and, as a consequence, real misalignment. Some volatility induces hedging and helps reduce nervousness after a sudden change. But it is better to moderate the market overreaction that occurs in global risk-off periods. In 2023, without intervention, inflows would have led to over appreciation, raised expected depreciation and interest rate differentials. Volatility hurts the real sector and even markets do not like excessive volatility. Depreciation raises the cost of commodity imports immediately but exporters do not benefit much since they have to share gains in India's competitive product markets. But in the longer term they do need the REER to be competitive.

Export competitiveness cannot be neglected when the trade deficit is large and exports are a potential source of employment. But depreciation tends to eventually cause the real exchange rate to appreciate through inflation, while nominal appreciation can sometimes help abort domestic pass through of oil price shocks.

TOWARDS FURTHER MARKET FREEDOMS ON THE PATH TO 2047

FPI wants less intervention and more freedoms. They contribute both foreign savings for growth and help deepen domestic markets but are volatile. Administrative freedoms will grow on India's well sequenced path to capital account convertibility even as foreign capital approaches a natural share of about ten per cent in deep domestic markets that will be able to absorb volatility, so that the tail does not wag the dog. We already see how large domestic participation in the stock market has reduced volatility due to FPI entry and exit. The absolute amount outflows will rise anyway with domestic market size. Innovations in the domestic payments space can be extended to cross border transactions.

One way this can be done is through CBDCs. Since the design is different for retail and institutional agents, banks will not be disenfranchised---they will be responsible for retail spread. CBDCs complement currency do not substitute it; they save paper, reach remote corners, promote financial inclusion, improve monetary transmission; tech enabled transparency can be less intrusive with build in safeguards, they reduce costs of cross border transactions (high because of multiple correspondent banks who each take a cut), they give competition to cryptos and along with regulation mitigate dangerous aspects of cryptos and their use in the dark net. Technological expertise enables regulators to understand and gain insights into the working of private innovations.

CONCLUSION

Macroeconomic policy affects trend growth in a country like India and has to be carefully designed to aid catch-up, while preserving macroeconomic stability. Flexible inflation targeting plus fiscal rules and supply-side action plus preventing overshooting of the nominal exchange rates combine to provide a stable nominal anchor for the economy. Although government debt ratios are higher than in peer countries and there is a historical accumulation to overcome, good growth prospects and commitment to reducing central deficits is giving



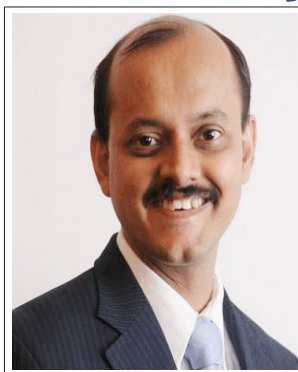
India rising credibility in global markets. States commitment to fiscal consolidation is varied, but their borrowings are capped.

A managed but flexible nominal exchange rate can reduce volatility as well as misalignment from competitive real exchange rates without painful domestic deflation or inflation. Intervention to maintain an export-weighted REER of about 100 in the long term balances the different interests well. As inflation falls and productivity rises, this can be sustained with less nominal depreciation. It is consistent with adequate volatility to aid price discovery in FX markets and to prevent speculative one-way positions.

Occasional nominal volatility within a shrinking band would suffice. Most EM CBs attempt something like this in practice. But due to continuing global fragilities and volatile capital flows, implementing this requires multiple instruments such as large reserves, the absence of full capital account convertibility, prudential measures, signals and strategic intervention. These tools are more successful if they work with markets. And are better alternatives to options of either living with overshooting exchange rates or raising interest rates and reducing domestic demand, which is a costly and inefficient way to respond to the threat of outflow. Volatility will also reduce with a fall in the relative size of supply shocks and capital flow movements. As domestic markets deepen, the share of foreign capital can reach a natural level, compatible with more capital account freedoms.



India's Capital Flow Dynamics: Needs, Prospects and Policy Choices



Dr. Samiran Chakraborty

Citigroup Global Markets India Private Limited, Mumbai, India

HOW MUCH CAPITAL FLOWS DO INDIA NEED?

In theory, lowering of CAD is almost synonymous with bridging of the Savings-Investment gap, and in turn determines the extent of capital flows required to bridge this gap. However, in practice, there could be two separate ways of approaching this issue, which can sometimes lead to different estimates of the required capital flows. One would be to independently estimate the trend in current account deficit (CAD) based on different policy measures taken in the context of exports and imports, and the other is to forecast the savings-investment gap arising from assumptions specific to these two macro variables.

In our view, India's investment rate in this cycle might peak at the mid-30s rather than the earlier peak of 39 per cent of GDP. This is partly because capital allocation is less towards the capital-guzzling sectors and, to some extent, also driven by better sweating of capital (improved productivity). If household savings stabilise, then with the lowering of the fiscal deficit and improved corporate profitability, overall savings could come closer to this investment requirement. Sustained export growth can keep the household income momentum high and contribute to the growth in household savings, too.

On the other hand, we think it is possible for CAD to stabilise at ~0.5 per cent of GDP in FY26-FY30, based on our assumptions regarding India's export (export to GDP at 12.6 per cent by FY30) and import parameters. Even if oil prices are much higher than Citi's more benign view (Brent prices around USD 60 – 70/bbl), we think CAD is unlikely to cross 1.0-1.5 per cent of GDP on a sustained basis.

Both the lower savings-investment gap and the smaller CAD imply that the foreign funding requirement to bridge the gaps might be smaller than historical trends (2 – 3 per cent of GDP). In terms of quantum, it translates to only USD 25 – 50 billion of annual capital inflows required till FY30 to bridge the current account gap. For perspective, average annual capital inflows in the last 15 years have been close to USD 70 billion. Even if we consider the savings investment balance approach, then potentially this gap could go higher, necessitating close to USD 100 billion of capital inflows.

However, we think that the lower CAD is not an unmixed blessing. It also signifies a lower absorptive capacity of the economy. The conventional wisdom has been that a developing economy like India, in its early phase of the growth cycle, should leverage on a higher savings-



investment gap to propel growth. However, there are alternative models like the East Asian economies, which have been able to run current account surpluses during their rapid growth phases, too.

Looking at the historical experiences of other countries, we have inferred that India requires a combination of more than 10 per cent investment growth and 3 per cent productivity growth to aspire for an 8 per cent GDP growth. To sustain this pace of investment growth, alternative financing channels, including more foreign capital buffers, need to be explored. If the domestic conditions for absorbing capital flows are improved through policy measures, particularly deregulation of factor markets, then India can potentially absorb a larger amount of capital inflows without its attendant risks of overheating asset markets or overvalued exchange rates.

Another way to look at this issue is that a lower CAD provides the comfort of opening up the capital account more without being worried about the risks of stop-go capital flows. In fact, encouraging fewer volatile types of capital flows has always been a policy preference in India to avoid these risks. The tolerance for allowing more capital account convertibility could increase if CAD sustains at a level below 1 per cent of GDP.

HOW MUCH CAPITAL FLOWS INDIA IS LIKELY TO GET?

This is a difficult exercise that not only depends on the domestic policy moves but also on significant global macro and geopolitical developments. We can explore three different types of capital flows India is likely to receive - FDI flows, equity FPI flows, and bond FPI flows.

FDI flows

India's policy framework has favoured FDI over all other kinds of capital inflows because of its more stable nature and the technological improvements brought along by FDI flows. However, gross FDI inflows into India have been in the range of 2 – 3 per cent of GDP for more than 15 years, despite progressive relaxation of limits on foreign investment into various sectors, which has led to almost all the sectors being fully open to FDI now. The net FDI inflows have averaged at ~1.3 per cent of GDP. For perspective, total private gross capital formation (GCF) averaged ~12 per cent of GDP, implying that net foreign investment contributed to only one-tenth of private investment. Even from a global perspective, FDI inflows into India were only a small proportion (2 – 3 per cent) of global FDI Inflows for most of the last 20 years.

In fact, A very sharp deterioration in India's net FDI inflows – from USD 44 billion in FY21 to USD 10 billion in FY24 and almost zero inflows in 8MFY25 – has been a talking point for investors. However, we would like to point out that the decline is less ominous on the gross FDI inflows front. While there has been some moderation – from USD 82 billion in FY21 to USD 71 billion in FY24 – we note that in the first 8 months of FY25, there has been a 17 per cent YoY growth in gross FDI inflows. Also, the gross FDI inflows need to be looked at in the context of an overall moderation in global FDI. The decline in net inflows is mostly because of a sharp increase in repatriation/divestment by foreign investors. With elevated asset market valuations in India, investors and MNCs likely considered it to be an opportune time to monetise some of their profitable India investments now, leading to USD 44 billion outflows in FY24 and another USD 40 billion in 8MFY25. Most of these transactions have happened through private equity/venture capital investors selling down their stakes in Indian companies through IPOs or MNCs listing their India operations separately to monetise some of their stakes.

Indian companies are also investing abroad more, as reflected in the Outward FDI data – from USD 11 billion in FY21 to USD 17 billion in FY24 and on course to be the highest ever in FY25. In fact, the FDI Markets data on global greenfield FDI suggests that quarterly greenfield project announcements by Indian companies reached an all-time high of 195 outbound projects in the Jul-Sep 2024 quarter, making it the highest FDI contributor among EM countries and



the 5th highest overall. Although the capital expenditure on these projects is still smaller than in some other source countries, it is notable that more than 400 Indian companies have announced at least one greenfield FDI project in each of the last two years.

While the outbound FDI flows are likely to continue given aspirations of Indian corporates, we hope that the unusually large repatriation of capital could moderate as the equity market valuations correct, improving the net FDI inflow. However, India should be fully utilising the opportunity to attract the capital flows diversifying out of China too. Our analysis of the announcement of relocation plans of companies out of China (and some other new investments) through a web-scraping exercise suggests that, 2023 onwards, the number of such announcements towards India has started exceeding that of Vietnam. This has not yet translated fully into the FDI inflow numbers. The process from planning the FDI to actual execution might be fast-tracked if India improves the ease of doing business by embarking on deregulation in a mission mode. Also, India needs more FDI into manufacturing activities (~25 per cent of total FDI inflows) to meet the goal of increasing the share of manufacturing in the overall GDP.

Equity FPI flows

India has a more liberalised stance towards portfolio investment in equities, along with a sophisticated market structure and diverse base. India's weight in the MSCI EM Index has more than doubled to ~19 per cent now in just 4 years. This has substantially improved the prospects of passive inflows into India as the AUM of these funds grows. India is also replacing China in other indices, like US pension funds have moved to a new index that includes India but not China. However, as Indian markets get more internationally integrated, they will experience the ebbs and flows of capital flows into EM, even if there are no idiosyncratic country-specific shocks. Investors might also be more sensitive to India's growth cycles and the extent of their positioning (overweight or underweight) from the benchmarks could also be wider than what has been observed historically.

Debt FPI flows

India has recently been included in the JP Morgan bond index, leading to USD ~24 billion inflows. There is a possibility of inclusion in other key indices like Bloomberg Barclays (AUM is USD ~3-5 trillion) and FTSE WGBI (AUM is USD ~3-3.5 trillion). Even if India gets a small weight, the inflows could be substantial. We might become part of these global indices even if we are not proactively trying for it. The index providers might be forced to include India in their indices, given the lack of bonds in countries with a strong macro backdrop. Also, if over the next two years, India's sovereign rating improves on the back of sustained fiscal consolidation, then the chances of inclusion in these indices will further improve. The passive debt FPI flows could be an additional factor driving capital flows. For perspective, a country like Korea received USD 43 billion in debt inflows in 2024, implying that the debt inflows into India could be substantial. Obviously, the debt investors would be more sensitive to the currency movements, and hence, debt inflows into EM could be challenged in an environment of dollar strength.

POLICY CONUNDRUM AND CHOICES

What kind of capital flows to encourage?

India has traditionally favoured equity investments over debt from foreign investors. Also, FDI flows have been encouraged more because of their relative stability and broader growth-inducing effect through technology transfer. A careful analysis of the capital flow trends seems to suggest that growth sensitive capital inflows of FDI and equity portfolio flows (averaging ~USD 50 billion annually for the last 15 years) has been more than double that of



interest rate sensitive inflows (FPI debt, ECB flows and NRI deposits) but FDI inflows (as per cent of GDP) has remained rangebound.

An emerging market country like India, with sustained strong growth performance, is likely to always attract growth-sensitive flows, but it may be required to increase the importance of debt inflows too. Adherence to macro stability improves the prospects of a sovereign rating upgrade, which in turn could help in inclusion into other global indices and encourage more passive debt inflows. In that context, improving ease of access to India's bond markets for different kinds of portfolio investors would probably provide a fillip to bond inflows.

A relatively higher proportion of interest rate-sensitive inflows could potentially increase the efficacy of interest rates as an alternative tool to impact the exchange rate, rather than being dependent on only FX intervention and capital controls. In fact, at an appropriate stage, more capital account liberalisation could also be considered where domestic residents can access interest rate-sensitive products like foreign currency deposits.

India has taken considerable steps in reducing policy uncertainty and ensuring macro stability to encourage FDI inflows. As discussed above, deregulation and reforms in factor markets to improve the ease of doing business would be the most important factor in attracting FDI now. More liberalisation in outward capital flows could also be a boost for investor sentiment.

Designing an exchange rate policy for balancing exports and capital inflows

In theory, an appreciation bias on the currency would boost investor sentiment as it improves dollar-denominated returns while it hurts the exporters, losing competitiveness. However, a more rigorous work needs to be done to analyse the general equilibrium effects of the exchange rate on different parameters of the economy to understand whether an appreciation or depreciation bias is more favourable for India. For example, more than half of India's exports could have significant imported components where the exchange rate is a pass-through. Smaller exporters might not have enough pricing power to benefit from exchange rate depreciation. In fact, even large software exporters' margins have remained practically unchanged despite substantial INR depreciation over time.

Another critical question to address would be whether excessive stability of the exchange rate encourages capital inflows or does it build more speculative positions for an eventual depreciation of a currency that suffers from an adverse inflation differential with the rest of the world? The role of relative valuation of the currency and communication of the same in terms of an exchange rate policy would help foreign investors form views on their exchange rate hedging activities and, in turn, could influence their investment decisions.

In summary, India needs to improve its absorptive capacity to attract more foreign investment, given its stage of development. This is required to bolster both the investment and productivity needs of an economy aspiring to achieve a sustained high-growth path. Further liberalisation of the capital account would help in meeting this objective, and shying away from it is not an option, as India is likely to become more and more integrated with the global capital flow cycles, both from a debt and equity perspective. While growth-sensitive capital inflows have been dominant in the past, the opening up of the capital account further and India's inclusion in global bond indices would increasingly balance the capital account dynamics with a healthy share of interest rate-sensitive flows too. Sustaining growth with macro stability is obviously the right recipe for attracting capital flows and avoiding sudden stops. We think that more domestic factor market reforms and deregulation would improve the ease of bringing capital into India.



External Resource Mobilisation: A Pathway for India's Capital Flow Liberalisation and Sustainable Growth



Dr. Pravakar Sahoo

NITI Aayog Government of India

INTRODUCTION

India's recent economic trajectory exemplifies the delicate balancing act at the heart of the Mundell-Fleming trilemma: the impossibility of simultaneously maintaining a fixed exchange rate, free capital mobility and independent monetary policy. As India pursues high and inclusive growth, targeting ambitious milestones such as the Sustainable Development Goals (SDGs), its external sector management reflects a strategic calibration of these policy levers. The nation's macroeconomic framework is increasingly oriented toward a managed exchange rate and prudent capital account liberalisation, allowing for monetary autonomy to address domestic objectives while remaining resilient to global shocks.

India has also set an ambitious goal of becoming an advanced country by 2047, marking the centenary of its independence. To achieve high-income status by this milestone, it is estimated that India's real GDP must grow at a compound annual growth rate of at least 7.6 per cent from 2023–24 to 2047–48. Meeting this target requires a robust medium-term financing strategy to elevate the domestic gross fixed capital formation rate by at least 2 to 2.5 per cent of GDP. Domestically, this period is critical for accelerating the transition from a lower-middle-income to an upper-middle-income economy, as per World Bank classification. This transformational agenda aligns with the Reserve Bank of India's centenary vision for 2035 and demands a comprehensive mobilisation of both domestic and external resources.

While domestic savings remain the cornerstone of investment, they are insufficient to fully bridge the gap between available resources and the capital required for rapid, sustainable development. Here, the sequencing theory becomes particularly relevant: India has prioritised the gradual liberalisation of capital flows, with a clear preference for stable, long-term foreign direct investment (FDI) over more volatile short-term portfolio flows. This sequencing—liberalising trade and FDI before opening the capital account—has been instrumental in minimising the risk of sudden stops, or abrupt reversals in capital flows, which have destabilised emerging markets elsewhere.

India's approach to capital flow management is thus not just about attracting volume, but about optimising the composition and quality of inflows. FDI is favoured for its stability and



its role in facilitating technology transfer and productivity gains, aligning with endogenous growth theory, which posits that innovation and knowledge diffusion are critical drivers of long-term economic expansion. Recent trends underscore this strategy: India's net FDI has remained robust even as global flows have declined, reflecting confidence in the economy's fundamentals and its policy environment.

Portfolio investments, while enhancing market liquidity and depth, are inherently more volatile and susceptible to global risk sentiment. India addresses this through calibrated regulations—such as sectoral limits and hybrid instruments—mitigating the risks of sudden capital reversals and reinforcing macro-financial stability. The Tarapore Committee's recommendations, which set fiscal deficit and inflation thresholds as prerequisites for further capital account liberalisation, highlight the importance of sequencing reforms to safeguard against destabilising shocks.

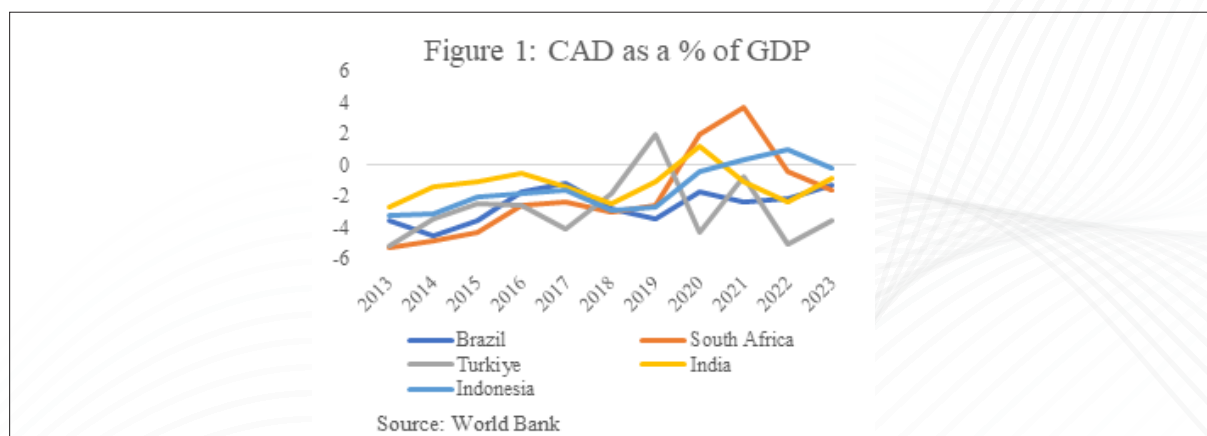
Importantly, India recognises that capital controls are but one tool in a broader policy arsenal. Robust macroeconomic management—including fiscal discipline, inflation targeting and structural reforms—complements capital flow management, strengthening resilience and reinforcing investor confidence. This multifaceted strategy aims to mobilise external resources equivalent to 2–3 per cent of GDP, consistent with international experience in catalysing modernisation and growth.

In summary, India's external resource mobilisation strategy—anchored in stable FDI, prudent FPI regulation and trade expansion—reflects a sophisticated application of economic theory to practice. By sequencing reforms, prioritising stability and fostering endogenous growth, India is not only navigating the constraints of the trilemma but also positioning itself to leverage global capital and trade for sustained progress toward its development objectives and the SDGs.

STATE OF THE INDIAN ECONOMY: EXTERNAL SECTOR STABILITY

Macroeconomic Stability and Policy Framework

- Current Account Deficit (CAD):** India's macroeconomic stability has improved significantly, with the current account deficit (CAD) narrowing to \$23.2 billion (0.7 per cent of GDP) in 2023–24 from \$67 billion (2 per cent of GDP) the previous year. This marks a sharp improvement compared to the decade average of -1.2 per cent of GDP and is well below the Asia-Pacific average of 1.9 per cent.⁸ The turnaround is driven by strong service exports, record remittance inflows and effective policy measures. India's external sector now shows greater resilience, positioning it favorably among emerging markets like Turkey and South Africa.

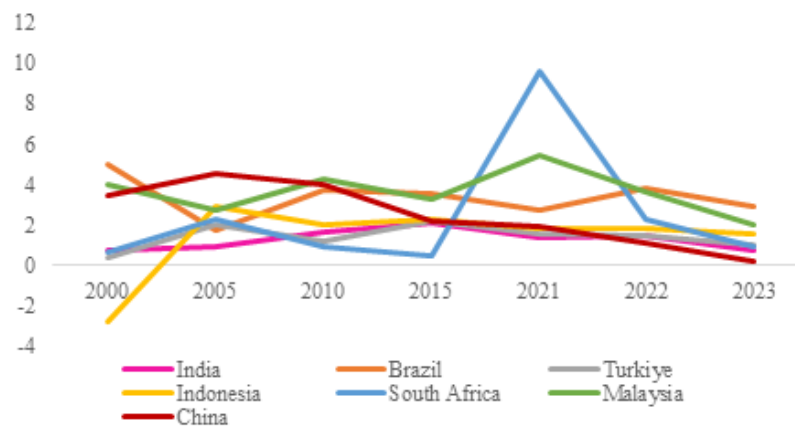


⁸ Economic Survey 2023–24: CAD narrowed to \$23.2 billion (0.7% of GDP) in FY24 from \$67 billion.



- Foreign Exchange Reserves:** India's foreign exchange reserves remain robust, providing 10.4 months of import cover as of September 2024, a critical buffer against external shocks. This substantial reserve level enhances the central bank's capacity to conduct effective foreign exchange interventions, stabilising the rupee during volatility. By mitigating currency risk perceptions, these reserves bolster investor confidence in India's external sector resilience. The ample reserves also act as a safeguard against global financial uncertainties, such as commodity price spikes or capital flow reversals. Overall, this positions India strongly among emerging markets in managing external vulnerabilities and maintaining macroeconomic stability.

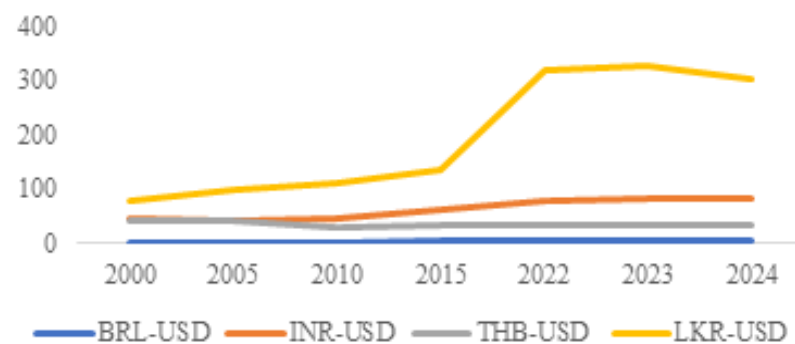
Figure 2: FDI Inflows (% of GDP)



Source: World Bank

- Exchange Rate Management:** India's exchange rate management has shown strong resilience, with the RBI effectively limiting rupee depreciation—only 2.6 per cent in 2021—through proactive forex interventions and prudent liquidity control. This has stabilised the rupee, curbed imported inflation and reduced external risks. Unlike the 2013 “taper tantrum,” when the rupee fell 11.3 per cent, India now benefits from higher reserves, improved RBI strategies and stronger macro buffers. These measures have enhanced investor confidence, reduced volatility and positioned India to navigate Fed tightening cycles with greater stability and reduced vulnerability to global financial shocks.

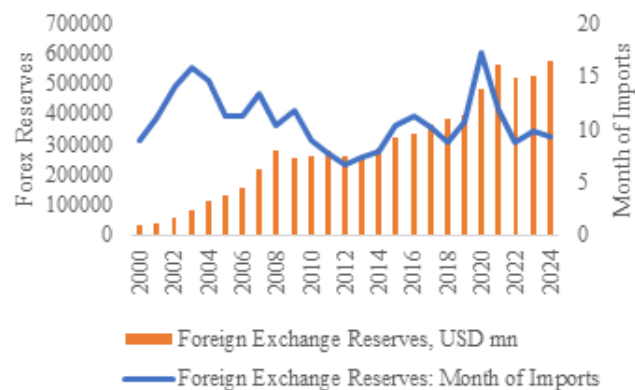
Figure 3 : Exchange Rate (in terms of 1 USD)



Source: FRED



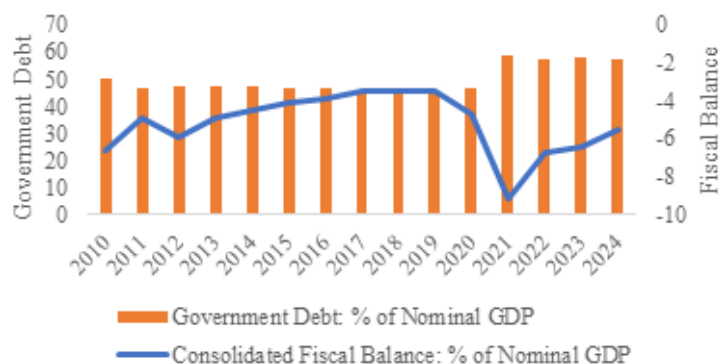
Figure 4: India: Foreign Exchange Reserves and Month of Imports



Source: CEIC

- Monetary and Fiscal Policy:** Over the past decade, India has steadily consolidated its fiscal position, reducing the fiscal deficit from a pandemic high of over 9 per cent of GDP to a projected 4.9 per cent in FY24-25 and targeting 4.4 per cent in FY25-26, while the primary deficit is set to decline to 0.8 per cent of GDP. This fiscal discipline is underpinned by prudent expenditure management, robust revenue growth and a commitment to lower central government debt from 57.1 per cent to 50 per cent of GDP by March 2031. Complementary monetary policies- emphasising liquidity management, inflation targeting, and open market operations- have anchored expectations and reinforced fiscal efforts. The synergy between these policies has strengthened macroeconomic fundamentals, improved resilience to shocks and bolstered investor confidence, as seen in a 3.3-fold rise in capital expenditure allocations since FY19-20. Together, these measures underscore India's commitment to sustainable growth and macroeconomic stability.

Figure 5: Government Debt and Fiscal Balance



Source: CEIC

- India's macroeconomic fundamentals have significantly strengthened, marked by a reduced current account deficit, robust foreign exchange reserves, prudent fiscal and monetary policies and strong, resilient growth supported by ongoing structural reforms. These improvements, along with a favourable external position and reform



momentum, underpin the case for an upgrade in India's sovereign credit rating from BBB- to BBB or higher. Recent positive actions by DBRS Morningstar⁹ and S&P¹⁰ reflect this growing confidence. With rising global demand for Indian goods and services, trade can mobilise external capital equivalent to 2–3 per cent of GDP, reinforcing external stability and justifying a sovereign rating reassessment.

Trade and Services: The Next Frontier

- **Merchandise Trade:** India's merchandise exports remain underrepresented in the global market, with less than 1 per cent share in approximately 70 per cent of world import segments, as detailed by NITI Aayog's Trade Watch (2024). Specifically, India's export share in these 4,422 product lines-constituting 68 per cent of global imports-is just 0.26 per cent, while the country achieves a significant 18.53 per cent share in a narrow set of products that account for only 2.9 per cent of global imports. Despite this concentration, India's overall merchandise exports reached \$395.63 billion in FY2024- 25 (April-February) and total exports (merchandise plus services) exceeded \$820 billion, marking nearly 6 per cent growth over the previous year, according to the Ministry of Commerce and Industry.

Table 1: India's share of world exports

Average Share % (2019-2023)	Particulars	2023 (US\$ Billion)		Share % in 2023		2023
India's export share in world's imports	Number of 6HS items	India's Exports	World's Imports	India's Export Basket	World's Import Basket	India's Export Share % in World's Imports
Less than 1%	4.422	41.52	16005.47	9.61	67.99	0.26
Between 1% - 5%	1389	135.91	5299.28	31.46	22.51	2.56
Between 5% - 10%	384	127.87	1553.33	29.6	6.6	8.23
More than 10 %	434	126.68	983.76	29.33	2.9	18.53
Total of the above	6629	431.98	23541.84	100	100	1.71

Source: ITC Trade Map and NITI's calculations

This export profile highlights a substantial untapped potential: even a modest increase in India's share within these underpenetrated global segments could generate additional export revenues equivalent to 2–3 per cent of India's GDP. With global merchandise imports valued at over \$23 trillion, expanding India's presence in these segments-especially in sectors like electronics and machinery, where recent growth has been robust-could mobilise significant external resources for the Indian economy. Such diversification would not only strengthen India's integration into global value chains but also provide a meaningful boost to macroeconomic stability and growth.

Services Exports: India ranks as the world's 7th largest services exporter, with its global share heavily concentrated in IT and business services, where it is a recognised leader. Over 45 per cent of global capability centers (GCCs) outside parent countries are located in India and an estimated 50–70 per cent of the global technology workforce operates from Indian GCCs, underscoring the country's dominance in technology-driven services. Despite this strength, India's services export portfolio remains relatively narrow, presenting significant opportunities for diversification.

⁹ Morningstar DBRS recently upgraded India's sovereign credit rating from 'BBB (low)' to 'BBB' with a stable outlook, citing the country's strong medium-term growth prospects and sustained structural reforms

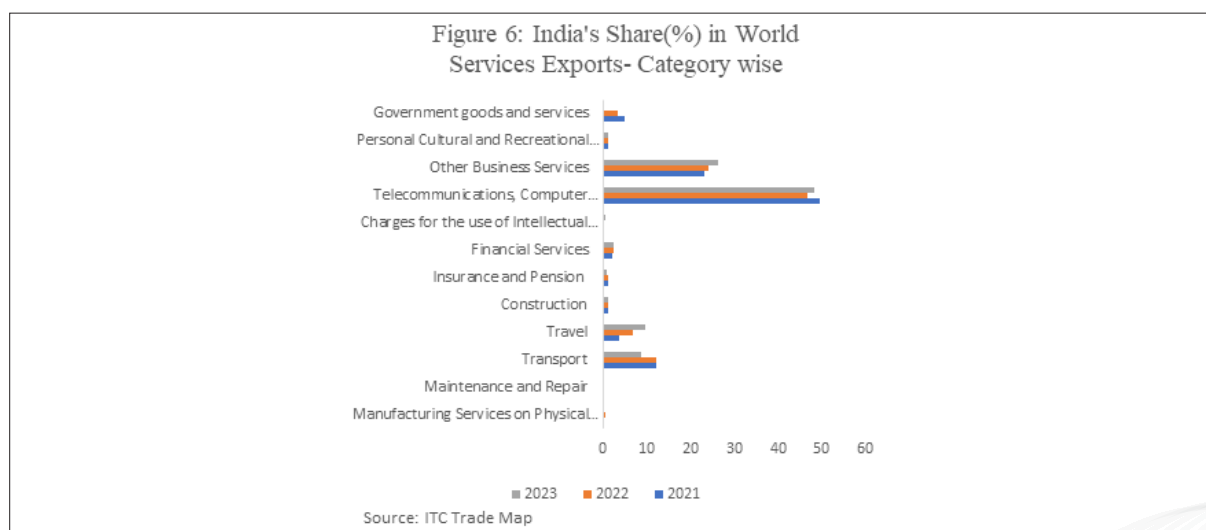
¹⁰ S&P Global Ratings revised India's outlook from 'stable' to 'positive', acknowledging robust economic expansion and the potential for a rating upgrade if fiscal deficits narrow meaningfully and economic reforms continue.


Table 2: India's Share in World Services Exports

Country	Exports (Million USD)-2020	Percent Share	Global Ranking
United States of America	705643	14.2	1
United Kingdom	342439	6.9	2
Germany	310661	6.3	3
China	280629	5.7	4
Ireland	262704	5.3	5
France	245578	4.9	6
India	203253	4.1	7
Singapore	187564	3.8	8
Netherlands	186644	3.8	9
Japan	160287	3.2	10

Source: Confederation of Indian Industry

Sectors such as tourism, tele-medicine, medical value travel and digital engineering offer substantial untapped potential for export growth. Expanding into these areas could further enhance India's global competitiveness and drive the next phase of services export expansion, further contributing to the external resource mobilisation objective of the government.



Other Growth Prospects:

India ranks 24th globally and 4th among emerging markets on the 2025 Kearney Foreign Direct Investment Confidence Index¹¹, reflecting strong prospects for attracting FDI over the next three years¹². India is rapidly strengthening its position as a global center for enterprise operations and innovation, with Global Capability Centers (GCCs)¹³ projected to generate USD 105 billion in revenue and employ 2.8 million people by 2030. As of 2024, the country is home to over 1,700 GCCs, which currently employ 1.9 million professionals and contribute USD 64.6 billion in annual revenue¹⁴. India produces 1.5 million STEM graduates annually¹⁵, with GCCs leveraging this talent for 40 per cent of global digital transformation projects.

¹¹ The Kearney FDI Confidence Index® is an annual survey of global business executives that ranks markets that are likely to attract the most investment in the next three years.

¹² Brazil outperformed in workforce quality (28% approval) and regulatory efficiency – factors that gained prominence in 2025 criteria of the report.

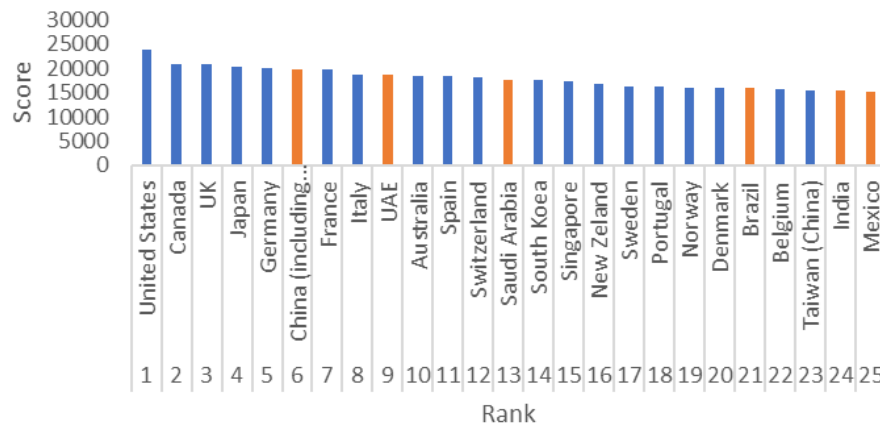
¹³ Key GCC hubs include Bengaluru, Hyderabad, Pune, Chennai, Mumbai and Delhi NCR, with Tier-II cities like Visakhapatnam and Kochi emerging as new destinations

¹⁴ The Economic Times. (2023, September 21). Global capacity centres to expand to USD 105 billion by 2030: Labour Secretary. The Economic Times.

¹⁵ Zinnov. (n.d.). Why the world should invest in India: Global Capability Centers (GCCs).



Figure 7: FDI Confidence Index



This dynamic ecosystem continues to attract multinational companies, reinforcing India's reputation as a leading destination for innovation and digital transformation. While IT and business services remain key strengths, significant opportunities for expansion exist in sectors such as tourism, telemedicine, medical value travel and engineering, particularly with a focus on digital engineering services. This diversification, supported by a large, skilled workforce and a proactive policy environment, positions India as a leading destination for global investors seeking growth and innovation across both established and emerging sectors.

Addressing the Demand-Supply Mismatch

India's participation in global trade has increased from 0.5 per cent in 1990 to 1.85 per cent in 2023 following economic liberalisation (PwC, 2024). Despite this progress, a significant demand-supply mismatch persists, hampering India's export potential. The share of merchandise and services trade in India's GDP increased from 15 per cent in 1980 to 46 per cent in 2023¹⁶. However, several structural challenges limit India's export competitiveness.

Figure 8 : India , Share of Manufacturing and Services



Source: World Bank

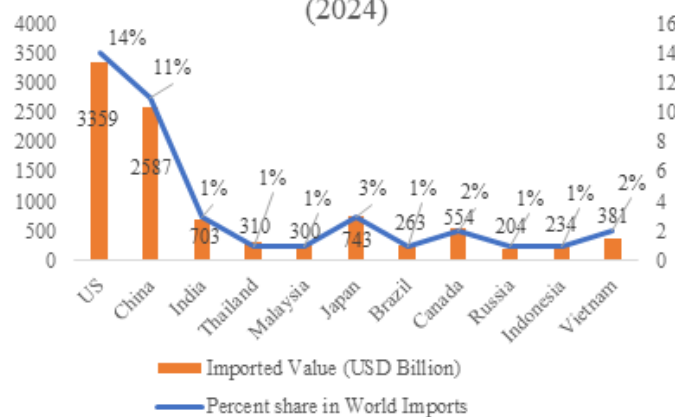
To bridge this gap, it is essential to focus on several strategic areas. First, upgrading product quality and aligning with international standards will enhance the competitiveness of Indian

¹⁶ World Bank Open Data



goods in global markets. Second, diversifying the export basket—moving beyond traditional sectors and low value-added products—can help India tap into high-growth and emerging segments, reducing vulnerability to shifts in global demand. Third, significant improvements in logistics and infrastructure, exemplified by initiatives like Bharatmala and Sagarmala, are needed to streamline supply chains and lower trade costs. Leveraging government incentive schemes such as the Production Linked Incentive (PLI) program can further boost manufacturing capacity and export readiness. According to the DHL Trade Atlas 2025 report, India is projected to maintain its third-place ranking on the scale dimension—a position it secured thanks to trade expansion that significantly outpaced that of other major economies. Additionally, India is anticipated to make substantial progress on the speed dimension, climbing to 17th place from its current ranking of 32.

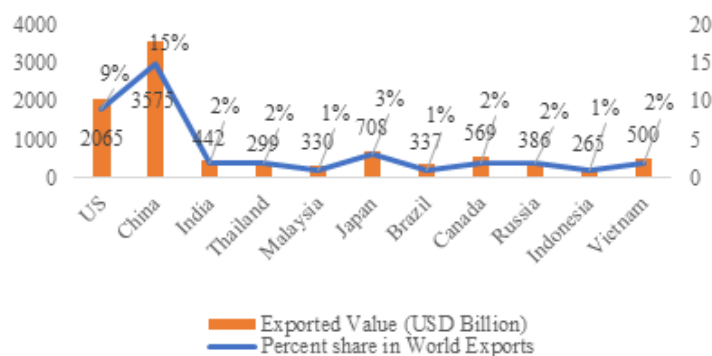
Figure 9: Imported Merchandise Value (USD Billion) and % of World Imports (2024)



Source: ITC Trade Map

The report also notes that while India ranked as the 13th largest participant in global trade in 2024, it recorded a compound annual trade growth rate of 5.2 per cent between 2019 and 2024. This rate is more than double the global average of 2.0 per cent for the same period, underscoring India's accelerating role in international commerce.

Figure 10: Exported Merchandise Value (USD Billion) and % of World Exports (2024)



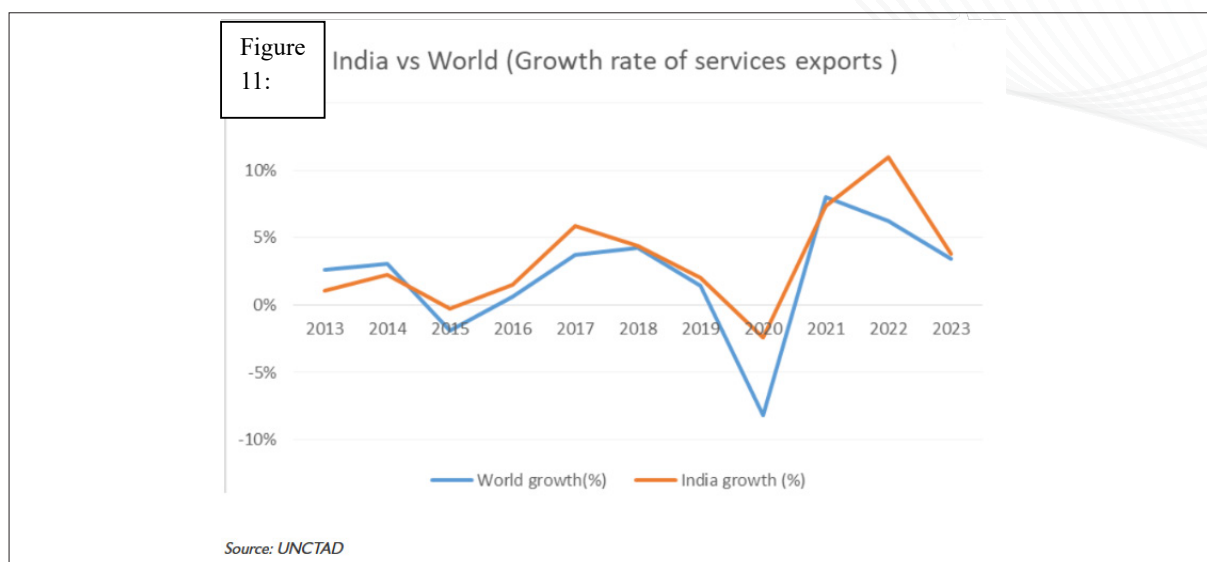
Source: ITC Trade Map

India has made remarkable progress in the services sector, becoming the seventh-largest services exporter globally, with a 4.3 per cent share of world services exports valued at approximately USD 338 billion in 2023¹⁷. India has made remarkable

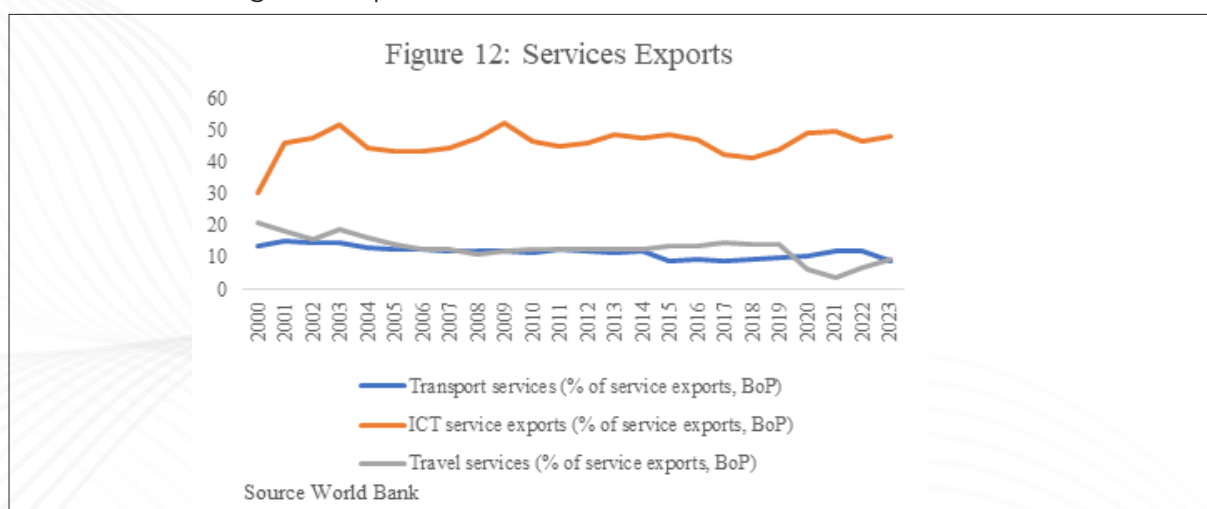
¹⁷ NITI Aayog Working paper.



progress in the services sector, becoming the seventh-largest services exporter globally, with a 4.3 per cent share of world services exports valued at approximately USD 338 billion in 2023. As per the Reserve Bank Survey¹⁸, the IT services sector is a major strength, with software services exports reaching about USD 205.2 billion in FY24, showing steady growth from USD 200.6 billion the previous year. However, to multiply India's global footprint and reduce overreliance on IT and software services, expanding into sectors like healthcare, engineering, and tourism is crucial. For example, travel services exports grew at a compound annual growth rate (CAGR) of 8.4 per cent from 2005 to 2023, reaching USD 32.19 billion and contributing 9.6 per cent to total services exports in 2023¹⁹.



Addressing quality, diversification, infrastructure, and sectoral expansion will help India better align its export supply with global demand. The professional, scientific and other business services sector has been the fastest-growing, with a CAGR of 15.6 per cent from 2005 to 2023, and exports surged from USD 9.04 billion to USD 122.11 billion, doubling its share of India's services exports from 17 per cent to 36 per cent during the same period²⁰. This diversification beyond IT into business services, travel and transport enhances India's resilience and global trade position. By addressing these areas—quality, diversification, infrastructure and sectoral expansion—India can better align its export supply with global demand and strengthen its position in international trade.



¹⁸ A survey of 7,226 software export companies yielded responses from 2,266 firms (including most major companies), collectively representing approximately 89% of India's total software services exports.

¹⁹ NITI Aayog Working paper

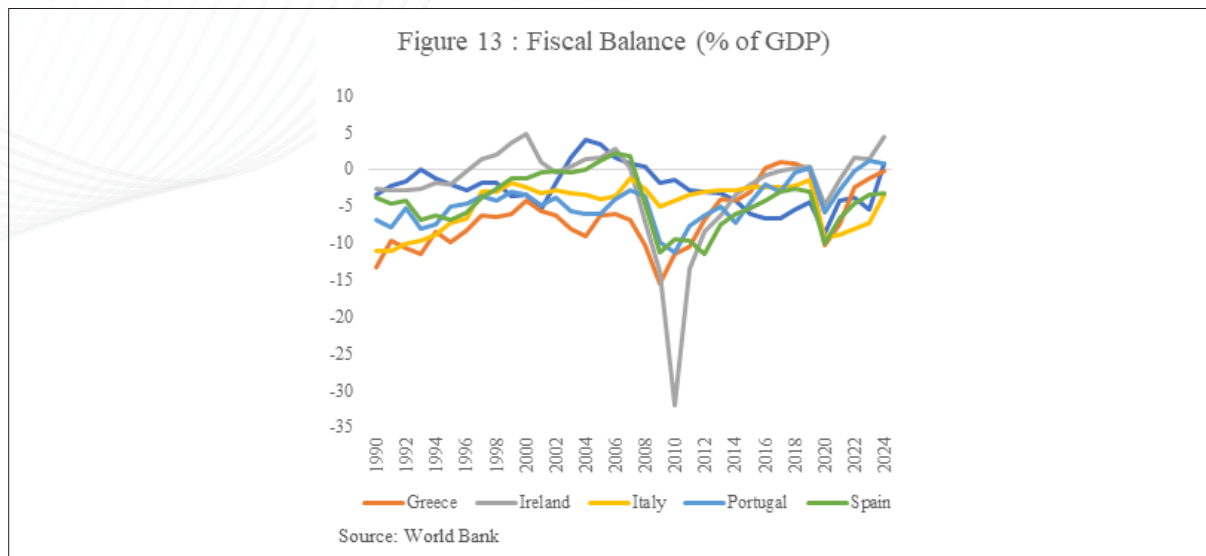
²⁰ NITI Aayog Working paper



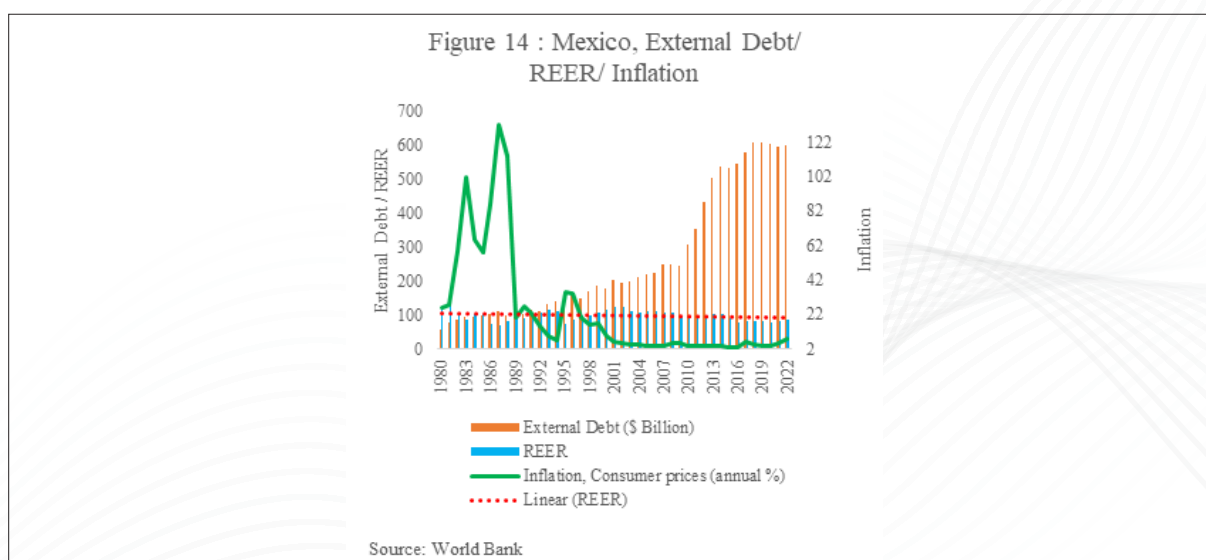
LESSONS FROM INTERNATIONAL EXPERIENCE

The global experience with capital flow liberalisation highlights critical lessons for emerging economies, especially when considering macroeconomic data and outcomes.

In the European Union, countries such as Greece, Ireland, Portugal, Spain and Italy experienced sharp capital flow volatility after the global financial crisis. For example, between 2008 and 2012, Greece's fiscal deficit soared above 10 per cent of GDP and government debt exceeded



170 per cent of GDP, while Spain and Ireland also saw deficits surpass 10 per cent of GDP at the peak of the crisis. These imbalances, combined with limited monetary policy autonomy due to eurozone membership, triggered severe capital outflows and social unrest. EU/IMF support programs, amounting to over 260 billion for Greece and 85 billion for Ireland, helped cushion these outflows but required strict fiscal consolidation-Greece, for instance, reduced its fiscal deficit from 15.1 per cent of GDP in 2009 to below 3 per cent by 2017 through extensive austerity measures (IMF, 2012). Mexico's early capital account liberalisation in the 1980s led to a surge in external debt, which reached 70 per cent of GDP by 1982 and contributed to exchange rate volatility and a severe crisis in 1994. The peso devaluation saw the currency lose more than 50 per cent of its value, and inflation spiked to over 50 per cent in 1995. Stability was restored only after Mexico adopted a floating exchange rate regime and inflation targeting in the late 1990s, which helped bring inflation down to single digits and restored investor confidence (Sedik & Sun, 2012).





Argentina's rapid opening in the 1990s resulted in persistent inflation (reaching 40 per cent in 2002), chronic fiscal deficits (averaging 3–5 per cent of GDP in the late 1990s) and repeated political crises. The country defaulted on \$95 billion of sovereign debt in 2001, the largest default at the time. Only after implementing deep macroeconomic and structural reforms, including fiscal consolidation and inflation targeting, did Argentina begin to stabilise (IMF, 2012).



Empirical studies show that, on average, capital flow liberalisation is associated with higher GDP per capita growth and lower inflation, but also with increased macroeconomic volatility and lower bank capital adequacy ratios—potential risks to financial stability. For example, panel data for 37 emerging market economies from 1995–2010 found that liberalisation increased gross capital flows by 2–3 percentage points of GDP and raised equity returns, but also heightened the risk of banking sector stress if not accompanied by strong fiscal and financial sector reforms (IMF, 2012; Sedik & Sun, 2012).

Collectively, these experiences underscore that capital flow liberalisation, if not carefully sequenced and supported by robust macroeconomic frameworks, can heighten vulnerability. Essential prerequisites for successful liberalisation include fiscal consolidation (deficits below 3 per cent of GDP), inflation targeting (bringing inflation to single digits), comprehensive financial sector reforms and the maintenance of strong foreign exchange buffers (often recommended at 10–20 per cent of GDP for emerging markets). Hence, FDI inflows and trade are more stable and dependable (less volatile) sources to mobilise external capital in India.

WAY FORWARD: MOBILISING RESOURCES FOR GROWTH AND DEVELOPMENT

To sustain high, inclusive growth and achieve its long-term development goals, India must mobilise resources equivalent to 2–3 per cent of GDP from external sources—an ambitious but attainable target given its strong macroeconomic fundamentals. The country's improving current account position, robust forex reserves, stable exchange rate, and resilient financial system provide a solid foundation for attracting sustained capital inflows. To fully leverage these strengths, India must advance structural reforms, enhance policy transparency and adopt targeted sectoral strategies aimed at strengthening both domestic and international sources of capital.



Mobilising Domestic Resources

i. Enhance Domestic Savings and Investment:

India must raise its investment rate from 31 per cent to about 35 per cent of GDP to sustain long-term growth. This requires shifting household savings toward financial assets, encouraging private sector participation and capitalising on global trends like the “China plus one” strategy. Strengthening the corporate sector will further support investment and savings, reinforcing a self-sustaining growth cycle.

ii. Improve Fiscal Management

Enhancing fiscal discipline through higher tax-to-GDP ratios, improved tax compliance and rationalised subsidies will free up resources for development. Reducing debt-to-GDP ratios via prudent expenditure management will improve investor confidence and create space for long-term external financing.

iii. Strengthen the Corporate Bond Market

A deep corporate bond market is crucial for domestic capital mobilisation. Key reforms—such as a stronger bankruptcy framework, liquid secondary markets and transparent regulations—will attract long-term institutional investors and ease the burden on bank-led financing.

iv. Deepen and Liberalise Capital Markets

Reforms to increase market participation—like raising FPI limits, permitting hybrid instruments and reclassifying certain investments as FDI—can broaden the investor base. Simplifying sectoral caps and regulatory processes will enhance capital access and align domestic markets with global standards, facilitating more external resource inflows.

Mobilising International Resources

i. Attract Foreign Direct Investment (FDI)

India attracted \$71.28 billion in FDI in 2023-24, supported by liberalised norms and improved ease of doing business. Reforms like the single-window clearance system, coupled with infrastructure investments and the PLI scheme, have boosted manufacturing-linked FDI by 69 per cent over a decade. Continued focus on regulatory simplification and competitive federalism will help sustain and scale FDI inflows toward the 2-3 per cent GDP target.

ii. Expand Trade and Global Integration

Exports rose to \$778.21 billion in 2023-24—a 67 per cent increase since 2013-14—driven by competitiveness in electronics, pharmaceuticals and services. Initiatives like Bharatmala, Sagarmala and the National Logistics Policy have enhanced efficiency and reduced trade costs. Deepening global value chain integration will support sustained export-led growth and complement external capital mobilisation.

iii. Leverage Services Trade

India's global leadership in services—especially IT, healthcare and digital platforms—presents a powerful lever for attracting foreign investment and diversifying exports. Continued investment in digital infrastructure, skill development and innovation will ensure that services trade remains a core engine for growth and external resource generation.

iv. Manage Exchange Rate Stability and Capital Flows

Maintaining exchange rate stability through strategic forex interventions and credible



inflation targeting is vital for investor confidence. An adaptive monetary policy framework that mitigates volatility and clearly communicates policy intent will ensure stability in capital flows and reinforce India's macroeconomic credibility.

v. Develop International Financial Services

GIFT IFSC is a pivotal platform for channeling foreign capital into India. With world-class infrastructure, flexible regulations and global connectivity, it is set to become a financial gateway that supports India's goal of mobilising 2-3 per cent of GDP from external sources. By fostering innovation and expanding access to international markets, GIFT IFSC strengthens India's global financial integration.

CONCLUSION

India's external resource mobilisation strategy is deeply rooted in a sound macroeconomic framework, carefully sequenced liberalisation and a pragmatic understanding of the global financial landscape. Confronting the constraints of the Mundell-Fleming trilemma, India has adopted a calibrated policy mix that preserves monetary autonomy while gradually opening its capital account and maintaining exchange rate stability. This strategic approach is essential as the country strives to achieve high-income status by 2047 and fulfil its Sustainable Development Goals. The main thrust of this strategy lies in mobilising 2-3 per cent of GDP in external resources to bridge the investment gap and elevate gross capital formation. The policy recommendations derived from this trajectory are clear: India must deepen domestic financial markets, especially the corporate bond market and enhance fiscal discipline to increase public investment efficiency. Simultaneously, it should expand FDI inflows through continued regulatory simplification and competitive federalism, while leveraging trade, particularly in high-growth sectors like services and digital platforms, to enhance global integration. Maintaining macro-financial stability, especially through transparent capital flow regulations and credible monetary policy, remains vital. Finally, strengthening an international financial platform such as GIFT IFSC can significantly bolster India's position as a global financial hub. Together, these measures form a cohesive roadmap to unlock external capital, sustain inclusive growth and transition India into an advanced economy by its centenary.

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SESSION 3

A Modern Financial Architecture for a Fast-Growing Economy



Session Chair:
Ashwani Bhatia

Whole Time Member
Securities and Exchange Board of India, Mumbai (India)



Speaker 1:
Rajnish Mehra

NBER and NCAER
Arizona State University,
(United States)



Speaker 2:
Neelkanth Mishra

Chief Economist
Axis Bank



Speaker 3:
Rajeswari Sengupta

Associate Professor
Indira Gandhi Institute of
Development Research (IGIDR),
Mumbai (India)



Speaker 4:
Siddhartha Sanyal

Chief Economist and Head (Research)
Bandhan Bank, Mumbai (India)



SESSION 3 SUMMARY

India's high-growth aspirations hinge on a dynamic financial system that mobilises savings, channels capital productively, and fosters innovation. While recent advances in digital finance and equity markets have boosted access and participation, significant gaps remain in long-term financing, credit delivery, and market depth.

Household savings remain skewed towards physical assets, with over 70% in non-financial forms. Though digital platforms, mutual funds, and SIPs are gaining traction, more needs to be done to channel savings into productive investments. Corporate self-financing has risen, reducing reliance on credit but also dampening capital expenditure.

India's equity market is robust, yet risks from high valuations and shallow mid- and small-cap segments persist. More critically, the corporate bond market is underdeveloped—constrained by weak secondary markets, credit risks, and low investor confidence—limiting long-term finance for infrastructure and innovation. Digital transformation has revolutionised retail finance, but rapid fintech expansion introduces cyber risks and regulatory challenges. CBDCs promise efficiency and inclusion but must avoid destabilising banks.

Green finance remains nascent despite sovereign green bond issuance. Climate-aligned finance requires taxonomies, disclosures, and participation from DFIs. Financial inclusion, especially for women, MSMEs, and rural areas, also remains inadequate.

To build a modern financial architecture, India must deepen bond markets, diversify financial products, and strengthen institutional investment. Regulatory reforms, digital infrastructure, and data governance must support innovation while safeguarding stability. Climate finance, inclusive tools, and financial literacy must be prioritised. A hybrid model—balancing market-led intermediation with policy direction—will help meet India's growth and sustainability goals.



A Modern Financial Architecture for a Fast-growing Economy



Ashwani Bhatia

Securities and Exchange Board of India

INTRODUCTION

The Viksit Bharat @2047 initiative envisions India as a developed nation by the centenary of its independence in 2047. This transformative roadmap emphasises inclusive development, sustainable progress and effective governance. This would entail a sustained pace of economic development, characterised by high growth rates fueled by virtuous cycles of savings and investment.

India's Standing vis-à-vis the United States and Europe in terms of Market-based Finance

Relative to their respective economies, the European Union's (EU) capital markets are much smaller and bank balance sheets much larger than those in the United States (US). In the EU, market capitalisation of listed equity amounts to about 90 per cent of GDP, compared to a market capitalisation to GDP ratio above 180 per cent in the United States (US). The corporate debt market in the EU is also disproportionately smaller in size relative to the US. On the flip side, total banking sector assets amount to about 160 per cent of GDP in the EU, compared to about 80 per cent of GDP in the US.

The larger size of the capital markets of the US, compared to those of the EU, is on account of various factors. In the US, the Glass-Steagall Act, passed in 1933, separated securities underwriting from banking as against the tradition of universal banking in Europe. Further, in Europe, a relatively much larger role played by small and medium enterprises (including many businesses which are family owned) in the overall economic structure. Such small industries prefer bank loans and investments in unlisted equities over market-based finance. Furthermore, in Europe, public pensions and social security schemes are often mandatory and therefore well developed. This is in sharp contrast to the large volume of defined-contribution savings plans in the US.

Capital markets facilitate the efficient allocation of financial resources, drive investments in innovation and support overall economic stability. In the US, the capital markets are characterised by high liquidity, broad investor participation and a dynamic environment that fosters substantial economic growth and adaptation. In contrast, the European capital markets are hampered by fragmentation, regulatory diversity and limited integration across national borders. These challenges have curtailed the growth and efficiency of European markets, contributing significantly to the broader economic divergences with the US.



In India, relative to its size, the equity market is one of the largest globally, while its bond market is comparatively smaller. India ranks 4th globally in terms of market Capitalisation, which is about 1/10th of the size of the US. However, India's corporate bond market size is 1/19th of the US's corporate bond market.

Recent Trends in Market Based Financing in India

India has traditionally been a bank-led economy; however, in recent years, market-based fundraising has picked up across segments (equity, debt & hybrid as well as private finance vehicles like Alternative Investment Funds (AIFs).

The total funds raised (equity + debt) raised by corporates during last three financial years (i.e., in FY22, FY23 and FY24) and the first six months of this year (FY25 till September) were USD 111 billion, USD 115 billion, USD 127 billion and USD 80 billion, respectively. They form 179 per cent, 119 per cent, 81 per cent and 228 per cent of the incremental bank lending to the industrial and services sectors in these periods.

- Outstanding corporate debt has increased at a CAGR of ~10 per cent over last 5 years (Sep-19 till Sep-24). Further, the ratio of outstanding corporate bonds to bank credit outstanding to large industries and services stood at 65 per cent as of the end of March 2024, as against 43 per cent as of the end of March 2015. Going forward, bond markets are expected to be a major fulcrum for financing Indian corporates, along with bank credit.
- REITs and InvITs, instruments for monetising real estate and infrastructure projects, respectively, have also picked up in the last few years. The combined amount raised in the last three financial years and the first six months of this year (FY25 till September) has been USD 2.9 billion, USD 0.8 billion, USD 4.7 billion and USD 1.2 billion, respectively. Also, cumulative AUM of InvITs and REITs stood at USD 65 billion and USD 17 billion respectively, as of March 31, 2024.
- India's thriving start-up ecosystem, supportive regulatory framework, a steadily growing pool of domestic investors and unique investment opportunities with potentially higher returns have fueled the growth of AIFs. The commitments raised by AIFs have seen a more than threefold increase, reaching USD 165 billion at the end of September 2024 from USD 52 billion at the end of 2019-20. Also, over the past five years (as of September 2024), both the amount of funds raised and investments made have grown substantially, reaching USD 67 billion and USD 60 billion respectively.

Simultaneously, Indian market has also witnessed significant growth of investors' participation, supported by the massive scale of digital transformation taking place in the country (Table 1).

Table 1: Investor Participation in Indian Markets

Particulars	Mar-19	Nov-24
Number of demat accounts (in million)	36	182
Mutual Fund AUM (in USD billion)	344	805
No. of Mutual Fund Folios (in million)	82	221
No. of unique Mutual Fund investors (in million)	20	51
Monthly SIP investment (in USD million)	1,164	2,995
Combined AUM of NPS and APY (in USD billion)	46	160

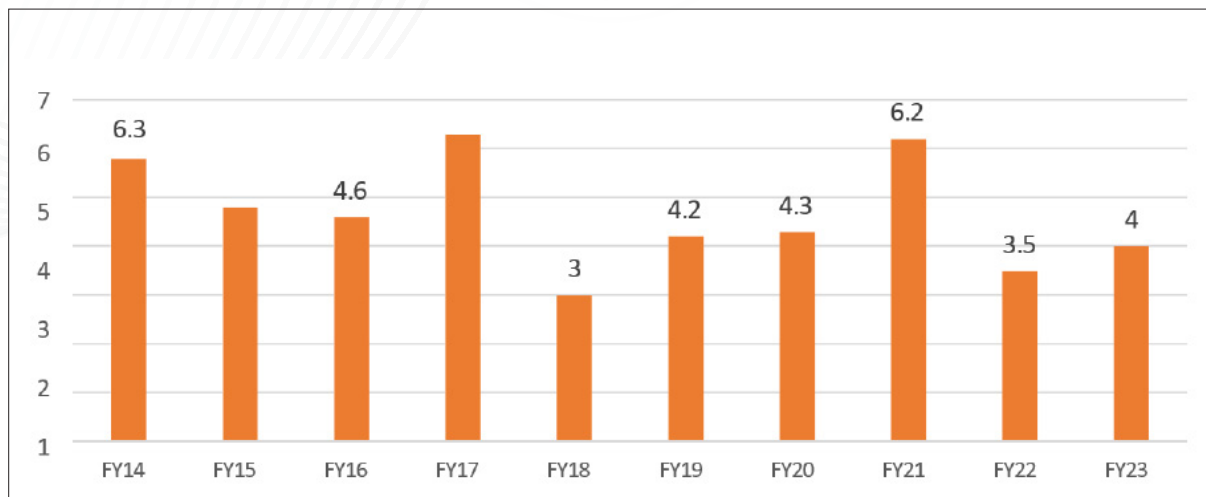
Sources: NSDL, CDSL, AMFI and PFRDA



Trend in Financial Savings of Households

Growing investor participation in capital markets is reflected in trend and composition of financial savings of households. While bank deposits have traditionally been the preferred investment instrument for households, the share of deposits in gross financial savings reduced after the pandemic as other instruments yielded higher returns (Chart 1).

Chart 1: Share of deposits in Gross Financial Savings of Households (as % of GNDI)



Source: RBI

Projection of Some Important Parameters of Indian Capital Markets for 2030

Given the evolving role of market-based finance as well as growing investor participation, India's financial architecture is likely to undergo a change, leading to sophistication (Table 3).

Table 3: Projection of Some Major Parameters Pertaining to Securities Markets*

Parameters	As of March 2024	Projections for 2030
Market Cap (USD trillion)	4.6	9.8
Global Ranking in terms of Market Cap	5	3
Market cap to GDP (in %)	120%	135%
MF (AUM) (in USD trillion)	0.64	1.35
NPS & APY (AUM) (in USD trillion)	0.14	0.53
FPI (AUC) (in USD trillion)	0.83	1.60
Corporate Bonds Outstanding (in USD trillion)	0.57	0.90

*Values have been projected taking into account historical growth rates of the parameters and are indicative only.

Key Challenges:

Financing Infrastructure

Infrastructure creation is of great significance in view of facilitating sustained fast paced economic growth and employment generation. In addition, creating new and upgrading existing infrastructure becomes imperative, in view of, increasing trend of urbanisation in India along with peaking of the population in the working-age group as and the burgeoning climate risks that India faces.

With an infrastructure investment requirement of at least 8-10 per cent of GDP annually, India's infrastructure gap has been estimated at 4.1 per of GDP per annum, rising to 5.3



per cent when adjusted for climate requirements. Over the period 2024-30, it is estimated that infrastructure investment will need to rise to USD1.7 trillion²¹. In recent years, India has made and committed substantial infrastructural investment via policy measures such as the National Infrastructure Pipeline (NIP), PM Gati Shakti National Master Plan, Bharatmala Pariyojana and Sagarmala Pariyojana requirements.

Drawing from cross-country experiences, there needs to be a graded approach to infrastructure financing, with a mix of instruments at various stages of an

infrastructure projects. As such, infrastructure financing through banks and DFIs needs to be supplemented in a big way through corporate debt markets. In addition to corporate debt, hybrid securities, i.e., units of Real Estate Investment Trusts (REITs), Small and Medium REITs (SM REITs) and Infrastructure Investment Trusts (InvITs) could also act as means for financing infrastructure. Apart from financing residential and commercial real estate and traditional infrastructure assets such as power generation, logistics and transportation networks, there is scope of REITs/ SM REITs/InvITs to include social infrastructure like private schools, colleges, hospitals and leasable assets like shipping and aviation, etc.

The setting up of National Bank for Financing Infrastructure and Development (NaBFID), a specialised Development Financial Institution (DFI), in 2021 is a major step by the Government for debt financing of infrastructure. As infrastructure projects are long gestating in nature, their debt repayment capacity is constrained in the initial years. SPVs, which manage such projects, would initially prefer financing in the form of equity and subsequently, when cash-flows start accruing, opt for debt financing.

SEBI, over the past two years, has focused on proposing/drafting regulations to enhance uptake of market-based financing through corporate debt and hybrid instruments towards promoting the development of corporate debt market. SEBI has been taking a systematic approach by strategically putting together a set of essential and mutually reinforcing measures together. Some of the key measures include strengthening the governance mechanism of Credit Rating Agencies, strengthening the role of debenture trustees, introduction of Electronic Book Provider (EBP) Platform, Development of repo market in corporate bond and various measures aimed at widening the issuer base and encourage retail participation in corporate debt market.

However, despite these measures, the size of the corporate bond market in India relative to its GDP remains small compared to some of the other major emerging market economies. The corporate debt market in India is dominated by highly rated issuers with more than 90 per cent of the issuance and trading in corporate bond market within just the top 3 categories of AAA, AA+ and AA. In the primary market, a large bulk of issuances every year is through the private placement route rather than through public issuances. Further, the majority of the issuances are by financial issuers who contribute around 65-75 per cent of amount issued. The

liquidity in the secondary market remains low, though the trading volumes have witnessed growth over the years, on an absolute basis. As such infrastructure financing landscape in India is dominated by bank lending, often, skewed towards few sectors such as power and roadways.

Way Forward: Ensuring Expansion in Corporate Debt Markets and Hybrid Instruments

A. Enhancing the scope and utility of bidding and allotment of debt securities through

²¹ Financing India's Aspirations (Keynote Address delivered by Michael Debabrata Patra, Deputy Governor, Reserve Bank of India - September 3, 2024 - at the Financing 3.0 Summit: Preparing for Viksit Bharat organised by the Confederation of Indian Industries (CII) at Mumbai, India/



EBP Platform.

- B. Expanding the usage of Request for Quotes (RFQ) Platform in secondary market through wider participation to enhance liquidity in corporate bonds
- C. Lowering the issue size and/or adding further features and incentives for MSMEs
- D. Strategies for REITs and InvITs
 - i. Emphasis on Monetisation as a matter of government policy across all levels.
 - ii. Harnessing NABFID and other institutions to establish REITs, SM REITs and InvITs.
 - iii. Introducing variants of REITs/ InvITs or differentiated classes or categories may be considered, which provide more options for sponsors and developers, investors and intermediaries to further develop and enhance the market.

Financing urban Infrastructure

In the urban infrastructure space, it is observed that municipal revenues/expenditures in India have stagnated at around 1 per cent of GDP for over a decade. Of the total revenues of 201 municipal corporations whose budgetary data were available, own tax revenue accounted for 30 per cent, non- tax revenue for around 30 per cent, transfers from State Governments for about 35 per cent and transfers from Central Governments for 5 per cent.

The municipal bond market accounts for an insignificant part of our GDP, with large inter-State variations. Funds raised from capital markets through bond issuances by Municipal Corporations at less than a tenth of the total borrowings remain an underutilised source of financing. Most municipal bonds have maturities less than 10 years, impeding their use for long-term infrastructure projects. Urban Local Bodies often lack the capacity for long-term capital expenditure planning and struggle to generate adequate revenue. Weak recovery of operational and maintenance costs, overreliance on grants and the absence of risk-sharing instruments for borrowers with investment-grade ratings further hinder growth of municipal debt markets.

Way Forward: Financing Urban Infrastructure

- A. Popularisation of Pooled Finance Vehicles:** There is a need to promote the pooled finance mechanism as a vehicle sustaining solely on the finances of the collective of Municipal Corporations and ULBs, with partial credit enhancements or guarantees, if required, which will make them more attractive for the investors.
- B. Harnessing of REITs, SM REITs and InvITs in monetising infrastructure assets:** Municipalities can consider utilising REITs/InvITs and SM REITs to monetise their revenue-generating assets, and as mentioned earlier, be encouraged to do so.
- C. Investor Education and Awareness:** Investor awareness and education, including for retail and investment institutions (EPFO, PFs/NPS, Insurers, MFs) should also be undertaken at regular intervals which shall aid this vision.

Climate (including Transition) Finance

With regards climate risk, India ranks amongst one of the most vulnerable countries in the world. It is estimated that climate change will negatively affect India's economy, leading to an annual GDP loss of 3 per cent to 10 per cent by 2100.

Over the years, SEBI has taken various measures to enable the mobilisation of resources for climate finance. The framework of Green Debt Securities was introduced by SEBI in 2017. The framework holistically defines what constitutes a green debt security, which is provided



under the SEBI Non-Convertible Securities (NCS) Regulations. As per extant definition, 'green debt security' means security issued for raising funds, to be utilised for project(s) and/ or asset(s) falling under categories which inter alia include renewable and sustainable energy, clean transportation, climate change adaptation, energy efficiency and sustainable waste management.

With a view to expanding the scope of sustainable finance in Indian securities market, SEBI specified the frameworks for issuance of social bonds, sustainability bonds and sustainability-linked bonds, which together with green debt securities, will be termed Environment, Social and Governance (ESG) Debt Securities. Also, SEBI has been one of the early adopters of sustainability reporting for listed entities and requires mandatory ESG-related disclosures for the top 100 listed entities (by market capitalisation) since 2012. Over the years, the requirement was strengthened to cover the top 500 and then the top 1000 entities. SEBI also introduced the BRSR Core for assurance by listed entities as well as the disclosures and assurance for the value chain of listed entities, as per the BRSR Core. In July 2023, SEBI formulated a regulatory framework for ESG Rating Providers (ERPs) in order to facilitate greater transparency in ESG rating process. This framework inter-alia prescribes guidelines for registration of ERPs, general obligations of ERPs, manner of inspection and code of conduct applicable to ERPs. India is the first country to have such a regulatory framework for ERPs.

Despite various measures by the Government and SEBI, climate finance continues to fall short of estimated needs given the extent of India's vulnerability against climate risks. India needs USD 10.1 trillion between 2020 and 2070 to achieve its net-zero target²². Conventional sources of capital are expected to provide USD 6.6 trillion, leaving a substantial investment gap of USD 3.5 trillion. To bridge this gap, India requires investment support worth USD 1.4 trillion until 2070, with an annual average of USD 28 billion over the next 50 years. Furthermore, growth of climate finance is not sufficient nor consistent across sectors and adaptation finance continues to fall short of the estimated needs.

Way Forward: Bridging the Climate Financing Gap

- A. Continuous Product Innovations:** Developing new products such as instruments for raising sustainable finance (including green bonds, social bonds, sustainable bonds and sustainability-linked bonds, etc. can assist corporates for meeting their sustainability objectives and help meeting India's Nationally Determined Contribution (NDC).
- B. Enhancing Sustainable Finance Ecosystem:** In conjunction with developing new products or instruments for raising sustainable finance (as noted above), development is also required of a robust ecosystem which supports the issuers, intermediaries and investors. Accordingly, ESG Rating Providers could also be supplemented with Independent External Reviewers (IERs) that examine the objects of an issuer or use of its proceeds or of the goals and targets taken in course of the sustainable finance instruments.
- A. Enhancing disclosure practices** across the financial sector, ensuring they are aligned with global standards.
- B. Capacity-building initiatives** to educate investors about the green bond market, along with the development of a national pipeline of green projects aligned with the announced climate finance taxonomy

²² <https://www.climatepolicyinitiative.org/transforming-indias-climate-finance-through-sector-specific-financial-institutions/>



CONCLUSION

Assuming US as the frontier in terms of having sophisticated market architecture for financing growth, it may be argued that Indian equity markets are world class in terms of size and depth and its scale is only going to expand in coming years, along with wide investor participation. However, we lag behind considerably in terms of size and depth of corporate debt markets. Enhancing the size of debt and hybrid markets assumes increased significance in view of our infrastructure financing requirement, growing urbanisation and burgeoning climate risks. The debt and hybrid instruments markets have picked up in recent years in terms of quantum of flows in them and their increasing share in financing corporate investments. However, continued efforts from SEBI along with Government of India will be required so as to further the market development and deepening of these instruments.

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India's Financial Sector Evolution: Challenges and Opportunities in Financing Economic Growth



Rajnish Mehra

Arizona State University NBER and NCAER

INTRODUCTION

India's financial sector has undergone transformative reforms over the past fifteen years, fundamentally reshaping its structure and capabilities. The implementation of strategic initiatives has dramatically improved financial inclusion and technological integration across the country.

The Pradhan Mantri Jan Dhan Yojana represents a landmark achievement in financial inclusion, providing banking access to previously unbanked populations and revolutionising financial access in rural India. As of 2024, the program has facilitated the opening of over 500 million bank accounts, establishing itself as one of the largest financial inclusion initiatives globally.

The introduction of the Unified Payments Interface (UPI) has similarly transformed India's payment ecosystem, enabling seamless digital transactions nationwide. With the UPI system now processing over 10 billion transactions monthly, it demonstrates the profound impact technological innovation can have on financial services delivery.

Complementing these developments, enhanced credit bureaus have streamlined credit assessment processes, while the Reserve Bank of India's interest rate deregulation has fostered a more competitive lending environment.

According to the IMF's Financial Development Index (FDI), which evaluates financial institutions and markets based on depth, access and efficiency, India currently scores 0.53 on a scale of 0 to 1. This positions India ahead of many emerging markets but behind advanced economies, which typically score above 0.7. For context, China scores around 0.65, while most emerging markets range between 0.2 and 0.4. This intermediate standing reflects both India's substantial progress and the significant challenges ahead in developing a financial system capable of supporting its economic growth aspirations.

Despite these advances, notable asymmetries persist in India's financial sector development. While market efficiency scores impressively at 0.93 due to well-developed equity markets, access to financial markets remains limited at 0.2, highlighting ongoing challenges in the banking sector's depth and inclusivity. These disparities emphasise the need for a more



balanced approach to financial sector development that strengthens both institutional capacity and market accessibility. To understand the magnitude of these challenges in the context of India's ambition to become an advanced economy by 2047, it is essential to examine the country's current economic position in the global landscape.

INDIA'S ECONOMIC POSITION AND GROWTH CHALLENGES

Table 1: Relative per capita GDP ranking of G-20 countries 1970-2029

G20 Countries	1970(UN Estimates)	1980 (IMF)	1990 (IMF)	2000 (IMF)	2010 (IMF)	2020 (IMF)	2029 (IMF Estimates)
United States	1	3	2	2	2	1	1
Canada	2	4	4	4	3	4	4
Australia	3	6	8	7	1	2	2
France	4	2	3	6	6	5	6
Germany	5	5	7	5	5	3	3
United Kingdom	6	7	5	3	7	6	5
Italy	7	9	6	8	8	9	7
Japan	8	8	1	1	4	7	9
Russia/USSR	9	N/A	N/A	16	11	12	13
Argentina	10	10	11	11	14	15	15
Saudi Arabia	11	1	9	10	10	10	10
Mexico	12	11	13	12	15	13	14
South Africa	13	12	14	15	16	17	17
Turkey	14	13	12	13	13	14	11
Brazil	15	15	15	14	12	16	16
South Korea	16	14	10	9	9	8	8
China	17	17	18	17	17	11	12
India	18	18	17	19	19	19	19
Indonesia	19	16	16	18	18	18	18

Table 1 illustrates the formidable challenge India faces in its ambition to transition to an advanced economy by 2047. The relative per capita GDP rankings of G-20 countries from 1970 to 2029 reveal a compelling narrative about economic mobility among nations.

A striking observation from the data is the remarkable stability in relative rankings among most G-20 nations, with South Korea and China as notable exceptions. This stability stems from the dynamic nature of economic growth - since all countries experience growth, achieving significant upward mobility requires consistently outpacing the growth rates of advanced economies by substantial margins.

India's trajectory in this context is particularly noteworthy. Despite achieving impressive absolute economic growth rates, India's relative position among G-20 nations in terms of per capita GDP has remained essentially unchanged since 1970, consistently ranking among the lowest in per capita income. This persistence in ranking underscores the magnitude of the challenge ahead.

The primary factors behind this slow transition are rooted in historical and structural challenges. India has contended with chronic underinvestment in infrastructure, suboptimal capital formation and productivity in key sectors and rigidities in the labour market. Consequently, India's growth model has been predominantly services-driven rather than manufacturing-led.

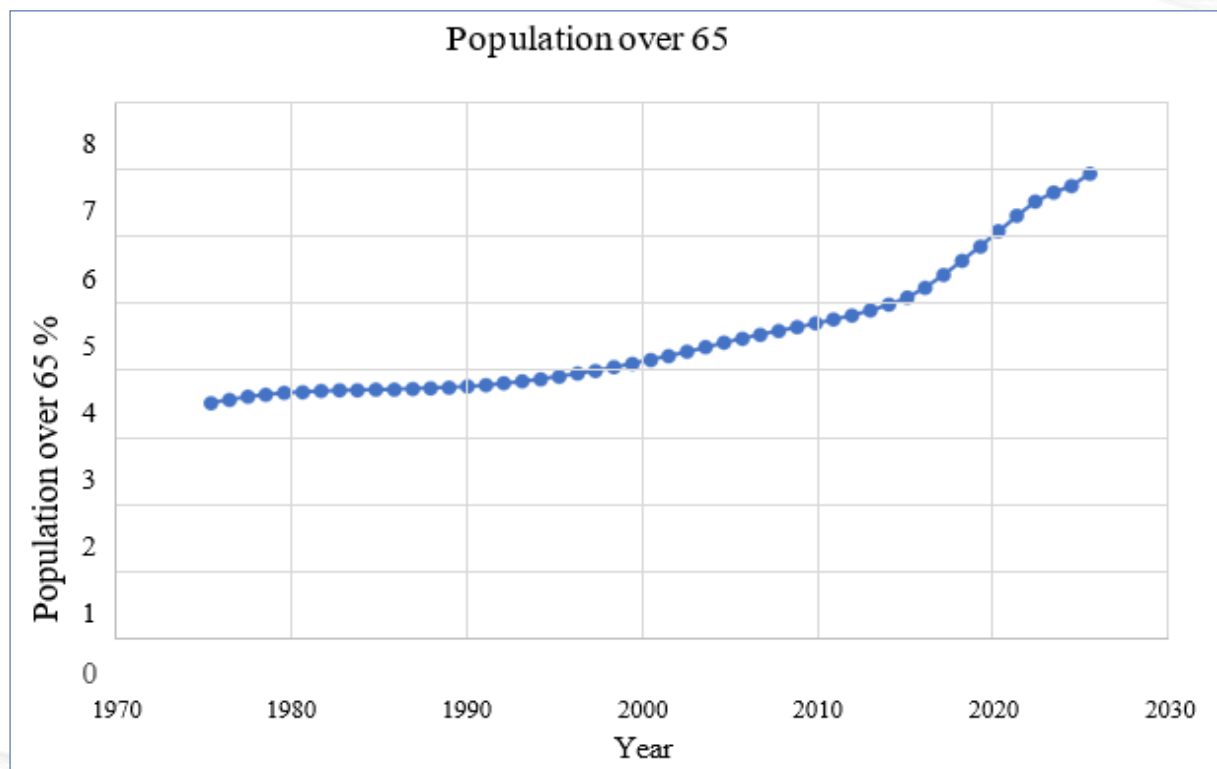


While this services-oriented approach has yielded remarkable achievements in information technology and business process outsourcing, it has not generated the broad-based industrial growth typically associated with economic transformation. A critical constraint of the services-led growth model is its dependence on an educated workforce, which has emerged as a significant bottleneck in recent years.

In contrast, manufacturing-led growth often proves more inclusive in developing economies due to its lower educational requirements for workforce participation. These structural challenges take on added complexity when viewed alongside India's demographic transition, which presents both opportunities and obstacles for economic advancement.

DEMOGRAPHIC TRANSITIONS AND SAVINGS PATTERNS

Figure 1: Population over 65: 1970-2030



The Demographic Challenge

India stands at a pivotal demographic juncture with far-reaching implications for its financial markets and savings patterns. As illustrated in Figure 1, the percentage of the population aged 65 and above has been steadily increasing, with projections indicating a significant rise from current levels of approximately 7 per cent to nearly 15 per cent by 2050. This demographic transition presents both challenges and opportunities for the financial sector, demanding innovative approaches to savings mobilisation and investment.



Figure 2: Household Savings/ GDP vs population over 65 (%)

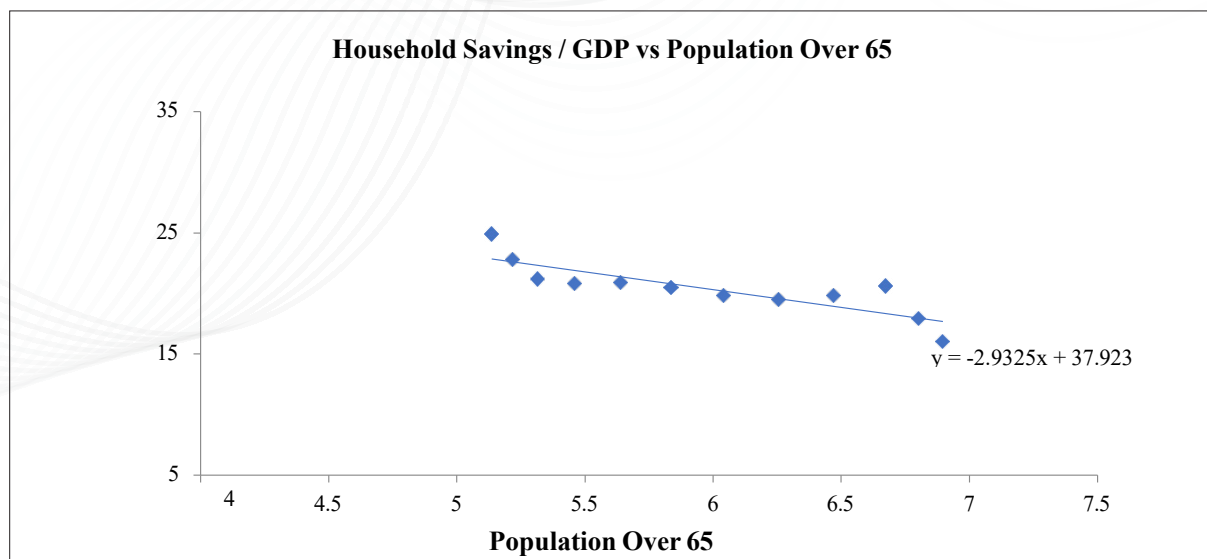
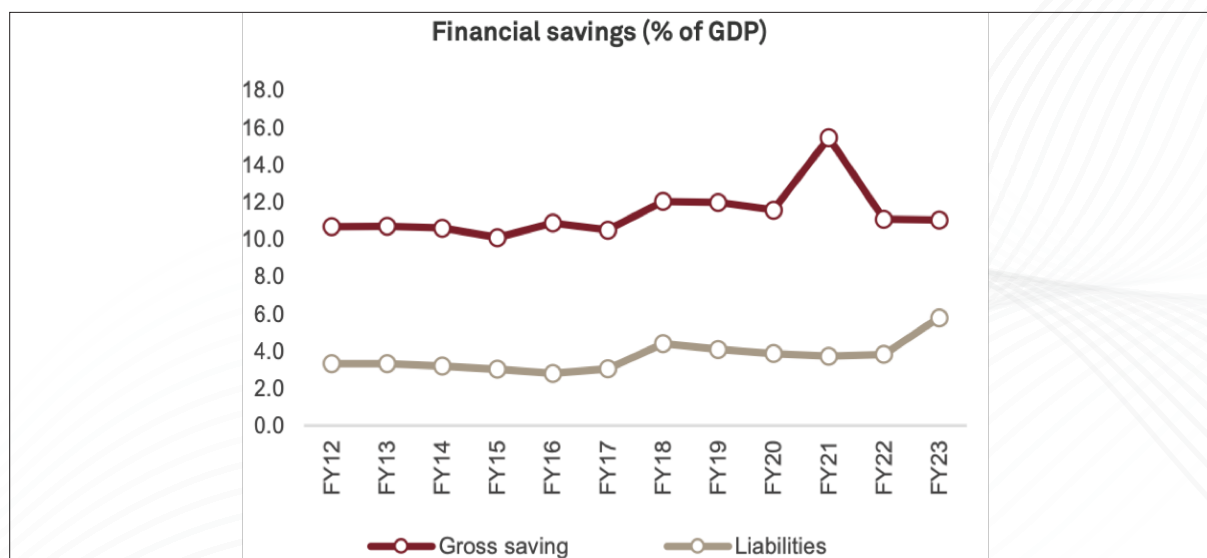


Figure 2 shows a significant negative correlation between the aging population and household savings rates. Regression analysis indicates that a one percentage point increase in the population over 65 corresponds to approximately a 2.9 percentage point decline in the household savings rate. This relationship reflects a natural lifecycle pattern where retired individuals draw down accumulated savings to finance consumption, underscoring the critical importance of developing financial products to help maintain adequate savings rates in an aging society.

The impact of demographic change on savings behaviour is particularly significant, given India's ambitious growth objectives. As the dependency ratio increases, the financial sector faces the dual challenge of developing sophisticated products that can both maintain high savings rates and provide for the needs of an aging population. This challenge is further complicated by India's relatively underdeveloped pension system compared to advanced economies, characterised by limited coverage and low replacement rates.

SAVINGS COMPOSITION AND INVESTMENT PATTERNS

Figure 3: Financial Savings as Percentage of GDP





The structure of household savings in India provides insights into cultural preferences and institutional constraints. With household savings standing at 18.4 per cent of GDP and approximately 70 per cent invested in physical assets, there is a marked preference for tangible investments over financial instruments. This preference has deep historical roots in India's experience with financial market uncertainty and episodes of policy-driven asset expropriation, dating back to the Mughal era and continuing through various post-independence policies such as bank nationalisation and demonetisation.

The historical context of asset expropriation is crucial for understanding contemporary savings behaviour. The Mansabdari System under the Mughals, where property and titles were routinely confiscated after death, established a long-standing cultural preference for portable, easily concealed assets like gold²³. This preference was further reinforced during the colonial period and post-independence era through various policy actions that eroded trust in financial institutions.

As illustrated in Figure 4, the post-pandemic period witnessed a marked shift in savings behaviour, with households increasingly allocating resources toward physical assets despite significant advancements in financial markets. This trend highlights the necessity for policy interventions addressing structural and behavioural barriers to redirect savings into more productive financial instruments. Notably, initiatives such as Systematic Investment Plans (SIPs), which achieved monthly inflows of 15,000 crore by 2023, demonstrate the potential of well-structured financial products to attract retail investors through consistent returns and transparency.

Currently, only 15-20 per cent of Indian households invest in equities, reflecting limited penetration of financial assets in household portfolios. There is a perception that a change in the composition of the portfolio of savings will lead to a higher growth rate, specifically reducing the holdings of gold and increasing the holdings of financial assets. However, this cannot be addressed without a model linking investment and growth.

Savings in physical assets can be channeled into financial assets through targeted approaches. One effective approach is to enhance tax incentives for long-term investments in equity, mutual funds and pension products. Expanding tax benefits under Section 80C of the Income Tax Act, beyond the current 1.5 lakh limit for equity-linked savings schemes (ELSS), could incentivise retail investors to allocate savings toward productive financial instruments. Additionally, deepening pension and insurance penetration through schemes like the National Pension System (NPS) and promoting insurance-linked investments can mobilise long-term savings.

Digital financial inclusion is equally critical for integrating informal sector savings into formal financial channels. Platforms such as Zerodha and Groww, which add 1 million new demat accounts monthly, have simplified market access for retail investors. Developing retail-focused investment vehicles with lower entry barriers and products like the Bharat Bond ETF (which attracted 50,000 crore from retail investors) can further broaden financial market participation. The success of initiatives like the LIC IPO, which garnered 10.9 crore retail bids, underscores the latent demand for well-structured financial products.

Dematerialisation of physical assets represents another strategic avenue. Encouraging the conversion of assets such as gold and real estate into financial instruments through sovereign gold bonds (SGB) or Real Estate Investment Trusts (REITs) can channel household savings into productive investments. The SGB scheme, which raised 72,274 crore (146.96 tonnes) through 67 tranches since its inception in November 2015, exemplifies the efficacy of well-designed financial products in attracting household savings.

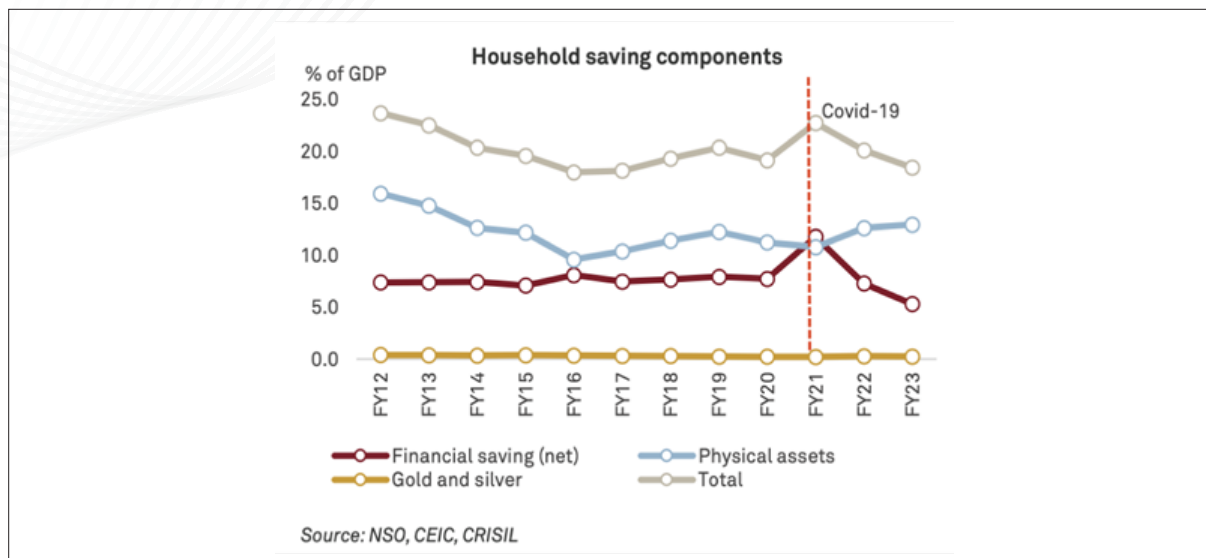
²³ The travelogues of Jean-Baptiste Tavernier and François Bernier provide detailed descriptions of life in the Mughal court



Expanding financial market access by developing regional markets in Tier 2 and Tier 3 cities can unlock local wealth for broader investment purposes. Encouraging foreign institutional investors, including sovereign wealth and pension funds, to invest in India's infrastructure and growth sectors can further deepen the corporate bond market by enhancing transparency, credit ratings and liquidity.

While these innovations signify substantial progress, the development of India's corporate debt market remains a pivotal next step in the evolution of the country's financial sector.

Figure:4 Household Saving Components as Percentage of GDP



CORPORATE DEBT MARKET DEVELOPMENT

Figure 5: Evolution of the Financial Sector in India, 2000-2020



MARKET STRUCTURE AND EVOLUTION

As India pursues its trajectory toward advanced economy status, developing robust corporate debt markets stands out as a crucial missing piece in its financial architecture.

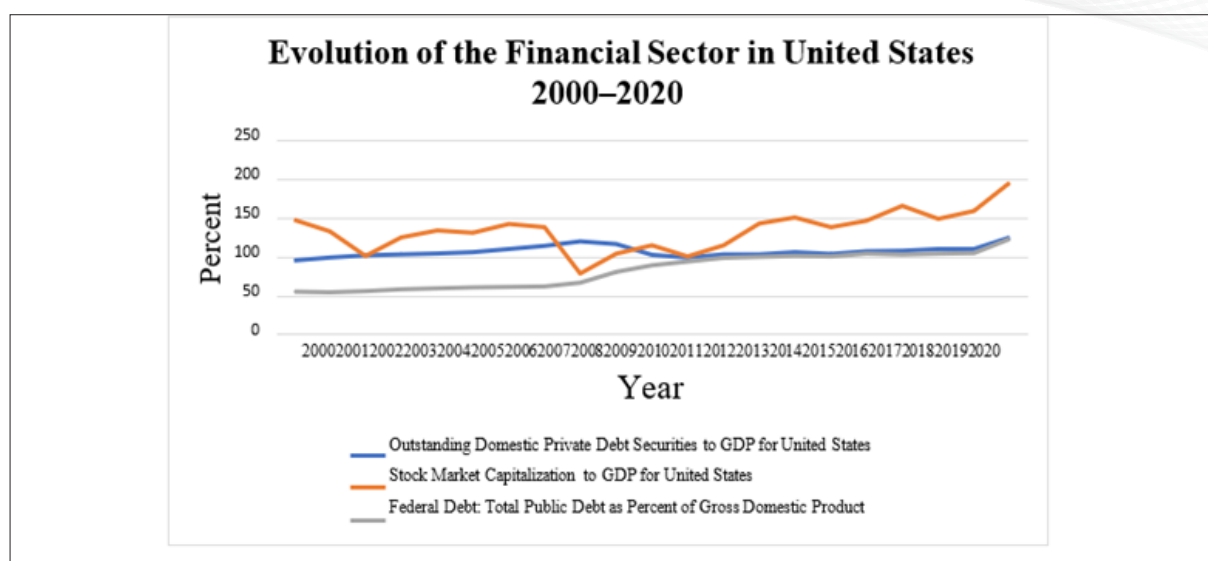
The evolution of India's financial sector reveals a stark disparity between equity and debt markets. While equity markets have developed significantly, with market capitalisation reaching substantial levels relative to GDP, corporate debt markets remained virtually non-



existent until 2010. This asymmetry stands in sharp contrast to advanced economies like the United States, where corporate debt markets play a pivotal role in financing business growth.

The underdevelopment of corporate debt markets represents a significant constraint on India's growth potential. The absence of a deep and liquid corporate bond market limits financing options for businesses, particularly medium-sized enterprises that find themselves in a financing gap - too large for traditional bank financing but too small for equity markets. This structural limitation in the financial architecture has resulted in an overreliance on bank financing, contributing to periodic stress in the banking sector and constraining the availability of long-term funding for infrastructure and industrial projects. A comparison with other markets offers valuable insights.

Figure 6: Evolution of the Financial Sector in the United States, 2000-2020



China, for instance, has successfully developed a corporate bond market representing approximately 40 per cent of GDP, while India's corporate bond market remains below 20 per cent. This disparity reflects both differing policy choices and institutional development paths, with China having made a conscious effort to develop its bond markets as an integral part of its financial sector modernisation strategy.

DEVELOPMENT STRATEGY AND IMPLEMENTATION

Developing India's corporate debt market requires a comprehensive, multi-faceted approach that addresses supply and demand factors. Legal and regulatory reforms must improve debt recovery mechanisms and ensure efficient resolution of Non-Performing Assets (NPAs). The experience with the Insolvency and Bankruptcy Code (IBC) demonstrates the potential and challenges of implementing such reforms in the Indian context.

Market liquidity remains a critical concern for both primary and secondary market functioning. Establishing an arbitrage-free term structure and developing institutional market makers are essential steps toward creating a more liquid market. While the government securities market provides a potential template for developing the corporate bond market, essential differences in credit risk and market structure must be carefully considered.

Recent initiatives like the Bharat Bond ETF, which has attracted 50,000 crore from retail investors, demonstrate the potential for innovative products to bridge the gap between retail investors and the corporate bond market. However, developing a truly deep and liquid corporate bond market will require addressing several fundamental challenges:



- **Legal Framework Enhancement:** While the IBC has improved the situation, average resolution times remain long and recovery rates continue to lag behind international standards. The legal framework for debt recovery must be strengthened further to build market confidence.
- **Market Infrastructure Development:** The market infrastructure for corporate bonds needs significant enhancement, particularly in trading platforms, clearing mechanisms and price discovery processes.
- **Market-Making Capacity:** The role of market makers needs to be developed further to ensure consistent liquidity in secondary markets and to ensure market depth and efficiency.

INTANGIBLE CAPITAL AND ECONOMIC GROWTH

The Growing Importance of Intangible Capital

The service sector, particularly IT services, has become a critical driver of India's economic growth, underscoring the rising significance of intangible capital in the modern economy. This sector relies heavily on assets such as software, algorithms and human expertise, which pose unique challenges for measurement and financing. Traditional growth accounting frameworks, such as the Solow model, which emphasises physical capital, labour and total factor productivity (TFP), often fail to fully capture the contribution of intangible assets.

India's IT services industry, contributing approximately 8 per cent of GDP, exemplifies the importance of intangible capital. However, traditional accounting measures may underestimate its true economic impact by inadequately valuing intellectual property, organisational capital and human capital investments.

Measurement and Policy Challenges

The measurement of intangible capital presents significant methodological challenges, affecting national accounts and corporate financial statements. While the System of National Accounts (SNA) 2008 recognises specific categories of intangible capital as Intellectual Property Products (IPP)—such as R&D, software and artistic originals—significant gaps remain. Key intangibles like brand value, organisational capital and training expenditure are excluded, leading to an underestimating GDP and productivity, particularly in knowledge-intensive sectors.

These challenges are especially pronounced in emerging markets like India, where the informal sector is substantial and data collection systems are less developed. The inability to accurately measure intangible capital can result in a systematic underestimation of investment and productivity growth.

Policy Framework for Intangible Capital Development

Creating an environment conducive to intangible capital formation requires a comprehensive policy framework addressing multiple dimensions.

Strengthening intellectual property (IP) protection through more efficient patent and trademark registration processes is essential, particularly for start-ups and SMEs.

The Digital Personal Data Protection Act of 2023 represents a significant step toward establishing the legal infrastructure necessary for digital innovation.

Education and research institutions are pivotal in developing human capital and generating new knowledge. Despite its scale, India's higher education system requires substantial reform



to better support innovation and research. The New Education Policy (NEP) 2020 provides a framework for such reforms, though implementation remains challenging. The accounting treatment of intangible investments also demands attention.

Current standards often classify intangible investments as current expenses rather than capital investments, potentially discouraging such expenditures and complicating financing for intangible-intensive projects. Addressing this issue is critical for fostering innovation and long-term growth.

FUTURE DIRECTIONS AND POLICY RECOMMENDATIONS

Comprehensive Reform Agenda

India's financial sector modernisation necessitates a carefully sequenced approach balancing multiple objectives. In the near term, priority should be given to strengthening market discipline through enhanced information disclosure and reduced government interference. The privatisation of public sector banks, though politically challenging, is likely to accelerate efficiency improvements and innovation in the banking sector.

The development of municipal bond markets is another critical area. As India's cities expand and require substantial infrastructure investment, municipal bonds could be a vital financing tool. However, this will require significant improvements in municipal governance and financial management capabilities.

Institutional Reforms

Longer-term structural reforms should address institutional rigidities impeding financial market development. Key measures include improving the efficiency of the legal system for debt recovery and streamlining regulatory processes to reduce compliance costs. The success of these reforms hinges on maintaining policy predictability and minimising regulatory uncertainty.

The development of derivatives markets is essential for effective risk management but requires careful regulation to prevent excessive speculation. India's experience with currency derivatives offers valuable lessons for expanding other segments of the derivatives market.

Technology and Innovation

Financial technology (fintech) presents significant opportunities to enhance financial sector efficiency and inclusion. The success of the Unified Payments Interface (UPI), which processes over 10 billion transactions monthly, exemplifies the transformative potential of technological innovation. However, realising these benefits necessitates robust cybersecurity and data protection measures.

The introduction of digital banking licenses and the proposed central bank digital currency (CBDC) represent pivotal initiatives that could further reshape the financial landscape. These innovations must be carefully managed to ensure they enhance, rather than undermine, financial stability.

CONCLUSION

India's financial sector stands at a critical juncture in its development. While significant progress has been made in establishing basic financial infrastructure, substantial challenges remain in developing sophisticated markets capable of supporting the country's transition to an advanced economy. Success will require coordinated efforts across multiple dimensions: channeling household savings into productive investments, developing robust corporate debt markets and creating frameworks to support intangible capital formation.



The demographic transition presents challenges and opportunities, necessitating innovative approaches to maintain adequate savings rates while addressing the needs of an aging population. Similarly, the development of corporate debt markets demands careful attention to legal and regulatory frameworks, while the growing importance of intangible capital calls for new approaches to measurement and financing.

As India aims to achieve advanced economy status by 2047, the modernisation of its financial architecture will play a pivotal role. The success of this transformation will depend on maintaining policy consistency, strengthening institutional frameworks and adapting to evolving technological and demographic realities. Lessons from other emerging markets, particularly China and South Korea, provide valuable insights but must be adapted to India's unique institutional and cultural context.

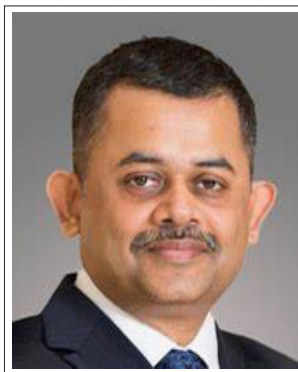
The path forward requires balancing multiple objectives: maintaining financial stability while promoting innovation, ensuring inclusion while building market efficiency and protecting investors while encouraging risk-taking. Success in this endeavor will be critical not only for India's economic development but also for its broader social and political objectives.

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India's Savings Revolution: How Households and Corporates Are Reshaping Risk Capital and Economic Growth

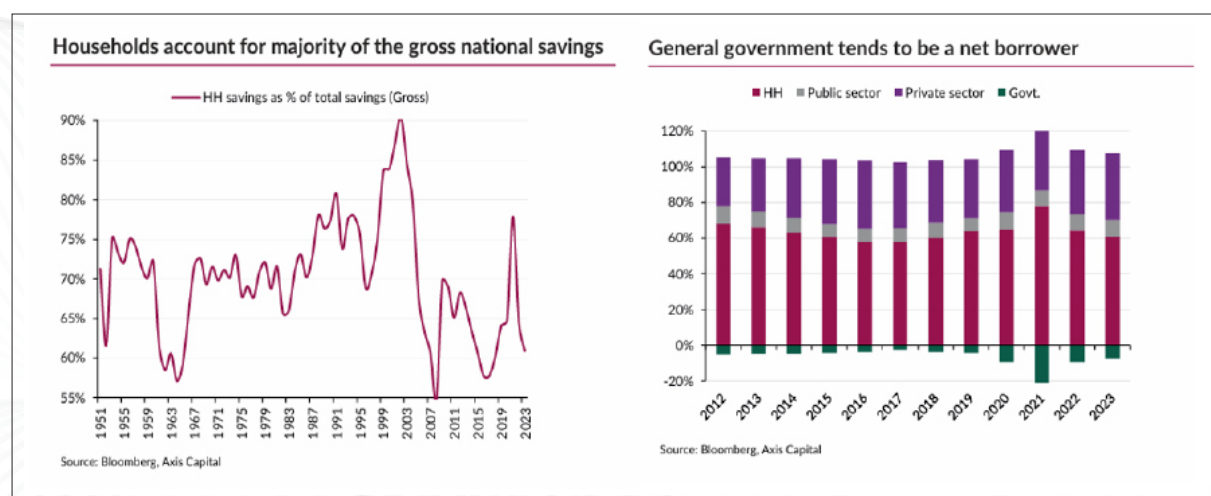


Neelkanth Mishra
Axis Bank

India's economic landscape is undergoing a structural transformation in savings and investment patterns, marked by two defining trends: households shifting toward riskier financial assets and corporates emerging as net savers. This evolution is redefining capital allocation, equity market dynamics and macroeconomic stability. Below, we analyse these shifts, their implications and the road ahead.

THE HOUSEHOLD SECTOR: FROM TRADITIONAL SAVERS TO RISK-TAKING INVESTORS

Households remain the backbone of India's savings ecosystem, contributing 64 per cent of total domestic savings on average between FY12 and FY23, with the private sector adding 34 per cent and the public sector 9 per cent. However, the composition of these savings is changing dramatically.

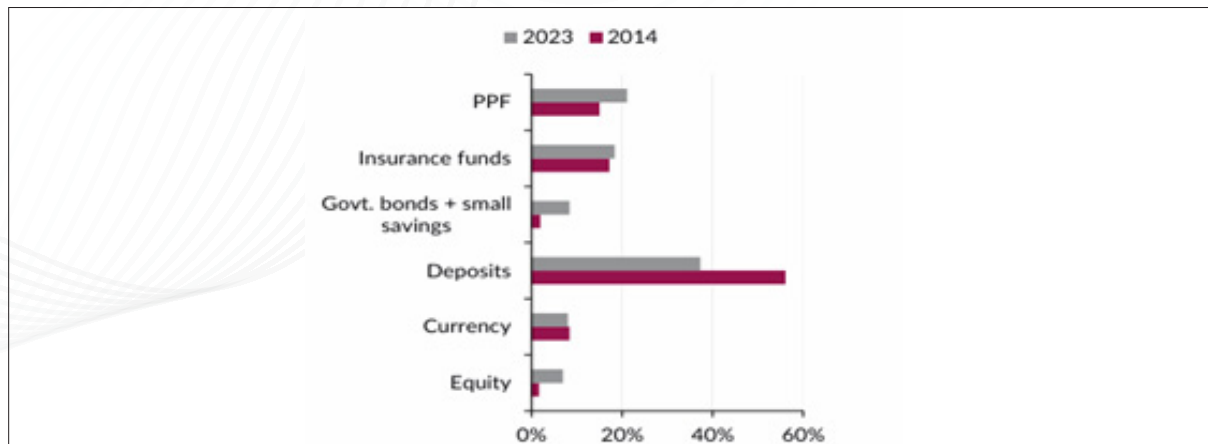


Physical vs. Financial Savings

In FY23, 70 per cent of household savings flowed into physical assets, primarily dwellings (real estate) and machinery. This preference for tangible assets reflects enduring cultural



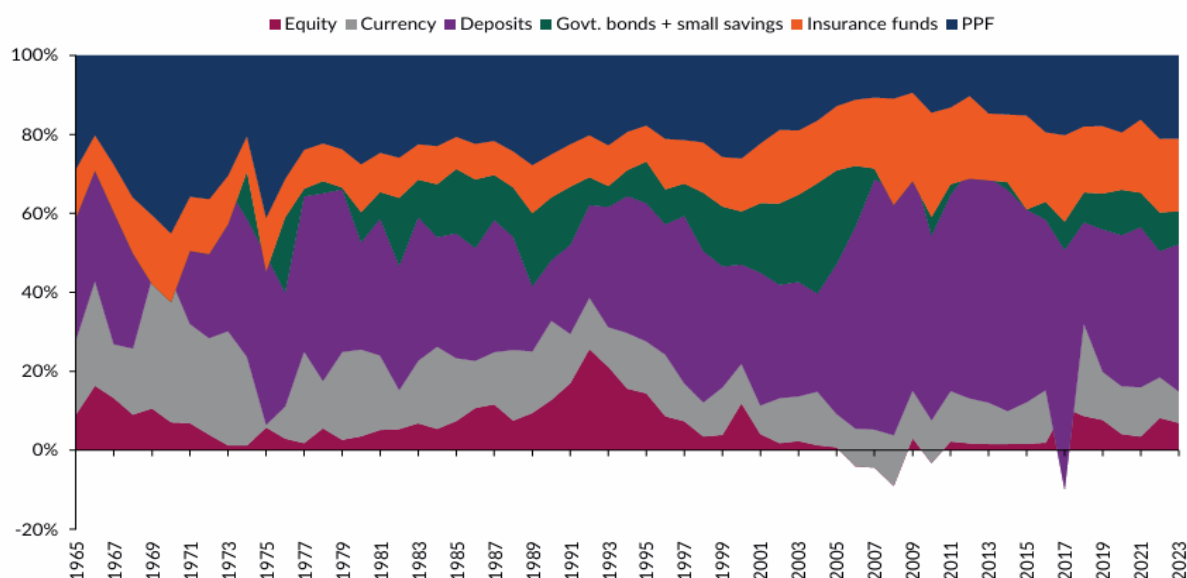
trust in property and gold. However, financial savings are undergoing a metamorphosis. While gross financial savings rebounded to 11.6 per cent of GDP in FY24, net savings remain constrained by surging liabilities. Household debt has climbed to 41 per cent of GDP (FY24), driven by non-housing personal loans.



The Financialisation of Savings

Households are diversifying away from traditional bank deposits:

- Deposits' share in financial savings has plummeted from 56 per cent in 2014 to 37 per cent in FY23, while provident and pension funds rose from 15 per cent to 21 per cent.
- Equities and mutual funds are gaining traction, with Systematic Investment Plan (SIP) inflows exceeding \$3-4 billion monthly and over 100 million participants. Mutual fund Assets Under Management (AUM) have surged, reflecting growing risk appetite.
- Insurance flows contribute \$5-7 billion annually to equities, despite recent tax-related headwinds.



Source: Bloomberg

Rising Direct Equity Participation

Retail investors are entering markets directly, with demat accounts growing at a 40 per cent CAGR during FY20-24 and mutual fund folios accelerating post-FY21. This democratisation

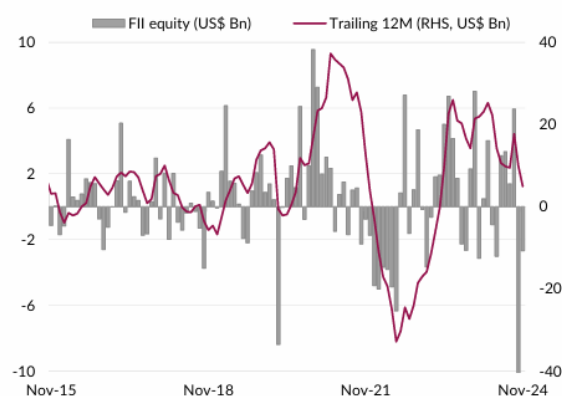


of equity ownership is reshaping market dynamics, as domestic institutional investors (DIIs) now counterbalance foreign institutional investor (FII) outflows.

THE CORPORATE SURPLUS PHENOMENON: FROM BORROWERS TO SELF-FUNDERS

Corporates have transitioned from heavy borrowers to net savers, a shift with profound macroeconomic implications.

FII flows as a proportion of Market Cap now weaker



Source: Bloomberg, Axis Capital

Demand demand is likely to grow further



Source: Bloomberg, Axis Capital

Offsetting Macro Imbalances

Corporate savings now help finance government deficits (8 per cent of GDP) and current account gaps (1 per cent of GDP), creating a self-sustaining investment cycle without excessive foreign borrowing. This contrasts with pre-2014 trends, when India relied heavily on external capital to fund growth.

EQUITY MARKETS: SUPPLY-DEMAND DYNAMICS IN FLUX

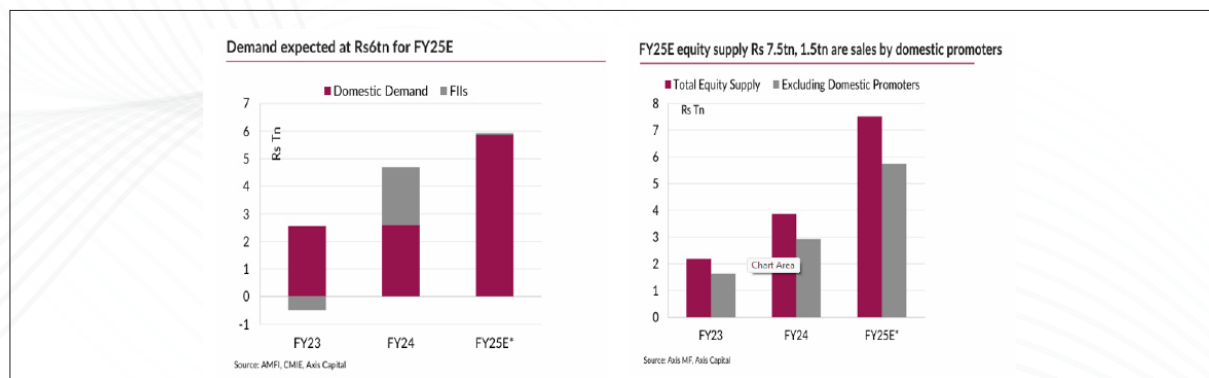
Robust household participation is reshaping India's equity markets, but challenges persist.

Record Equity Supply

FY25 is projected to see 7.5 trillion in equity supply, including promoter block sales and equity capital market (ECM) transactions. Domestic promoters alone may offload 1.5 trillion in stakes. This surge reflects confidence in elevated valuations but risks oversupply.

Demand-Side Resilience

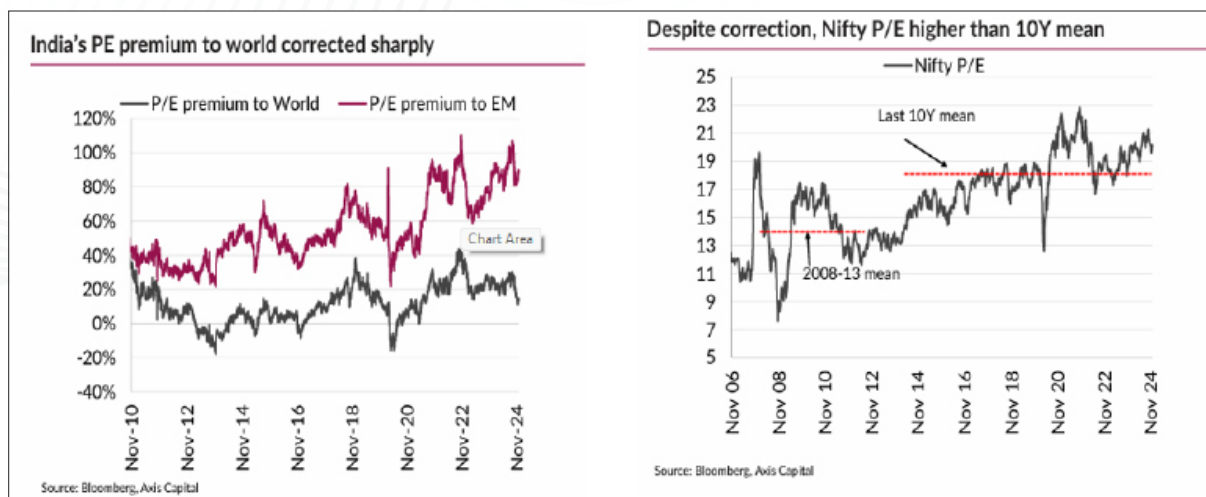
Steady inflows from SIPs, EPFO, insurance and Alternative Investment Funds (AIFs) could generate 6 trillion in demand, partially offsetting FII outflows (\$10 billion since October 2024). However, a supply-demand mismatch may pressure price-to-earnings (P/E) ratios.





Valuation Premiums and Global Comparisons

Despite recent corrections, the Nifty 12-month forward P/E of 20.2x remains above its 10-year average of 18.3x. India's premium to global markets has narrowed to 11 per cent (from 23 per cent in September 2024), but structural demand from domestic savers could sustain higher multiples.



MACRO RISKS AND POLICY IMPERATIVES

While these shifts signal economic maturity, they also introduce new vulnerabilities.

Household Debt Sustainability

With liabilities at 41 per cent of GDP, households face risks from rising interest rates or income shocks. However, much of this borrowing is productive, supporting consumption and entrepreneurship in previously informal sectors.

Regulatory and Developmental Challenges

- 1. Debt Market Reforms:** Retail participation in corporate bonds remains negligible. Simplified regulations and tax incentives could deepen this market.
- 2. Financial Literacy:** Ensuring households understand risk-return trade-offs is critical as savings migrate to volatile assets.
- 3. Fiscal Discipline:** Government deficits must align with corporate savings to prevent crowding out.

CONCLUSION: A NEW ERA OF DOMESTICALLY DRIVEN GROWTH

India's savings revolution—marked by corporate surpluses and household risk-taking—reflects a maturing economy less reliant on foreign capital. While challenges like debt sustainability and equity oversupply persist, the structural shift toward diversified savings channels lays the foundation for sustainable, domestically driven growth. Policymakers must now prioritise financial inclusion, regulatory innovation and macroeconomic stability to harness this transformative potential fully.



Financing India's big investment push: Issues in India's Corporate Bond Market



Rajeshwari Sengupta
IGIDR, Mumbai

INTRODUCTION

There are two ways to finance long-term investment, especially in infrastructure: through the market, especially the bond market, and through institutions such as banks. From a theoretical perspective, the bond market is better placed to finance long-term investments for multiple reasons. The bond market is considered an arms-length investor that acts more like a risk pass-through vehicle. The market reassesses and reprices risk on a continual basis. On the other hand, institutions such as banks are regarded as informed lenders. They do not do constant repricing of risk. Instead, they hold the risk on their balance sheets, and as a result of this, they also have to hold capital, which is costly for the banks because capital comes out of profits. The best that banks can do is to monitor the risks associated with the projects. Hence, long-term investment is best funded by the bond market. This is true of every country, including India.

For an emerging economy like India, stable availability of credit for investments is critical for achieving and sustaining a high GDP (gross domestic product) growth rate. Historically, the banking system has been the primary, formal provider of credit in India. As argued above, the banking system, by definition, is not well equipped to lend to long-term infrastructure projects. Yet this is precisely what Indian banks, especially public sector banks, did during the early to mid-2000s. Subsequently, a wave of defaults in the infrastructure sector plunged the entire banking sector into severe balance sheet difficulties. As a result of the prolonged balance sheet stress and steps taken by the authorities to address the problem, the banking sector became increasingly risk-averse and reduced its lending to the industrial sector. In the last few years, the Indian corporate bond market has also emerged as an important source of credit, but it continues to lag behind significantly owing to a multiplicity of issues such as lack of liquidity in the secondary market, skewness of issuances and a preponderance of shorter maturity bonds.

This implies that credit for infrastructure, which by its very nature is long-term and, in most cases, carries higher risk, will be hard to come by in India unless substantial reforms of the bond market are undertaken.

BANK BALANCE SHEET CRISIS

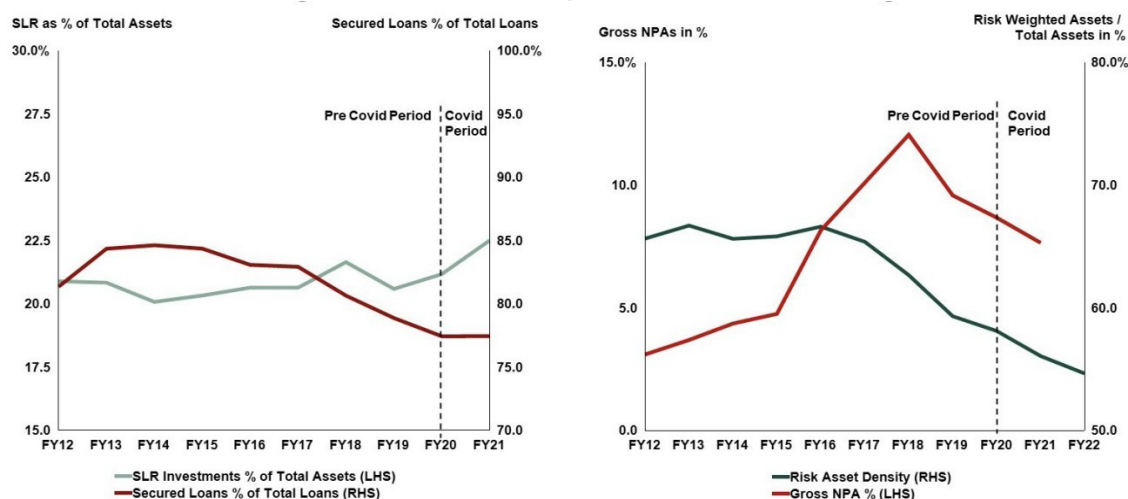
In the period between 2015 and 2019, the banking sector in India encountered massive balance sheet stress triggered mostly by large-scale infrastructure loan defaults. These



loans had been given by the banks, particularly public sector banks, when the economy was booming in the pre-2009 period. The corporate bond market back then was extremely small, and hence, banks were the only game in town for supplying credit to these large, risky projects. Post 2009, the growth slowdown of the Indian economy along with several other factors such as delays in obtaining clearances related to the projects, unfavorable exchange rate movements and failure of the public-private partnership model of investment resulted in a wave of bank defaults in various areas of infrastructure such as power, metals, EPC etc. The net result was that by 2018, gross non-performing assets (NPAs) reached a level of almost 14 per cent of total loans for all banks and nearly 20 per cent for public sector banks, many of whose capital was wiped out by the high and rapid growth of NPAs.

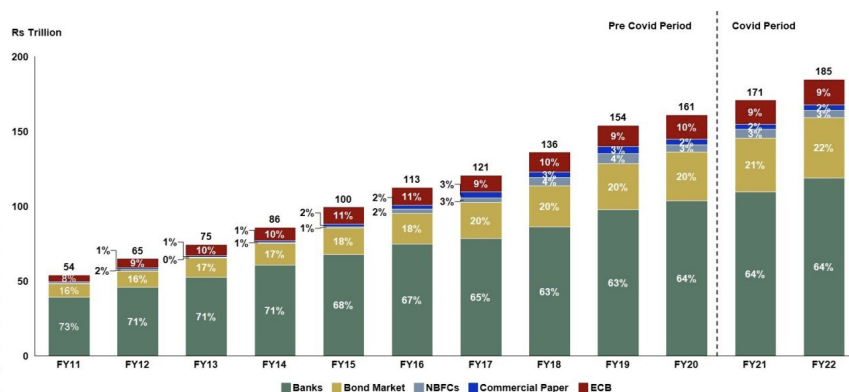
This triggered the introduction of the asset quality review (AQR) by the Reserve Bank of India (RBI) in 2016, which forced banks, public and private alike, to recognise the stressed assets on their books. The banking sector's response to the bad-loans crisis and to the actions taken by the government and the RBI to address the crisis was to avoid risks (Sengupta and Vardhan, 2020a). The net result of the rise in risk aversion was a decline in the risk asset density, which is the ratio of risk-weighted assets to total assets of the banking system. This is depicted in Figure 1, right panel. This ratio, which was 65 per cent until 2016, dropped below 55 per cent by 2020.

Figure 1: NPAs and Risk aversion in the banking sector



Source: RBI, bank disclosures, authors' computations

Figure 2: Shares of various credit sources in total credit, 2011-2022



Source: RBI, SEBI, CRISIL, authors' computations.

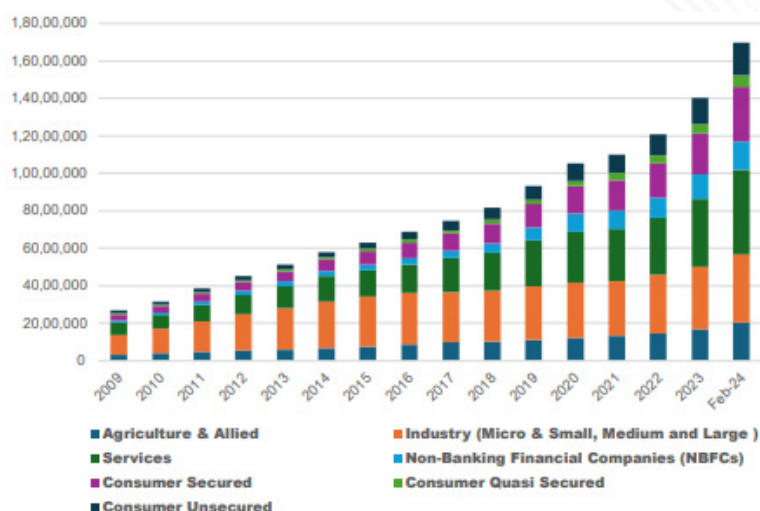
Note: Numbers on the stacks depict share in total credit. Years are financial years ending March of that year. Total credit refers to total commercial or non-government credit; credit by NBFCs is net of credit from banks and bond market to them.



The heightened risk aversion was also reflected in rising share of investments by banks in safe government securities (called the Statutory Liquidity Ratio or SLR investments) and elevated levels of 'secured' credit (Figure 1, left panel). Against the regulatory requirement of 18 per cent, banks' investment in SLR securities increased from about 20 per cent to more than 22 per cent of net time and demand liabilities (NDTL) between 2016 and 2022.

The balance sheet stress and resultant risk aversion in the banking system led to an overall decline in the share of the banking sector in total credit (Figure 2). Between 2011 and 2020, the share of the banking sector declined from 73 per cent to 64 per cent.

Figure 3: Sectoral deployment of bank credit, 2008-09 to 2023-24



It is worth noting in this context that during this same period when the banking sector was wrapped up in the balance sheet crisis, the share of the corporate bond market in total credit went up from 16 per cent to 20 per cent (Figure 2). Data (from the RBI) also shows that credit from the bond market outpaced that from banks with a CAGR of 15 per cent as against 11 per cent for bank credit during the 2011-2020 period. In other words, as the banking sector started reporting high levels of NPAs, the bond market emerged as an alternative to the banking sector especially for the top-rated firms.

POST-PANDEMIC PERIOD

In the aftermath of the pandemic, bank balance sheets became healthier and bank credit growth recovered strongly but primarily driven by rapid growth in unsecured consumer credit as well as home loans (see Figure 3). However, despite the improvement in banks' financial health, lending to large industries has remained stagnant in nominal terms, implying that it has declined sharply in real terms.

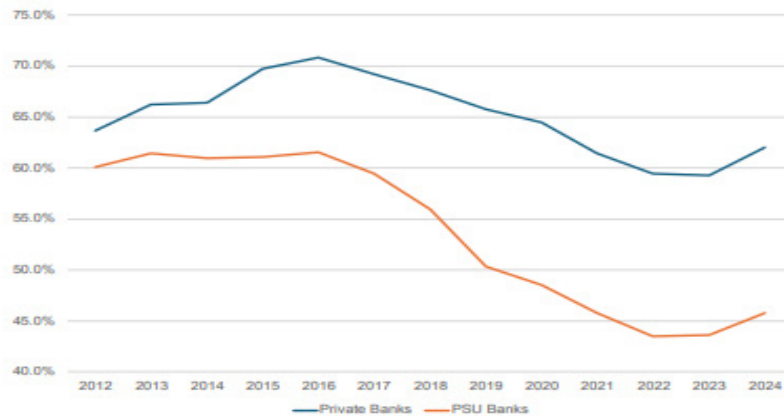
In 2011, the total share of industry (large and MSME firms) was 44 per cent which collapsed to 28 per cent by 2023-24 (Figure 3). There has also been little lending for private sector investment. Bank lending to infrastructure went up by a meagre 9 per cent in 2020-21 from 3 per cent in 2019-20, but this has been fueled mainly by public sector capital expenditure. This is partly the outcome of continued risk aversion in the banking sector. After getting badly scarred by the NPA crisis of 2015-2019, banks still seem cautious to lend to industry.

Moreover, there are no signs yet of a revival of private investment which has been sluggish for nearly a decade. In Figure 4 we show the continued risk aversion of the banking sector (i.e. the ratio of risk-weighted assets to total assets with a lower ratio implying greater risk aversion), of a select sample of private and PSU banks accounting for roughly 90 per cent



of the banking system. Note that the uptick in FY2023-24 is mostly due to the increased risk weights NBFCs and unsecured consumer credit.

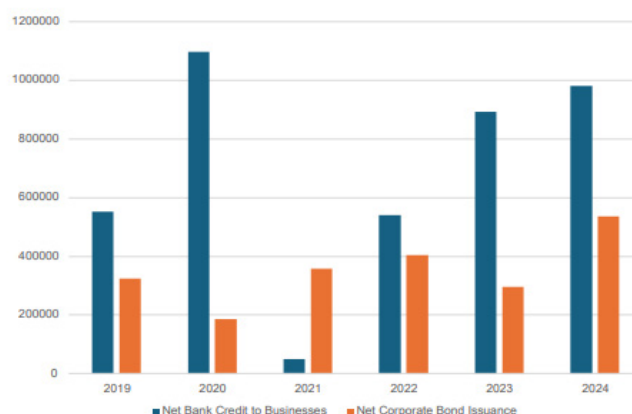
Figure 4: Continued risk aversion in the banking system



Source: Investor presentations of banks

This may have also been due to consistently weak credit demand from the industry. After years of sluggish performance, private sector investment, including in infrastructure, still has not picked up in a substantial manner. In the post-pandemic period, the growth of the corporate bond market has continued, especially with the banking sector systematically withdrawing from lending to the industry. Between 2010-11 and 2023-24, the share of bonds in overall non-government credit went up from 14 per cent to 21 per cent. Growth rate of credit from the bond market outpaced credit from banks. From 2018-19 to 2023-24, while the overall bank credit grew at 12 per cent, bond issuances by businesses grew at 13 per cent. Corporate bonds are now cumulatively close to 70 per cent of net bank credit. In Figure 5, we show the share of banks and bonds in annual incremental credit to businesses.

Figure 5: Incremental bank credit to businesses and net bond issuances (in Rs. crore)



Source: Securities and Exchange Board of India (SEBI); Prime Database, RBI

While over the last few years the bond market in India seems to have picked up pace there are still a plethora of issues plaguing this market which call into question its suitability for funding long-term infrastructure projects.



BOND MARKET IN INDIA

To begin with, the Indian corporate bond market is highly skewed and accessible only to large, established and high-rated firms. Over 85 per cent of bonds issued are rated AA and above. There are very few takers for bonds rated A and below. Several infrastructure bonds are likely to be lower rated (with higher perceived credit risk). It is important to note that the largest capital pools investing in Indian bond markets are insurance, pension (including provident funds) and mutual funds. All these pools are averse to investing in bonds rated below AA, even when investment guidelines issued by their regulators permit them to do so.

In contrast, the median rating for bank loans to industry is BBB (based on anecdotal evidence through discussion by the authors with bankers; there is no data on this in the public domain). The decline in overall bank credit to industry therefore implies that low-rated firms are the ones whose credit supply has relatively gone down. To the extent that infrastructure projects are inherently riskier and many are likely to carry lower credit-ratings, this potentially implies that the corporate bond market is currently not equipped to finance such projects.

Secondly, bond issuances in India are dominated by several government owned enterprises (such as Power Finance Corporation, Rural Electrification Corporation, National Highway Authority among others) that are seen by bond market investors as 'near sovereign' risk in the absence of any formal or explicit government guarantee. Credit spreads for these bonds are generally somewhat lower than the comparably rated private sector issuers. This tacit government guarantee on these bonds gives them a pricing advantage and perhaps results in some crowding out of private sector issuers.

Third, while primary market issuances of bonds have maintained a strong trajectory over the last decade, secondary market is still highly illiquid. With over Rs 40 trillion outstanding bonds, daily trading volume rarely goes beyond Rs 10,000 crore. Further, secondary market trading is limited to a small set of bonds (what the market terms as 'liquids'). This lack of liquidity in the secondary market implies that for a vast majority of bonds, frequent price discovery is absent. An extreme example of this effect was witnessed in the IL&FS episode when the bonds issued by IL&FS, that were almost completely illiquid, were downgraded from AAA to D, almost overnight, leaving many investors stranded. One reason for this high level of illiquidity is that the dominant investment pools in the bond market - insurers and pension funds - are 'buy and hold' investors who do not normally trade in bonds.

Finally, bonds issued in India are predominantly (over 90 per cent) of less than 5-years maturity. A small fraction of bonds that are issued with longer maturity, often have embedded call options that are inevitably exercised. This means that the bond market presently does not provide long term credit.

CONCLUSION

Infrastructure projects are best funded through the bond market because of their intrinsic nature—they are long-duration, inherently risky projects which should not be funded out of bank balance sheets. India has been historically a bank-dominated economy. But they are the wrong platforms for financing long-term investment. Yet in India for the longest of time these projects were funded through institutions such as banks (or development finance institutions) which are ill-equipped to handle the associated asset-liability mismatches.

The last decade saw the share of corporate bonds in the overall commercial credit going up from 14 per cent to 24 per cent. Growth rate of credit through bonds outpaced credit from banks. This is a welcome trend. Slowly and steadily the bond market is becoming an important contributor to the supply of credit in India especially for the larger, highly



rated firms. Yet there is a long way to go before the bond market can finance all kinds of infrastructure projects; policymakers need to address fundamental issues like liquidity, maturity and skewness of issuances.

Bond market in India overwhelming prefers relatively shorter maturity and highly rated papers. This implies that credit for infrastructure which by its very nature is long term and, in most cases, higher risk, will be hard to come by unless there are explicit credit enhancement and market making mechanisms in place. The bond market is also highly illiquid. A market becomes liquid when there is a large number of diverse pools of capital with different risk appetite. In India this requires greater participation by hedge funds and developing well-functioning derivatives markets for hedging interest rate and currency risks. However, the interest rate futures market is non-existent. The currency futures market existed since 2008 but in 2024 RBI mandated that all users should establish underlying exposure thereby causing trading volumes to collapse by about 80 per cent across all exchanges. It is also important to allow insurance and pension funds to invest more in corporate debt by lowering their 50 per cent mandated investment in GSecs.

A nascent private credit market seems to be developing in India through alternative investment funds (AIFs). According to the Prime database, annual credit extended by these funds increased from around Rs 15,000 crore in 2018-19 to Rs 66,600 crore in 2023-24, a growth rate of around 37 per cent per year. These funds raise money from institutions, both domestic and global, as well as from high net-worth individuals (HNI) and channelise it to low-rated firms (rated A to BB)¹, as compared to the public bond market where only high-rated firms can issue bonds. If managed properly these AIFs can potentially help build a market for lower rated bonds.

While the growing share of corporate bonds and the emergence of AIFs indicate progress, enhancing market depth and liquidity through broader participation is vital, particularly for democratising access to long-term finance. With enabling policies and institutional reforms, India can build a robust bond market that efficiently allocates capital across the risk spectrum, supports infrastructure growth and reduces dependence on banks. Such a shift will help meet the investment needs of a growing economy aiming for sustained, inclusive development.

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Small Savings in India – Emerging Trends and Future Potential



**Gaurav
Mukherjee**
Bandhan Bank



**Siddhartha
Sanyal**
Bandhan Bank



**Sudarshan
Bhattacharjee**
Bandhan Bank

INTRODUCTION

Gross domestic saving plays a key role in determining capital formation and long-term economic growth in India. The household sector attracts special attention being the largest saver in the gross domestic savings of India. This paper is an attempt to analyse emerging trends in household financial savings in India with a specific focus on trends in “small savings” in recent years.

Small savings in India are the savings schemes offered by the Government of India (GoI) to mobilise financial savings from the household sector. These schemes are implemented typically through the vast network of post offices across the country and the proceeds accrue directly to GoI. Thus, the terms small savings and postal savings/deposits are often used synonymously and interchangeably in the Indian context. We follow the same convention in this paper. Along with post offices, nationalised banks and a few approved private banks are eligible to operate on behalf of the GoI to garner funds under various small savings schemes. However, such proceeds also accrue to the government and not to the operating banks. On the other hand, the deposits that banks mobilise for accrual to their own books are not considered as part of small savings, irrespective of ticket size, tenor and/or nature of such deposits (eg., current, savings, or term deposits).

Against this backdrop, this paper captures importance, composition and drivers of different small saving instruments available to households and their interest rate structures. It touches upon global experiences in this regard and provides a few policy recommendations that may enable the small savings schemes to play an even larger role in further boosting household financial savings – thereby, not only boosting capital formation and the overall economic landscape, but also augmenting the drive of financial inclusion by touching the lives of millions of lower and middle-income people.

CONCEPTUAL FRAMEWORK – A FEW STYLISTED FACTS

As per India's *National Accounts Statistics – Sources and Methods, 2012*, saving is “excess of current income over current expenditure of various sectors of the economy”. Estimates of domestic savings are done for public sector, private corporate sector and households. In a



closed economy, capital formation is equal to domestic savings for a given period whereas for an open economy capital formation is equal to domestic savings *plus* net inflow of foreign capital.²⁴ Mobilising higher domestic savings is essential for an economy as it makes it less dependent on foreign capital that may have outflows in the forms of repatriation of proceeds and would be subject to global economic tides.

Studies found that countries having higher saving rates grow faster than economies with lower savings rates (Ribaj and Mexhuani, 2021). Ghosh and Nath (2023) in their study found that access to banks and per capita real income significantly impact private as well as household saving rates in India both in short and long run over a sample period from 1960 to 2016.

India traditionally has a robust banking and financial system that plays a key role in mobilising financial savings from the household sector. In recent years, various new-age saving and investment products came into existence, which have further attracted different socio-economic groups on the basis of their risk-return profiles. Financial inclusion drive with an aim to bring a large section of population within the ambit of financial saving with an objective of providing future security, increasing savings, nurturing entrepreneurship and investment has played a key role in mobilising savings for the bottom of the pyramid. We feel that the focus on financial inclusion has the potential to materially boost household financial savings in India in the coming years.

Banks have played a key role in driving financial inclusion by offering and managing various government schemes that benefit a large section of people. By providing banking access to millions of households through the *PM Jan Dhan Yojana* (PMJDY), the government brought them within the financial net. Total number of beneficiaries of PMJDY crossed 54 crores since its inception about a decade ago. Cumulatively, more than Rs. 42 lakh crores have been paid through direct benefit transfers (DBT) to the beneficiaries. Various other schemes of financial inclusion such as *PM Suraksha Bima Yojana*, *PM Mudra Yojana*, *Atal Pension Yojana*, *Stand-up India*, *PM Jeevan Jyoti Bima Yojana*, etc – along with other welfare schemes – have also increased disposal income of people, including at the bottom of the socio-economic pyramid. In this context, it is noteworthy that the small saving schemes of the government have gained significant traction over the years with their ability to connect to the last mile through the vast network of post offices, public sector banks and select private banks.

Gross savings rate – Recent global trend

Comparison of saving trends show that there are significant differences in saving rates among various countries with different income levels. Globally, gross saving rates in the high-income countries as percentage of GDP have remained within 22-24 per cent between 2013 and 2023. Gross saving rates in upper middle-income countries remained higher than 30 per cent during this period, while it was less than 20 per cent for the cohort of low-income countries (Exhibit 1). Against that backdrop, India's gross savings as percentage of GDP has been trending closer to 30 per cent in recent years (next section).

²⁴ National Accounts Statistics, Sources and Methods 2012. Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.



Exhibit 1: Gross savings as percentage of GDP

Countries and regions	2013	2018	2019	2020	2021	2022	2023
High income countries	22.3	23.4	23.4	22.5	23.8	23.6	22.8
Middle income countries	34.8	33.1	32.4	32.3	33.8	34.1	32.6
Lower middle-income countries	29.0	27.6	26.9	25.8	25.9	25.7	26.5
Upper middle-income countries	36.1	34.3	33.7	33.7	35.6	35.9	34.0
Low-income countries	16.0	15.2	16.2	14.3	15.3	16.0	NA
Memo item:							
World	26.2	26.4	26.3	25.5	26.9	26.8	25.9
European Union	21.8	24.1	24.5	23.5	25.2	23.5	24.0
OECD members	21.1	22.6	22.8	22.0	22.9	22.4	22.0

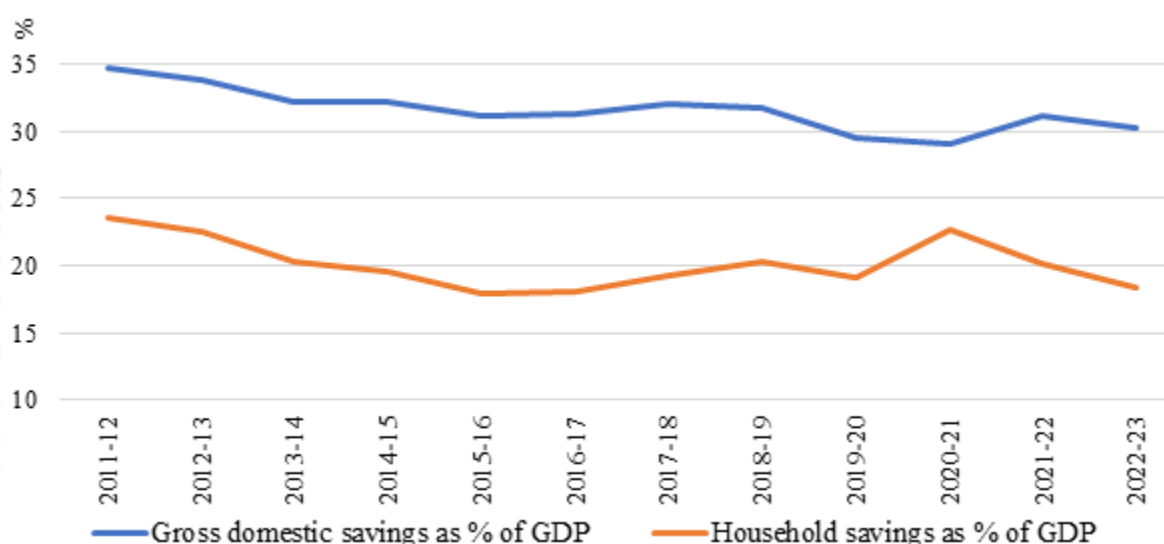
Source: World Development Indicators, World Bank

Role of household savings in total savings and capital formation in India

India's gross domestic savings as percentage of GDP somewhat moderated in recent years (Exhibit 2). However, savings rate in India has consistently been close to that of middle-income countries and higher than savings rate of high-income countries.

Savings is essential for economic growth and hence it is imperative to further accelerate India's overall domestic savings. Since household savings account for lion's-share of overall gross savings in India, nudge to household savings become all the more important (Exhibit 3). Contribution of gross household savings in financing gross capital formation in India hovered around 60 per cent in recent years ^{25 [1]} even though household savings as percentage of GDP was 18.5 per cent in 2022-23 vis-à-vis 23.6 per cent in 2011-12 (Exhibit 2).

Exhibit 2: Savings as percentage of GDP in India

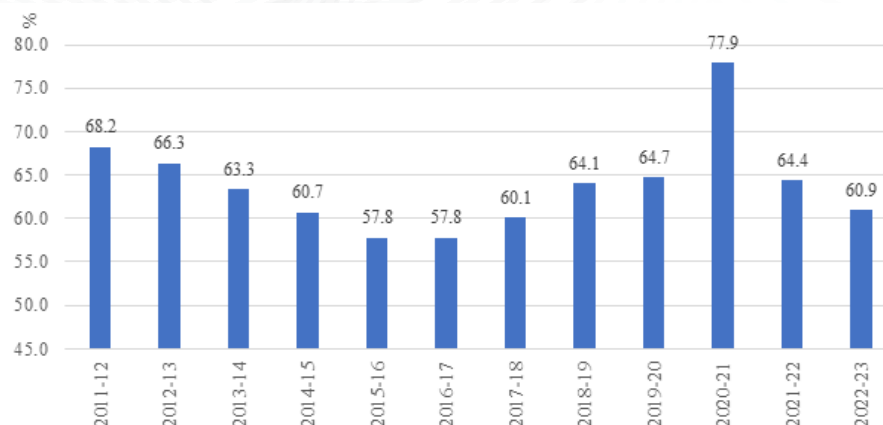


Source: MoSPI, Authors' calculation

^{25 [1]} Calculated from MoSPI data. Contribution of household savings in financing gross capital formation however, stood at around 80% in 2020-21.



Exhibit 3: Share of household savings in gross savings in India



Source: MoSPI, Authors' calculation

Changing pattern of household savings in India

A closer analysis of the changing pattern of household savings and its broad components indicated that overall savings of household sector increased at a compound annual growth rate (CAGR) of 8.5 per cent between 2017-18 and 2022-23, modestly higher than a CAGR of 8.1 per cent during 2012-13 to 2017-18. Among the constituents of household savings, gross financial savings of households recorded a CAGR of 7.7 per cent between 2017-18 and 2022-23 (reflecting a contraction of 14.8 per cent y/y in 2021-22 following the Covid-19 pandemic effect) as against a CAGR of 14.1 per cent during 2012-13 to 2017-18. Financial liabilities of the household sector grew at a CAGR of 15.7 per cent between 2017-18 and 2022-23, at a rate materially higher than that of gross financial savings. However, it is important to note that households' savings in the form of physical assets grew at a CAGR of 12.4 per cent between 2017-18 and 2022-23 partly reflecting real asset creation through leverage and, thus, explaining, to some extent, the contraction in net financial savings during 2021-22 and 2022-23 (Exhibit 4).

Exhibit 4: Growth in various components of household savings

Growth in Household Savings (YoY %)						CAGR (%)		
Growth (%)	2012-13	2017-18	2020-21	2021-22	2022-23	2012-13 to 2022-23 (10 years)	2012-13 to 2017-18 (5 years)	2017-18 to 2022-23 (5 years)
Household sector	8.2	18.3	17.2	5.3	4.7	8.3	8.1	8.5
Gross financial saving	14.1	27.4	31.9	-14.8	13.8	10.8	14.1	7.7
Financial liabilities	13.9	60.2	-4.8	22.0	73.2	16.8	17.8	15.7
Net financial savings	14.2	13.9	50.3	-26.5	-17.3	6.8	12.2	1.6
saving in physical assets	5.4	21.9	-5.2	39.0	17.4	9.0	5.8	12.4
Saving in the form of gold and silver ornaments	9.0	0.3	-6.1	51.4	3.4	5.6	4.9	6.3

Source: MoSPI, Authors' calculation



Household financial savings in India

Deposits (mostly with banks²⁶) continue to be one of the most favoured instruments amid financial assets of Indian households. Deposits recorded a CAGR of 11.3 per cent between 2018-19 and 2023-24, notwithstanding a moderation in its share in overall financial savings of households from 56 per cent in 2013-14 to about 40 per cent in most recent years. Share of currency has been trending down with rapid digitization; there has been a de-growth in cash in hand with households from 2018-19 to 2023-24 (Exhibit 5).

There is a surge in demand for shares and debentures as investments in financial markets gained popularity with higher returns in recent years. Asset under management (AUM) of mutual funds grew at a CAGR of 20.5 per cent between 2013-14 and 2023-24 to reach Rs. 53.4 lakh crore by March 2024. Share of retail investors in total AUM of mutual funds stood at 28 per cent in 2023-24 – materially higher than that of 18.5 per cent in 2013-14²⁷. Moreover, there has been a significant increase in number of Demat accounts in India. Nifty 50 index recorded a CAGR of about 18 per cent between 2020-21 and 2023-24²⁸ – higher than most other asset classes. Thus, shares and debentures as a percentage of gross household financial savings has increased from 1.6 per cent in 2013-14 to 7.8 per cent in 2023-24 (Exhibit 5).

While share of life insurance funds have been steady over the last few years, the share of provident & pension funds has increased significantly over the years (14.9 per cent in 2013-14 to 20.9 per cent in 2023-24 -Exhibit 5). The government has undertaken various measures to formalise the economy and provide social security which could result into higher savings in this category.

Against that backdrop, it was remarkable that the share of small savings in total financial savings of households, which was less than 1 per cent in 2013-14, increased steadily to 11 per cent in 2019-20 despite rapid rise in other financial products that offered attractive returns during this period. Between 2013-14 and 2018-19, investment in small savings exhibited a CAGR of a whopping 90.1 per cent, higher than growth in all other financial saving instruments of households during this period. Share of small savings in households' overall financial savings dipped to 6.8 per cent in 2022-23, before gaining ground to reach 9 per cent by 2023-24. Accordingly, over a decade between 2013-14 and 2023-24, investment in small saving exhibited a CAGR of 43.7 per cent, again higher than any other financial saving products available at the disposal of Indian households (Exhibit 5).

Exhibit 5: Components of household financial savings – Share and growth

Components of household financial savings	Share in total household financial saving (%)							CAGR (%)		
	2013-14	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2013-14 to 2023-24 (10 Year)	2013-14 to 2018-19 (5 year)	2018-19 to 2023-24 (5 year)
Currency	8.4	12.3	11.7	12.5	10.3	8.1	3.4	1.7	22.8	-15.7
Deposit	56.0	36	36.9	40.7	31.9	37.8	40.5	7.6	4.1	11.3
Shares and debentures	1.6	7.6	3.9	3.5	8.2	7.0	7.8	30.3	55.6	9.2

²⁶ Total deposits consist of bank deposits and deposits held with NBFCs, HFCs etc.

²⁷ Calculated using data from the Handbook of Statistics 2023-24, Securities and Exchange Board of India.

²⁸ Calculated from data of National Stock Exchange. Data for each financial year is calculated by averaging the daily observations of each financial year.



Small savings	0.7	9.1	11.0	7.9	9.2	6.8	9.0	43.7	90.1	8.6
Life insurance funds	18.2	17.3	15.5	18.5	18.6	18.7	17.2	10.6	12.6	8.6
Provident and pension funds	14.9	17.7	20.8	16.4	21.1	21.3	20.9	15.0	17.6	12.4

Source: MoSPI, RBI, Authors' calculation

Note: Data for all components except 'shares and debentures' for periods prior to 2018-19 is taken from MOSPI and, from 2018-19, it is taken from RBI. For the 'shares and debentures' component, data till 2022-23 is taken from MOSPI; for 2023-24, it is calculated by summing equity and mutual funds prints from RBI's latest data on household financial assets and liabilities. For a few years, summation of shares of various components may differ from unity.

The rise in shares of pension and provident fund and investment in shares and debentures in overall household financial savings over the last decade are on expected lines given rising income levels and affordability, better awareness and a greater degree of formalisation in the economy. Households' reliance on cash is also coming down with greater digitisation. Bank deposits still carry by far the highest share of total household financial savings, despite moderation in growth rate in recent years. Continued focus on product innovation, technological advancement, and customer service will likely ensure strong relevance of bank deposits in household financial savings in foreseeable future.

However, the sharp growth in balance under small savings (about 38 times) between 2013-14 and 2023-24 – faster than that of any other financial saving products available with Indian households – clearly deserves special attention. It is noteworthy that small savings enjoy a share of 9.0 per cent of overall household financial savings today, higher than that of households' investment in shares & debentures (7.8 per cent), albeit lower than that of life insurance funds (17.2 per cent), pension & provident funds (20.9 per cent) and deposits (40.5 per cent).

Significance of small savings

It is evident from the above discussion that small savings plays a pivotal role in the economy, particularly for middle- and lower-income categories as it helps to mobilise their savings in productive channels of the economy despite rising popularity of other market-linked financial products that provided higher returns to investors in recent years. There are several benefits associated with small savings such as lower ticket size, tax benefits, risk free return, etc. Additionally, it serves as a simple yet effective instrument of saving for large segment of the population, including for financially and technologically less savvy people. By expanding the reach of small saving accounts, a huge segment of the population can be brought under the ambit of formal financial savings.

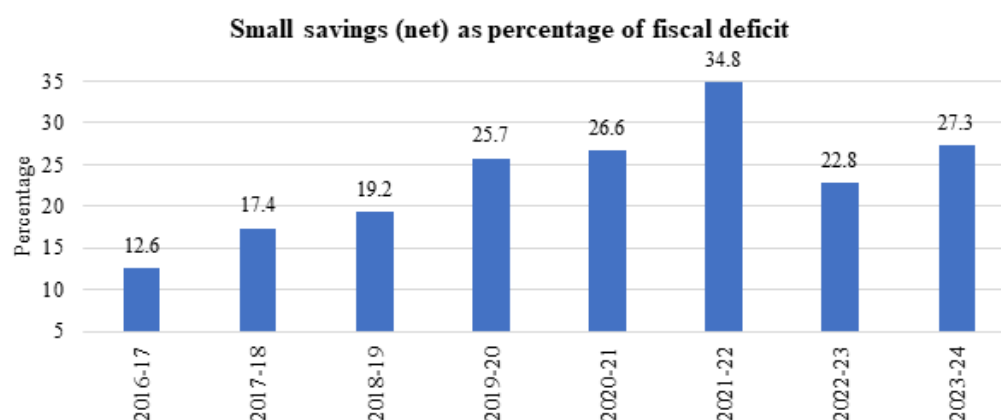
Importance of small savings is also derived from financing budget deficit of the government. Since yield curve of government dated securities serves as a "public good" which is used as a benchmark for other interest-bearing instruments, excessive borrowing through dated government securities has the potential to "crowd out" private investments. Hence, importance of small savings as a source of financing government fiscal deficit has increased in recent times – small savings (net) as percentage of central government's gross fiscal deficit reached 27.3 per cent in 2023-24 from merely 12.6 per cent in 2016-17 (Exhibit 6).

Certain small saving instruments offer modestly higher interest rates. However, given the improvement in quality of government spending as evident from rising share of capex, which



now has been trending about 3 per cent of GDP, servicing debt on small savings is unlikely to have significant burden on the government.

Exhibit 6: Small savings as a source of financing fiscal deficit of the central government



Source: Union Budget documents and authors' calculation

Composition of small savings schemes

With rising importance of small savings in the overall household financial savings, it may be helpful to dig deeper into various small saving schemes to understand these instruments better.

Post office saving schemes have shown impressive growth over the years. Between March 2019 and March 2022, outstanding balance on post office saving schemes increased from Rs. 9.1 lakh crore to Rs. 14.6 lakh crore recording a CAGR of 17.1 per cent²⁹. Time deposit schemes have also been popular among the savers as they registered a CAGR of 26.4 per cent between March 2019 and March 2022. Outstanding balance on time deposits stood at Rs. 2.5 lakh crore in March 2022.³⁰ Share of time deposits in outstanding post office saving schemes increased from about 14 per cent in March 2019 to about 17 per cent in March 2022 (Exhibits 7 and 8).

Specific schemes targeting particular sections of the population – such as *Senior Citizens Savings Scheme* and *Sukanya Samriddhi Account* – have witnessed high growth over the years. *Senior Citizen Saving Scheme* (SCSS), with a minimum deposit of Rs. 1000 and with attractive interest rate, is providing old age security. As a part of *Beti Bachao Beti Padhao* campaign, the government launched *Sukanya Samriddhi Scheme* in 2015.³¹ The scheme encourages parents to invest in girl child's future by securing expenses on education and marriage. Number of accounts under *Sukanya Samriddhi Scheme* crossed 2.4 crore by March 2022³².

Between March 2019 and March 2022, *Senior Citizens Savings Scheme* and *Sukanya Samriddhi Account* have registered CAGR of 28.9 per cent and 39.2 per cent, respectively³³, in outstanding balance. Moreover, share of *Senior Citizens Savings Scheme* in outstanding post office saving schemes increased to about 8 per cent in March 2022 from about 6 per cent in March 2019; share of *Sukanya Samriddhi Account* increased from about 4 per cent to about 6 per cent over this period (exhibits 7 and 8).

²⁹ Calculated from data of Annual Reports, Department of Posts, Government of India

³⁰ Calculated and retrieved data from Annual Reports, Department of Posts, Government of India

³¹ Sukanya Samriddhi Yojana (Press Note Details: Press Information Bureau)

³² Annual Report 2022-23, Department of Posts, Government of India

³³ Calculated using data from Annual Reports, Department of Posts, Government of India

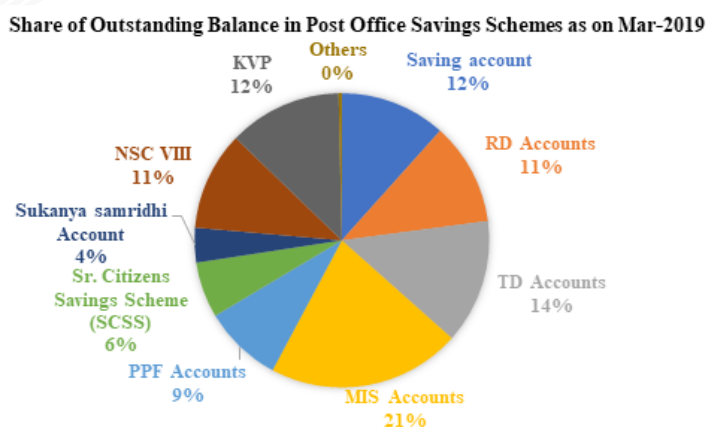


Kishan Vikas Patra, after its re-launch, has also been an attractive saving instrument. Outstanding balance in *Kisan Vikas Patra* recorded a CAGR of 15.6 per cent between March 2019 and March 2022³⁴. Advantages of *Kisan Vikas Patra* include that it requires only Rs.1000 for opening an account and does not have a maximum limit.

Moreover, there are more than 10 crore recurring deposit accounts as part of post office savings as on March 2022³⁵.

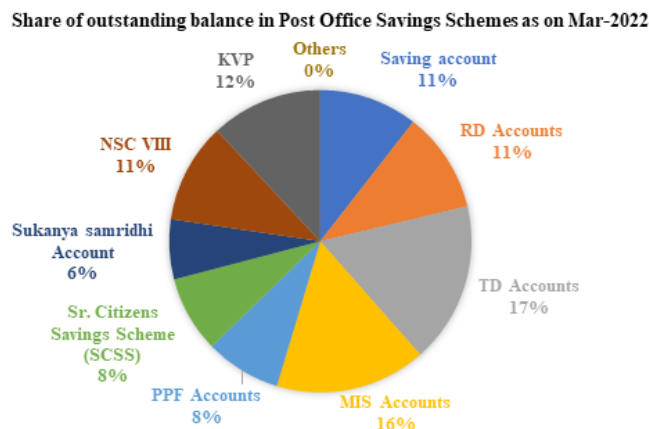
To provide financial security to women in India, the government launched *Mahila Samman Savings Certificate* from 01 April 2023 for a period of two years upto 31 March 2025.

Exhibit 7: Share of outstanding balance in post office savings schemes as on Mar-2019



Source: Annual Reports, Department of Posts, Government of India, Authors' calculation

Exhibit 8: Share of outstanding balance in post office savings schemes as on Mar-2022



Source: Annual Reports, Department of Posts, Government of India, Authors' calculation

Small savings – Interest rates and key drivers

At present, interest rates on small savings are competitive given macroeconomic outlook of India which made the small saving schemes all the more attractive among savers. With falling inflation rate over the years, the real return on small savings have been encouraging. Inflation rate has come down to 4.6 per cent in 2024-25 from 10 per cent in 2012-13 (Exhibit 9). With inflation averaging around mid-4 per cent during 2024-25, real returns on small saving instruments remained significantly positive. Higher real rate of returns is protecting savings of people and should provide positive impetus to small savings schemes.

³⁴ Calculated using data from Annual Reports, Department of Posts, Government of India

³⁵ Annual Report 2022-23, Department of Posts, Government of India


Exhibit 9: Interest rate structure of various post office saving schemes

	2012-13	2014-15	2016-17	2018-19	2020-21	2021-22	2022-23	2023-24	2024-25
Savings Account	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1 Year Time Deposit	8.2	8.4	6.9	6.9	5.5	5.5	5.5	6.9	6.9
5 Year Time Deposit	8.5	8.5	7.8	7.8	6.7	6.7	6.7	7.5	7.5
5 Year Recurring Deposit	8.4	8.4	7.3	7.3	5.8	5.8	5.8	6.7	6.7
5 Year Monthly Income Account	8.5	8.4	7.7	7.7	6.6	6.6	6.7	7.4	7.4
5 Year Senior Citizens Savings Scheme	9.3	9.2	8.5	8.7	7.4	7.4	7.6	8.2	8.2
5 Year National Savings Certificate	8.6	8.5	8.0	8.0	6.8	6.8	6.8	7.7	7.7
Public Provident Fund	8.8	8.7	8.0	8.0	7.1	7.1	7.1	7.1	7.1
Sukanya Samriddhi Account		9.1	8.5	8.5	7.6	7.6	7.6	8.0	8.2
Repo Rate	7.50	7.50	6.25	6.25	4.00	4.00	6.50	6.50	6.25
CPI Inflation Rate	10.0	5.9	4.5	3.4	6.2	5.5	6.7	5.4	4.6

Source: National Savings Institute, RBI, MoSPI, Authors' calculation

The vast network of post offices has been in the forefront in driving small saving schemes in India. The Department of Posts remains the 'largest postal network' globally with about 1,59,251 post offices as on March 2022 and is a core stone in last mile reach of various services. Recently, the government has allowed select banks in the private sector in addition to the public sector banks to accept small saving deposits.

Rising income level of India's population should further boost household savings, including small savings, in the coming years.

Average monthly per capita expenditure (MPCE) in rural and urban areas increased to stand at Rs. 4,122 and Rs. 6,996, respectively, in 2023-24 from Rs. 1,430 for rural and Rs. 2,630 in urban areas in 2011-12. GDP per capita in US dollar terms increased at a healthy rate of 5.6 per



cent CAGR between 2013 and 2023 to reach USD 2,481 in 2023. Moreover, India's population is expected to keep growing for multiple decades in contrast to many other major economies witnessing declining trends in population. Rising population and higher income levels should further boost savings in India.

Postal savings – Recent global experience

Global experience shows that postal saving provides a great tool of financial inclusion by offering deposit and saving services to financially underserved people by leveraging their vast postal networks. In 1861, the UK established Post Office Savings Bank for the general salaried people to “provide for themselves against adversity and ill health”. In 1969, the Post Office Savings Bank was renamed to National Savings with accountability transferred to Treasury ministers and through their outlets National Savings products could be availed. Later this was renamed as National Savings and Investment.

Japan Post Bank Co. Ltd, which was established as recently as in 2007, is a part of Japan Post Group and is providing financial services to a huge number of customers through post office networks. It provides retail services such as saving deposits, asset management and remittance settlements. Additionally, it also provides loans, salary, pension payments, etc.

Postal Savings Bank of China was also established in 2007 and it is providing financial services by leveraging country's postal network. It is now one of the leading retail banking providers in China and catering to various rural and remote areas with a large deposit taking network. China Post group is providing agency outlet services through its postal offices to the Postal Savings Bank of China.

Indonesian government, through its programs like the *Program Keluarga Harapan* (PKH), has provided digital financial accounts to millions, through state-owned banks. Commercial banks have also been encouraging small-scale saving among low-income households through its program of “*abunganKu*”, which is a basic savings account with low minimum balance requirements and no administrative fees.

In Malaysia, *Bank Simpanan Nasional* (BSN), a government-owned savings bank, is designed to promote thrift among small savers is playing a key role.

Small savings in India – A few policy recommendations

Currently, small savings schemes are available to the people through postal networks, public sector banks and only a few select private banks. However, many private sector banks and financial institutions have significant branch networks with strong focus on technology and innovation and are in a great position to furthering the reach of small savings. Commercial banks have 1.7 lakh total number of functioning offices as on March 2024. About 60 per cent of these offices are located in rural and semi-urban areas. Similarly, number of offices of life insurers stood at 11,517 in March 2024. Hence, the regulated financial entities may be allowed to operate in small saving schemes to provide access to more people of such products and services.

For some of the small saving schemes like *Sukanya Samriddhi Account* and Senior Citizen Savings Scheme, there is a maximum cap on investing whereas for schemes such as *Kisan Vikas Patra* there is no maximum limit. Periodically raising the upper limits on small saving schemes may attract more depositors towards such schemes. This may seemingly put additional interest rate burden on the government. However, as mentioned earlier, better quality of public expenditure from funds mobilised under such small saving schemes has the potential to offset the higher interest payment obligations.



The *Mahila Samman Savings Certificate* has been operative since April 2023 for a period of two years till end-March 2025. Similarly, there can be more small saving products targeting specific groups like micro entrepreneurs.

Further acceleration in digital support with effective risk mitigation framework for small saving products has huge potential to attract more customers towards them particularly from middle income and lower middle-income categories residing in semi-urban and urban areas. Complementing these efforts with accelerated doorstep delivery mechanisms for such schemes will likely have a lasting impact on small saving schemes in future.

CONCLUSION

This paper finds that the dynamics of India's household financial savings is evolving at a rapid pace in recent years with realignment in preference for various saving instruments. It is not surprising that the share of pension and provident fund and investment in shares and debentures are rising in overall household financial savings given rising income levels and affordability, better awareness and a greater degree of formalization in the economy. Households' reliance on cash is also coming down with greater digitization. Despite relatively moderate growth in recent years, bank deposits still carry by far the highest share of total household financial savings. With continued focus on product innovation, rapid technological advancement, and customer service, bank deposits will likely maintain its primacy amid various instruments of household financial savings in foreseeable future.

Against this backdrop, it is remarkable, and possibly somewhat under-appreciated, that balance under small savings schemes registered a CAGR of over 43 per cent and grew over 38 times between 2013-14 and 2023-24. This growth is faster than that of any other financial saving products available at the disposal of Indian households. In comparison, it may be noted that new-age financial saving instruments such as shares and debentures recorded a CAGR of about 30 per cent and grew by about 14 times during the same period. Indeed, at present, small savings enjoy a share of 9.0 per cent of overall household financial savings, higher than that of household sector's investment in shares and debentures (7.8 per cent), albeit lower than that of life insurance funds (17.2 per cent), pension and provident funds (20.9 per cent) and deposits (40.5 per cent).

Accordingly, it needs to be noted that while new-age high yielding financial saving products have gained popularity of late, partly reflecting the high returns they enjoyed in most recent years, it will be misleading to underestimate the core strength and the long-term potential of traditional avenues of household saving such as bank deposits and small savings.

For small savings, a few key advantages include the risk-free profile of such products, along with ease of operations for not so technologically and financially savvy people, and physical accessibility of the same at most remote corners of the country. Especially during periods of cross-border macroeconomic uncertainties and volatile financial markets, policy support for simple and traditional saving instruments such as bank deposits and small savings might be proven wise in boosting household savings in a healthy and sustained manner.

Moreover, importance of small savings has grown in financing government fiscal deficit over the years as it does not impact the yield curve of the government dated securities which is a "public good". Significant improvement in quality of government spending in recent years offset the modestly higher interest expenses on small saving schemes.

Overall, this paper reiterates the strong relevance of small savings in India with their rising share in overall household financial saving instruments over the last decade despite growing popularity of other new-age high yielding financial saving products. Recent trends suggest



that small savings instruments enjoy strong future potential for mobilising household savings and promoting a culture of healthy and sustained saving, including for people in the bottom of the pyramid and in remote areas. With further modest policy nudge such as allowing all regulated private sector banks and other regulated financial institutions to leverage their branch networks to offer small saving products, the reach of small savings can go far and beyond. Various small saving schemes such as time deposits, and schemes targeting specific sections such as Senior Citizens Savings Scheme and Sukanya Samriddhi Account have gained significant traction over the years. For some of the popular small saving schemes, it might be useful if the government considers enhancing the upper limits of such investments periodically to attract better demand. Specific small saving products may be considered for micro entrepreneurs. By accelerating digital support, along with enhancing physical reach and effective risk mitigation framework, small savings can play an even bigger role in strengthening the foundation of household savings, especially during periods of high global uncertainty and volatile financial markets.

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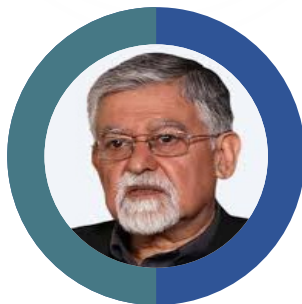
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SESSION 4

Fiscal Dimensions of a Big Investment Push



Session Chair:
Arvind Virmani
Member, NITI Aayog (India)



Speaker 1:
Hélène Rey
Economist and Professor
of Economics
London Business School



Speaker 2:
Laveesh Bhandari
President and Senior Fellow
Centre for Social and
Economic Progress (CSEP)



Speaker 3:
N.R. Bhanumurthy
Director
Madras School of Economics,
Chennai



SESSION 4 SUMMARY

India's developmental and climate ambitions demand an investment-led fiscal strategy grounded in efficiency, sustainability and innovation. With limited fiscal space and rising long-term needs, the focus must shift from merely increasing outlays to maximising impact per rupee spent.

While capital expenditure has tripled since FY20, it remains inadequate to meet infrastructure and climate goals. Public debt exceeds 80% of GDP, with interest payments consuming nearly 30% of revenues. India's tax-to-GDP ratio, though improved to 18%, lags behind peer economies. Fossil fuel taxes—once a key revenue stream—will shrink with decarbonisation, even as green spending rises. Weak asset monetisation, fragmented public programs and outdated fiscal rules hamper capital formation. Additionally, underinvestment in human capital, R&D and digital infrastructure constrains long-term productivity. Fiscal federalism suffers from rigid devolution, limited borrowing flexibility for states and misaligned incentives in intergovernmental transfers.

A modern fiscal framework must expand the revenue base through direct tax reforms, property taxation, carbon pricing and asset recycling. Spending must shift toward outcome-based budgeting, consolidated schemes, and reclassified investments in education, health and innovation as capital expenditure. A new generation of fiscal rules should ensure borrowing funds growth-enhancing investments. Strengthening public financial management with geospatial tools and lifecycle costing will improve execution. Empowering states via greater borrowing room, performance-based grants and federal rebalancing is vital. Finally, climate-aligned public finance—through carbon top-ups, climate budget tagging and just transition support—must anchor India's green transformation. Spending smarter, not just more, is key to sustainable growth.



STRATEGIC INVESTMENT IN GREEN ENERGY

Investing in green energy infrastructure is a strategic imperative. While the optimal energy mix may vary across countries—with some European nations relying on nuclear alongside renewables—a balanced portfolio of renewable sources is essential for ensuring energy security and achieving decarbonisation goals. Additionally, the transition to electric vehicles and the increasing role of artificial intelligence in driving productivity will lead to higher electricity demand. Countries that develop a comparative advantage in cheap and renewable electricity will have a long-term competitive edge in global markets.

India stands to benefit immensely from these shifts. AI-intensive sectors, especially in professional and financial services and IT, are already leading global productivity growth. In the U.S., for instance, productivity in these sectors grew nearly five times faster than in more traditional industries like construction and retail between 2018 and 2022—4.3 per cent versus 0.9 per cent, respectively. Given India's strong capabilities in business services and IT, there is a significant opportunity to expand high-productivity, export-oriented service sectors powered by clean energy and digital innovation.

FISCAL TOOLS FOR THE GREEN TRANSITION

Two fiscal strategies stand out as enablers of this transition: carbon pricing and infrastructure financing.

Carbon Pricing

A well-structured carbon pricing system can be a powerful policy tool. The European Union's Emissions Trading System (ETS) demonstrates how such mechanisms can evolve effectively. Initially characterised by low prices and transitional exemptions, the EU's system gradually increased carbon prices by withdrawing permits from the market. Today, carbon prices range from 65 to 82 per ton, having peaked at 100—still below the estimated social cost of carbon (250–300), but sufficient to shift investment behaviour.

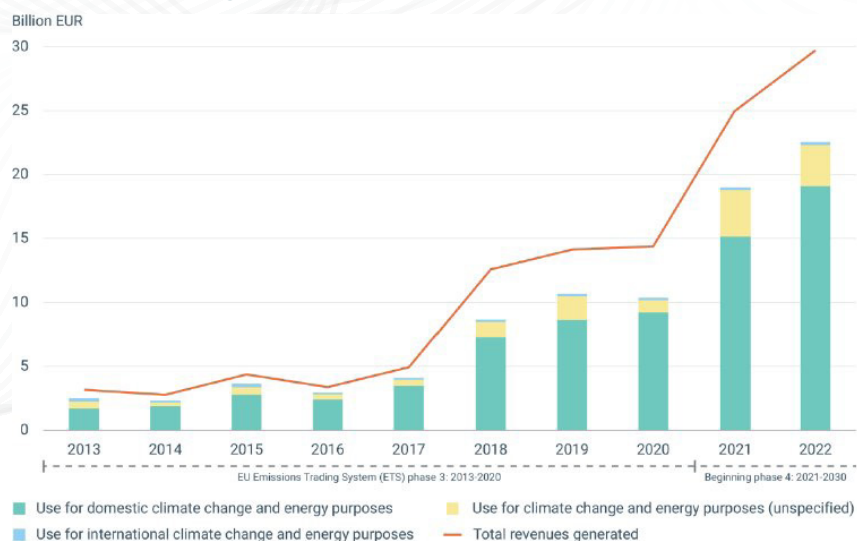
For India, adopting a similar approach—even starting with a low carbon price—could lay a predictable pathway toward its 2070 net-zero target. Besides offering clear investment signals, carbon pricing also generates government revenue. The EU's system, for example, raised \$50 billion in 2023, which helped finance green initiatives. A similar model could provide India with funds for sustainable infrastructure development.

Figure 1: Carbon Pricing and Emission Trading Scheme





Figure 2: EU Emission Trading Scheme



Financing Green Infrastructure

Public finance institutions also play a crucial role in mobilising investments. The United Kingdom provides a notable example, where public-sector balance sheets were used to de-risk private investment in priority sectors. This approach not only supports viable projects but also enhances the capacity of local governments to implement climate-resilient solutions.

India can pursue a two-tier investment strategy: large-scale national infrastructure (such as expanding the electricity grid) and decentralised, city-level initiatives aimed at climate adaptation. With accelerating urbanisation, empowering municipalities will be key to building sustainable and resilient urban environments. The UK's offshore wind sector showcases the benefits of strategic public-private collaboration. With clear carbon pricing signals and long-term renewable energy targets aligned with its 2050 net-zero commitment, the UK attracted private investments that helped reduce offshore wind costs by 70 per cent between 2015 and 2022. India can adopt a similar approach to catalyse innovation and drive down costs in emerging green technologies.

To ease fiscal burdens, engaging the private sector is crucial. The UK's financial institutions—such as the UK Infrastructure Bank and British Business Bank—illustrate how public-private collaborations can mobilise capital and de-risk green investments. India's urbanisation trends necessitate climate resilience measures. City Climate Finance Facilities can aggregate technical expertise to develop investment-ready projects, especially in clean energy and climate adaptation. Clear investment goals—such as expanding offshore wind capacity and scaling solar energy—enhance investor confidence and sectoral growth.

EDUCATION: THE FOUNDATION OF SUSTAINABLE GROWTH

Investing in education drives technological advancement and productivity. Research from MIT underscores the high returns of early childhood education, with economic benefits exceeding traditional infrastructure projects. Accounting for education as capital expenditure would recognise its long-term fiscal advantages, as it ultimately “pays for itself.”

FISCAL GOVERNANCE: STRENGTHENING TRANSPARENCY

A robust fiscal governance framework enhances decision-making. Independent forecasting authorities—such as the UK's Office for Budget Responsibility—provide essential analysis to guide public finance strategies. Transparent fiscal policies, longer-term forecasting, and independent oversight improve accountability and economic stability.



A DUAL OPPORTUNITY

India has a major opportunity to lead in green energy and digital innovation. Decarbonisation and productivity growth in AI-driven sectors are complementary forces that can drive long-term economic transformation. A well-designed carbon pricing mechanism, coupled with public finance support for infrastructure, can ensure a successful green transition while positioning India as a global leader in clean energy and digital services.



The Fiscal Gap from India's Energy Transition: Some Challenges and Avenues



Laveesh Bhandari

Centre for Social and Economic Progress (CSEP), Delhi

INTRODUCTION

As India shifts from a fossil fuel-based economy to one driven by cleaner energy, significant changes will occur across various economic sectors, affecting individuals, households, communities, companies, and governments. Focusing on governments, a crucial aspect is the impact on their budgets. Currently, both state and central government tax fossil fuels differently— coal is subject to a low GST and a compensatory cess, while petroleum products like motor oil (petrol) and diesel are taxed with customs duties and excise by the central government, and VAT by state governments. Additionally, many fossil fuel companies are highly profitable, generating corporation tax revenues. In contrast, the renewable energy sector requires substantial government support through subsidies and regulatory measures. As dependence on fossil fuels decreases, governments will face declining revenues from the energy sector. This raises several questions: How will governments manage this revenue loss? What is the extent of the revenue gap they will face? Will state governments be more or less affected than the central government? What strategies can they employ to address these challenges? A series of papers (Bhandari & Verma, 2024a; Bhandari & Verma, 2024b; Bhandari and Dwivedi, 2023a; Bhandari and Dwivedi, 2023b) look into these issues.

The basic insights are as follows. First revenues, both tax and non-tax, for both central and state governments, were equivalent to 3.2 per cent of India's GDP in 2019, this was greater than India's defence budget or total government expenditure on health and education that year. Over time, as fossil fuel share in India's energy portfolio declines, this share will also fall. But interestingly the fall is frontloaded since GDP growth will be faster than growth in fossil fuel use, given India's policy direction of greater use of EVs and RE. Moreover, both the union and state governments will suffer the consequences though some states will be impacted more. States in the eastern part of India with greater coal for instance will be impacted the most. The question, then, is: What can we do, and why do we need to do it?

And therefore, we need to focus on the revenue side, and ask ourselves the two key questions – how will we cover the revenue gap, and how will we share it between the union and state governments and between state governments?

As mentioned before India's general tax revenue as a share of GDP fluctuates but has not



significantly increased over the last several years, ranging between 16 to 18 percent of GDP or thereabouts. This is despite impressive reforms in both direct and indirect taxation in the past decades and much more so in recent years.

The introduction of Goods and Services Tax (GST) is undoubtedly a very important event in India's history of taxation, but the introduction has not been a single event, a multitude of changes have followed its introduction including greater digitization, amnesty scheme, rate rationalization, etc. Moreover, the introduction of E-Invoicing and E-Way Bills for businesses and shipments above a minimum benchmark was also aimed at reducing evasion and avoidance. On the direct taxes front the reduction of corporate tax rates, faceless assessment and appeals, *vivaad se vishwaas* to reduce disputes, taxation of dividend distribution, and also appropriate taxation of foreign companies through the concept of 'significant economic presence' were some but not the only measures aimed at increasing the ease of businesses' engagement with tax authorities, and consequently enhancing the potential for tax revenues. Unfortunately, the combined effect of this though not insignificant has not been adequate to lift the tax to GDP ratio beyond the 16 to 18 percent range.

Looking back, if we examine the tax-to-GDP ratio over the past 20 to 30 years, we'll find that its growth follows a step function rather than a smooth curve. Major reforms occur, and then, after five, six, or even ten years, there is a sudden surge. It's unpredictable. This suggests that we may not need to take immediate action; rather, the measures already implemented may yield results in the coming years, leading to a spike in the tax-to-GDP ratio. For its income level, India's tax-to-GDP ratio is slightly lower than expected, though not by much. As economic growth continues and reforms take effect, the ratio is likely to rise naturally. Though we can predict the eventual rise of the tax to GDP ratio, we cannot be sure when that will occur. And therefore, we do need to look at other taxation alternatives.

A frequently discussed solution, particularly in the West, is the imposition of carbon taxes. However, carbon taxes are inherently temporary, lasting perhaps 20, 30, or 40 years, after which they will become irrelevant as we transition away from fossil fuels. The question is: Can they serve as a viable short-term solution? To answer this let us first consider the institutional challenges. In India, taxation powers are divided between the central and state governments, and carbon taxes are not explicitly assigned to either. The central government may be able to impose such a tax, but states already levy their own taxes on fuels, particularly petroleum. Convincing states to relinquish this power would be extremely difficult. Implementing carbon taxes would therefore require a constitutional amendment. Unless they are imposed as a top-up tax, that is, over and above taxes that are already in place. But that would add a lot of complexity to an already overcomplicated taxation regime.

The challenge with this is the ongoing fiscal imbalance between states and the central government. It is argued that state government revenues in the aggregate have not seen as significant growth as union government revenues, primarily through cess and surcharges imposed by the union. Unlike other tax revenues, cess and surcharges are not shared with state governments, which has further strained center-state fiscal relations. Given these dynamics, securing state cooperation for a constitutional amendment seems highly unlikely in the next decade. For context, it took nearly two decades to implement GST. Institutional changes of this magnitude are never easy and require significant time—time that we don't have if we seek urgent revenue solutions. This is why I believe traditional carbon taxes are unlikely to succeed in India.

There is also another issue: While India heavily taxes petroleum products—sometimes more than some Western countries—the real problem lies with coal. One might argue that we could simply tax coal and find a way to share the revenues. However, coal is primarily used



by thermal power plants, which supply electricity to DISCOMs (state-level power distribution companies), many of which are already in deep financial distress. If coal taxes increase, either consumers or DISCOMs must absorb the cost. Given the structure of India's power sector, it is more likely that DISCOMs would bear the burden, worsening their already precarious situation. Addressing the DISCOM crisis is a separate issue altogether, so I won't go into it now.

If carbon taxes are impractical, what are the alternatives? There has been discussion about further simplifying direct taxation, particularly regarding agricultural income. I previously worked on rural markets, consumers, and demographics, and I can assure you that taxing the rural rich—particularly large landowners—would be incredibly difficult. The complexities of agricultural taxation make it an unlikely revenue source. That leaves us with GST. While ongoing improvements are making the system more efficient, increasing GST rates is questionable—how much more can be raised without economic repercussions?

Another potential avenue is transportation taxation. As petroleum consumption declines, why not start taxing transportation itself? New technologies now enable distance-based taxation, where GPS systems measure how far a vehicle travels, and tax rates are applied accordingly. Under such a system, petrol-based vehicles would incur higher taxes, while electric vehicles would pay less. While this is technically feasible and operates as a user tax, there are concerns. User taxes have a significant negative impact on economic growth and are often inequitable. Similar issues arise if we consider increasing electricity duties—again, a user-based tax that disproportionately affects certain groups.

In short, every potential revenue avenue presents challenges. So, what do we do? Do we simply wait and hope that existing reforms eventually yield results, or should we take proactive steps?

I believe we should explore a hybrid carbon tax approach. Instead of a standalone carbon tax, we could integrate it within GST as a “top-up tax.” This approach would allow both the central and state governments to maintain their existing tax structures while gradually incorporating a carbon tax component. The advantage of this “GST-integrated top-up” system is that it avoids institutional roadblocks—it does not require renegotiation with states, and revenue collection could begin immediately. Over the next 10 to 20 years, such a tax could generate significant funds, which could be used for other critical policy needs.

However, in the long run, raising additional tax revenue looks increasingly difficult. If we seek sustainable revenue solutions, we must also explore non-tax revenue sources. Given the scale of infrastructure development in India, asset monetization, land value capture, and other innovative financing mechanisms could provide long-term fiscal stability. This author has not come across many studies exploring this aspect in depth, but asset-swapping and similar measures hold great potential.



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Reorient Domestic Policies to Finance Big Investments in India



N R Bhanumurthy*

Madras School of Economics, Chennai

INTRODUCTION

India aiming to become a Viksit Bharat by 2047 has brought many empirical macroeconomic issues into the forefront. While there are many studies that focussed on what it takes to become Viksit Bharat (or developed country), an RBI study suggest that India needs to grow at a compounded annual growth of 7.6 per cent between 2023-24 to 2047-28 as per the World Bank classification³⁶. Economic Survey of 2024-25 suggest that India needs to grow at 'around' 8 per cent for a decade or two to achieve 2047 goal. With the current potential growth of about 6.5 per cent or below, as estimated by many studies, reaching 8 per cent every year, though ambitious, as articulated by Subramanian (2024) and others, it needs a sharp increase in determinants of growth. To bridge the gap between the current potential growth and the growth that is required to become Viksit Bharat, various estimates, including the Economic Survey 2024-25, suggest that there is a need for pick-up in the investment rate as well as improvement in the Incremental Capital-Output Ratio (ICOR) or in the growth of Total Factor Productivity (TFP). Presently the investment rate, as estimated through the Gross Fixed Capital Formation (GFCF), is closer to 32 per cent and studies suggest there is need to push this rate at least to 35 per cent to achieve the 8 per cent growth. With respect to TFP growth, it needs to be improved from the baseline of 2.4 per cent to 2.6 per cent (p.28, Subramanian, 2024). Enhancing 2 to 3 per cent higher investment rate every year as well as improvement in TFP growth appear to be a major challenge for India and it needs different approach than business-as-usual. In this note, we highlight three possible pathways to achieve the investment and productivity goals in the next twenty-five years. The three pathways are i) relooking at savings policies, ii) appropriate macro-fiscal framework, and iii) prioritising government expenditures to improve productivity.

SAVINGS POLICIES

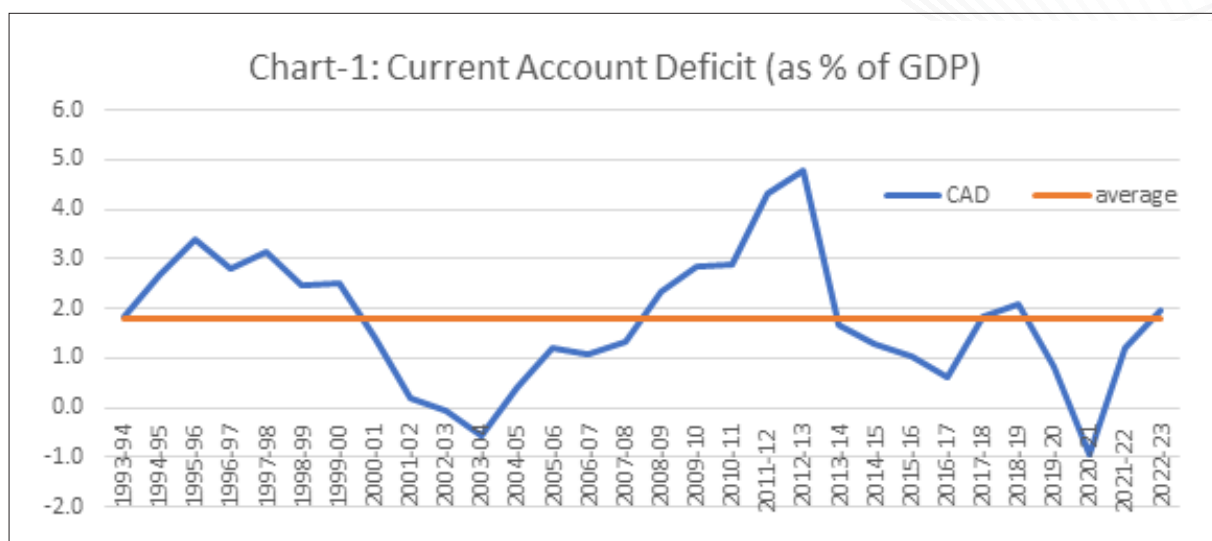
The role of domestic savings in the overall macro economy, especially in a capital scarce country like India, is well-documented. In the post-1991, especially when India faced the crisis on the external balance sheet, it was also a deliberate policy choice to depend more on the domestic savings vis-à-vis the foreign savings. Indeed, when we look at the high growth

³⁶ A study by Subramanian (2024) estimate that India needs to achieve \$55 Trillion by 2047-48, which means that annually real GDP growth should be at 8 per cent. On the other hand, any early estimate by Rangarajan (2023) suggest a real growth of 6.1 per cent and a nominal growth of 10.18 per cent annually until 2047

* Author's E-mail: nrbmurthy@gmail.com.



period of mid-2000s, it is abundantly clear that sharp increase in investment rates and subsequent increase in real GDP growth is largely caused by the historically high domestic savings rate. What was most striking was that in that high growth episode, there was increase in all the components of savings. Savings in the government sector, which is normally be negative for governments that run fiscal deficits of not less than 6 per cent, also turned out to be positive due to disinvestment proceeds and sale of spectrum. By 2007-08, India could manage to achieve the FRBM targets, which were otherwise doubted to be unachievable targets. During the period, India's current account deficit (largely the gap between domestic savings and domestic investments and largely financed by foreign savings) was also at a well-manageable level of below 2 per cent (average of 1.8 per cent to be precise, see chart-1).

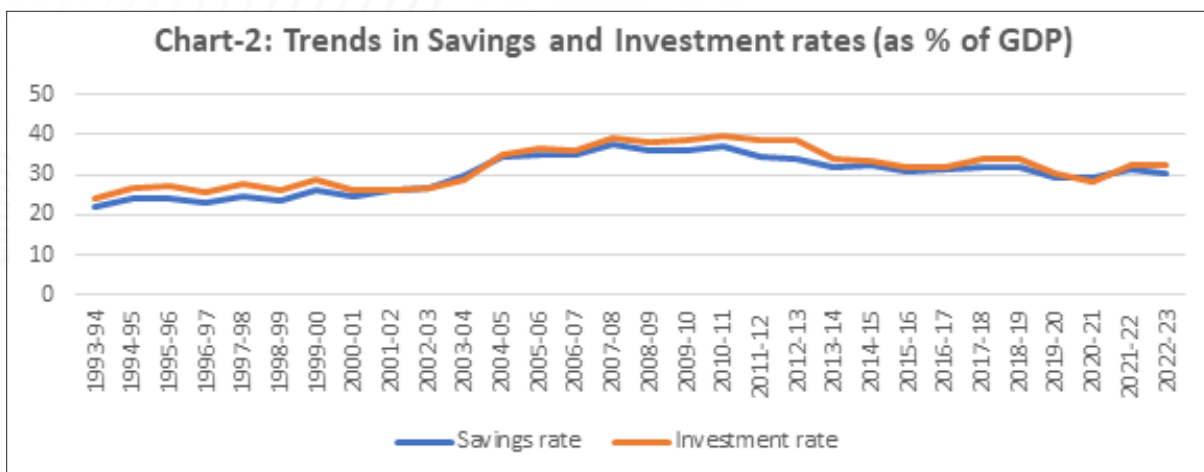


In the recent period, we almost see a reversal of these trends. Decline in domestic savings, especially the household financial savings used for funding fiscal deficits as well as private investments, as well as public sector dis-savings appears to have pulled down the potential GDP of India. With an investment rate of about 32 per cent and with Incremental Capital Output Ratio (ICOR) being 5, the potential real output growth appears to be closer to, rather a tad below, 6.5 per cent than over 7 per cent that is required for achieving the Viksit Bharat targets. Assuming that improving ICOR in short run is a constraint, one way to improve the potential growth is to increase the investment rate by 2 to 3 per cent to achieve 35 per cent and this needs a domestic saving rate of about 33 per cent. The other way is to allowing the foreign savings by widening the CAD. This strategy needs a wide range of institutional changes ranging from full convertibility on capital account, having better early warning systems, and so on. However, global experience suggests that despite having better institutional setups, it is not sure that domestic economy is immune to global financial risks as well as sudden stops especially when a country run a wider CAD than that is sustainable. In India, both RBI and Government have been consciously avoiding larger exposure to foreign savings. For instance, the share of external debt in the general government debt is just about 2 per cent GDP, the lowest among both advanced and emerging market economies. Another argument that goes against larger CAD is the 2013 episode when the unsustainable government balance sheets transmitted to external balance sheet and pushed the CAD closer to 6 per cent. The consequences of that larger CAD and the subsequent speculative attack on exchange rate and its volatility following the Fed's *tapper tantrum* episode is still fresh in policy discourses.

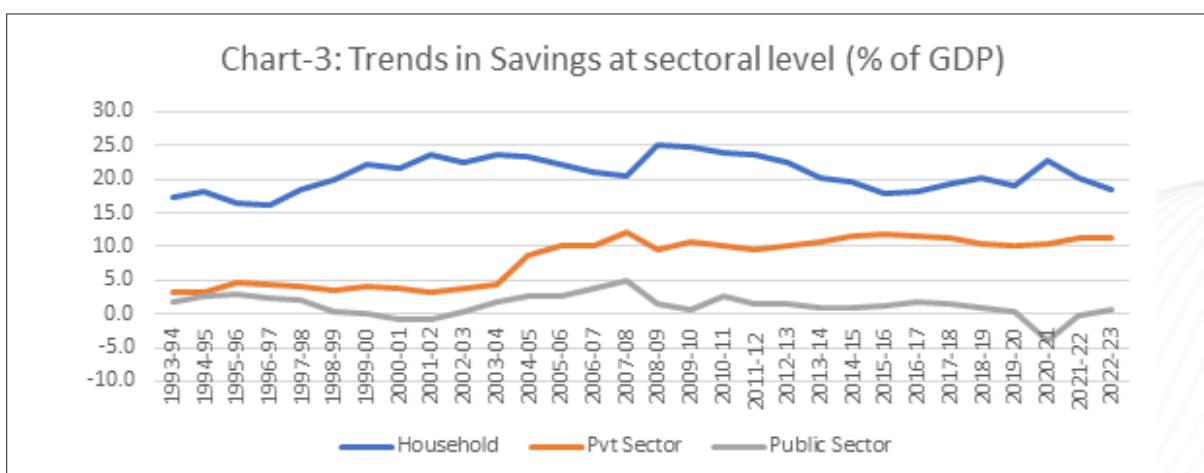
Given these challenges, for long term stability, India needs to follow the time-tested path of



savings-led growth and encourage domestic savings through some specific policies rather than looking to depend on foreign savings. On the contrary, in the recent period, there were policies that have largely discouraged domestic savings leading to decline in savings rate to as low as 28 per cent 2021-22 (see chart-2). Indeed, there is a shift in the composition of savings from household financial savings to physical savings, which will hamper financing of both government deficits and private investments.



As discussed earlier, domestic savings in India peaked during 2007-08 when government sector exhibited positive savings with overall public sector savings peaking at 5 per cent (see Chart-3). Hence, there is an urgent need for the government to focus on disinvestments as well as its plans about National Asset Monetisation Pipeline that has set some ambitious targets. At least a partial success in these initiatives should ensure positive government sector savings. However, given that the recent trends in achievement of disinvestment targets is minimal that even the 2025-26 Union Budget do not specify annual targets any more, rather it is merged under 'non-debt creating capital receipts (NDCR)'.



There was also some discussion about the causality between savings and growth and the existing literature suggest a mixed result. While our estimates do suggest a bi-directional causation between savings and growth, in terms of extent, it is clear that causation from savings to growth is stronger than from growth to savings³⁷. At a disaggregated level, within the savings, it is the public sector savings that has a stronger causation with growth and this should be working largely through investments. Hence, focusing on public sector savings,

³⁷ The F-statistic based on simple Granger Causality suggest a higher F-statistic for savings to GDP compared to GDP to Savings. Similarly, causation from public sector savings to GDP growth has a higher F-statistic compared to other components of savings.

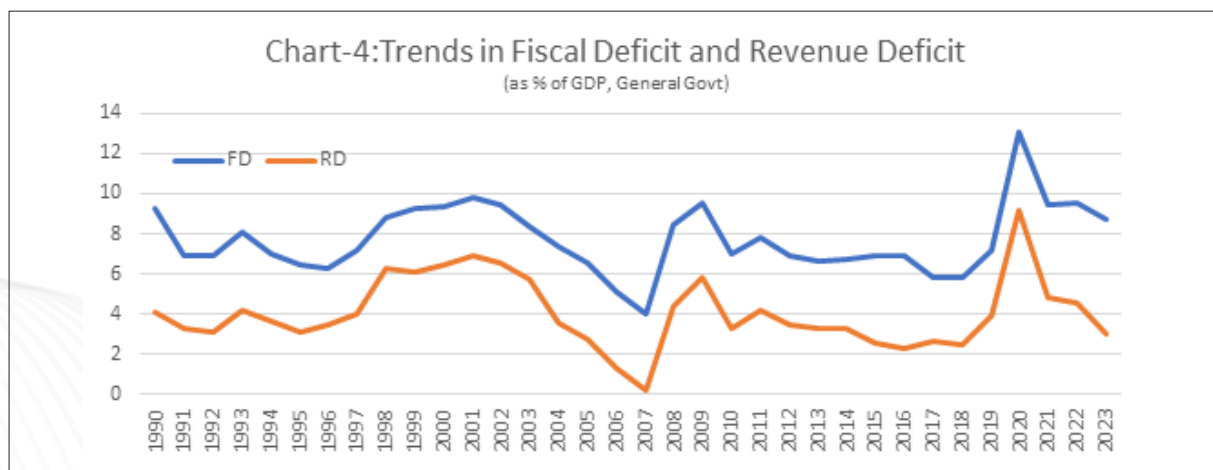


and especially in the general government savings, could increase the investment rate as well as potential growth in the economy.

The recent decline in savings rate could also due to some of the measures that must have discouraged savings. Discontinuation of tax-savings schemes, bonds by the public sector, and some measures on the Provident Fund accumulation could be some factors that must have discouraged household savings. In addition, adverse impact of Covid-19 appears to be still showing up on the overall savings. It may be noted from Chart-3 that public sector savings has seen a sharpest decline during Covid-19 period when it registered a dissaving at -4.1 per cent, lowest in the post-independence period. Macro policies that encourage domestic savings while limiting dependency on foreign savings, i.e., not above 2 per cent CAD, is one clear way to ensure stable and higher GDP growth going forward.

APPROPRIATE MACRO-FISCAL FRAMEWORK

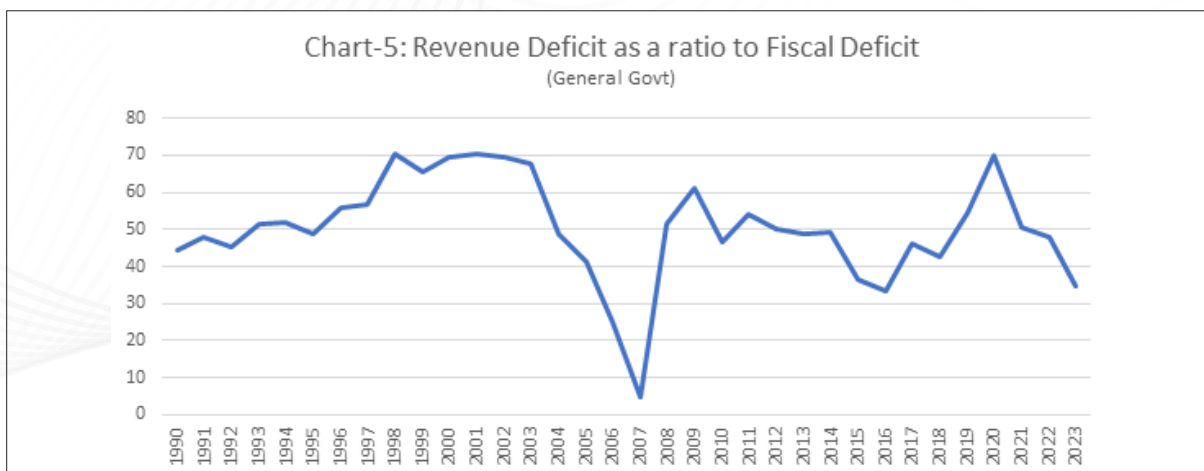
In 2003, India adopted a rule based fiscal policy, i.e., Fiscal Responsibility and Budget Management Act, initially at the Union Government level and later at all the states. As per the act, it is mandated that governments (both Union and States) should bring down their fiscal deficit to 3 per cent and revenue deficit to zero by 2008. The basic principle being any additional borrowing by the government should be channeled towards public investments (government capital expenditure) and there should not be any borrowing for consumption purpose. Under this rule, the public debt (as a ratio to GDP) is also expected to come down. It may be noted in Chart-4, India did manage to bring down the revenue deficit closer to zero by 2007-08 with fiscal deficit at 4 per cent (at General Government level). If one corresponds this trend with the trends in domestic savings and investments in Chart-2, it is clear that investments in India has peaked when revenue deficit is brought down to zero in 2007-08 and this is also the stage during which India achieved historically high GDP growth.



Another way of looking at these trends is by looking at the revenue deficit as a ratio to fiscal deficit (see Chart-5). This ratio suggests the overall quality of expenditures with ratio being closer to zero is expected to be better. It may be noted that this ratio also suggests that there is a sharp fiscal consolidation between 2003 and 2007 that led to increase in savings/investments as well as GDP growth. However, following the global financial crisis, the fiscal rule has been deviated due to introduction of large fiscal stimulus. And since then, India could not revert back to the original targets. Rather, the goals were only pushed forward and finally in 2018 the original FRBM act has been amended by excluding the revenue deficit target while retaining the fiscal deficit target of 3 per cent with public debt target fixed at 60 per cent (40 per cent Union and 20 per cent States). Even these targets were further diluted due to Covid-19. Currently the focus appears to have shifted towards targeting just



the public debt. The Union Budget 2025-26 suggest a single target of bringing down the public debt from the current level of 57 per cent to 50+/-1 per cent in the case of Union Government.



At this juncture it is important to understand the essence of FRBM Act. Going by the debate surrounding the topic suggest that FRBM act is largely misunderstood. Hence, any adherence to the deficit targets is construed as expenditure compression. But the fact is FRBM act is an expenditure switching mechanism and not a compression mechanism. The whole framework focuses on shifting revenue expenditure towards capital expenditure without affecting overall demand in the economy. But why this mechanism is important from macro-fiscal perspective that also ensure lower public debt? Intrinsically, it is the return to these expenditures that leads to macro-fiscal consistency. Our own study suggest that fiscal multipliers for capital expenditure is over 2 while for revenue expenditure is less than one³⁸. While these estimates are estimated when economy was in stable conditions and could differ over the business cycle, the differences in the size of multipliers for revenue and capital expenditures would still remain and some time it may be large.

Going by the past trends, it is urged that reverting back to original FRBM Act with targets on deficits and debts could result in macro-fiscal consistency. And it is also important to remember that even if we have to target only the public debt, as suggested by the Union Budget 2025-26, we still have to work-out the deficit targets consistent with the debt-GDP growth targets. Better way is to move from targeting deficits to debt-growth than other way round. Public debt would still remain as a key anchor in fiscal policy, but deficits, especially the revenue deficit, should be the primary instrument to reduce the debt-to-GDP ratio³⁹. A recent study⁴⁰ also shows that in India, reducing interest payments (which is part of revenue expenditure) from the present level of 30 per cent to 22 per cent of total revenues could bring the debt-to-GDP ratio down to 68-70 per cent. Hence, theoretically as well as based on empirics, it would be wise to revert to the original FRBM act of 2003 and bring back the deficits, especially revenue deficit, as a main instrument to anchor public debt in the medium term.

³⁸ See Bose & Bhanumurthy (2013)

³⁹ See Mundle et al (2011)

⁴⁰ Ando et al (2025)



PRIORITISING GOVERNMENT EXPENDITURES TO IMPROVE PRODUCTIVITY

As Dragi report⁴¹ pointed out, the area that India needs to focus most is on innovation. Innovation is a public good and, hence, it needs more public investments. While India has been increasing its allocation towards innovation, it needs lot more investments to match the levels set by advanced countries and even compared to China. This will also lead to increase in Total Factor Productivity (TFP) growth. Here, it is suggested that NITI Aayog to undertake a holistic approach in terms assessing the required improvements in TFP to achieve long term goal of Viksit Bharat. It is also important to assess what drives the improvement in TFP and policies required thereof. One low hanging fruit is ensuring land records across all states and this itself could improve TFP in a big way. Like states are incentivised for forestation under Finance Commission's divisible formula, one could also include land records as one criteria. Currently the ICOR (Incremental Capital Output Ratio) is estimated at about 5, while historically it was at 4 (atleast until the 12th Plan period for which official data is available). NITI Aayog could relook at these estimates and see what led to this deterioration from 4 to 5 and how the economy could improve its ICOR going forward. This will help release some fiscal space for the governments.

Another area that Dragi report focusses on is decarbonisation. Here it is important for India to have a clear sequencing between decarbonisation and human development rather than just following Dragi report, which sees decarbonisation in emerging market economies as an opportunity to EU region. With significant development gaps, compared to SDG goals, India's priority should be more towards bridging the development gaps while shifting the focus on decarbonisation at a later stage. This will lead to improvements in long term productivity growth and reduce demand for foreign savings to meet growth objectives.

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⁴¹ Maria Dragi (2024): The Future of European Competitiveness, September



APPENDIX



A1 Conference Outline

Third Biennial Conference on Development by Indira Gandhi Institute of Development Research (IGIDR)

Day 1: Inaugural Session

Date: 16th December 2024

Venue: Auditorium, IGIDR Campus

Time	Detail
5:00 – 5:05 PM	Welcome of delegates by Rajeswari Sengupta
5:05 – 5:20 PM	Lamp lighting and Felicitation of delegates
5:20 – 5:30 PM	Welcome Address by: Dr. Basanta Pradhan (IGIDR)
5:30 – 5:40 PM	Address by: Prof. Donald Hanna (University of California, Berkeley)
5:40 – 6:20 PM	Context setting by: Prof. Barry Eichengreen (University of California, Berkeley)
6:20 – 6:30 PM	Address by: Shri Suman K Bery (NITI Aayog)
6:30 – 7:30 PM	Keynote session by: Prof. Rohini Pandey (Yale University)
8:00 PM onwards	Dinner hosted by IGIDR (on campus)

Day 2: International Workshop on India's multiple transitions: Financing a big Investment Push

Date: 17th December 2024

Venue: Seanza Hall, IGIDR Campus

Time	Moderator/ Host	Session Chair	Lead Speaker	Other Speakers
9:00 – 9:30 AM		Networking & Registration (Outside Library, IGIDR Campus)		
9:30 – 9:40 AM		Welcome remarks by: Shri Suman K Bery and Prof. Donald Hanna		
9:40 – 10:00 AM	Shri Suman K Bery	Key Note remarks by: Dr. V Anantha Nageswaran		
10:00 – 11:30 AM	Shri Suman K Bery Prof. Donald Hanna	Session 1: Macroeconomic Management and India's multiple transitions		
		Prof. Basanta Pradhan	Dr. Alicia Garcia-Herrero	Dr. Niranjana Rajadhyaksha Shri Santanu Sengupta Dr. GV Nadhanael
11:30 – 11:50 AM	Tea Break (Outside Seanza Hall)			



11:50 - 1:20 PM	Shri Suman K Bery Prof. Donald Hanna	Session 2: Liberalizing Capital movements		
		Dr. Anoop Singh	Prof. Richard Portes	Dr. Ashima Goyal Dr. Samiran Chakraborty Dr. Pravakar Sahoo
1:20 - 1:30 PM	Group Photograph (Red Square, IGIDR Campus)			
1:30 - 2:30 PM	Buffet Lunch (Cafeteria, IGIDR Campus)			
2:30 - 4:00 PM	Shri Suman K Bery Prof. Donald Hanna	Session 3: A modern financial architecture for a fast-growing economy		
		Shri Ashwani Bhatia	Prof. Rajnish Mehra	Shri Neelkanth Mishra Dr. Rajeswari Sengupta Shri Sidharth Sanyal
4:00 - 4:20 PM	Tea Break (Outside Seanza Hall)			
4:20 - 5:50 PM	Shri Suman K Bery Prof. Donald Hanna	Session 4: Fiscal dimensions of a big Investment push		
		Dr. Arvind Virmani	Prof. Hélène Rey	Dr. Laveesh Bhandari Dr. N. R. Bhanumurthy Dr. Sajjid Chinoy
5:50 - 6:00 PM	Concluding Remarks by: Shri Suman K Bery, Prof. Donald Hanna and Dr. Basanta Pradhan (Seanza Hall)			
6:00 - 6:45 PM	Press Conference by: Shri Suman K Bery, Prof. Donald Hanna and Dr. Basanta Pradhan (Seminar Room 1)			
6:00 - 6:45 PM	High Tea (Cafeteria, IGIDR Campus)			
6:45 - 7:30 PM	Transfer from IGIDR Campus to Westin Hotel, Goregaon			
7:30 PM Onwards	Dinner hosted by NITI Aayog (Westin, Goregaon)			



A2. About the Organizers

NITI AAYOG

NITI Aayog, India's premier policy think tank, drives transformative economic, social, and environmental reforms. It fosters cooperative federalism, provides strategic policy inputs, and evaluates government programs. Established in 2015, it replaced the Planning Commission to enable evidence-based policymaking and innovation for sustainable, inclusive national development.

Learn more at: www.niti.gov.in

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A3. Acknowledgements

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- Dr. Donald Hanna, Professor, University of California, Berkeley
- Dr. Barry Eichengreen, Professor, University of California, Berkeley
- Dr. Basanta Pradhan, Director, IGIDR

SPEAKERS

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- Dr. Richard Portes, London Business School
- Dr. Hélène Rey, London Business School
- Dr. Alicia Garcia-Herrero, NATIXIS
- Dr. Rajnish Mehra, Arizona State University
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- Dr. Shilpa Ahuja, NITI Aayog
- Dr. Darpajit Sengupta, NITI Aayog



A4. About the Speakers

Alicia García Herrero is the Chief Economist for Asia Pacific at Natixis and a Senior Fellow at Bruegel, a prominent European think tank. She is also a non-resident fellow at the East Asian Institute, NUS, and an adjunct professor at Hong Kong University of Science and Technology. With deep expertise in global capital flows, emerging market economics, and central banking, she regularly advises international institutions and contributes to global financial and policy debates through research and media commentary.



Anoop Singh is a Distinguished Fellow at NITI Aayog and the Centre for Social and Economic Progress (CSEP), New Delhi. He was a Member of India's 15th Finance Commission and has held senior roles at the IMF, including Director of the Asia and Pacific Department. He has also worked with JP Morgan, Georgetown University, and the RBI. Educated at Bombay, Cambridge, and LSE, his recent work focuses on global economic shifts, including his 2022 publication *Asia and the Changing Global Economy*.

Arvind Virmani is an Indian Economist and full time Member of NITI Aayog. He was appointed India's representative to the International Monetary Fund in 2009. Prior to that, he was the Chief Economic Advisor to the Government of India. MA and PhD in economics from Harvard University under the supervision of Kenneth Arrow in 1975.



Ashima Goyal is a Professor of Economics at Indira Gandhi Institute of Development Research (IGIDR) and a distinguished economist widely published in institutional and open economy macroeconomics, international finance, and governance, with over 100 articles and several books, including *Macroeconomics and Markets in Developing and Emerging Economies* (Routledge, 2017) and *A Concise Handbook of the Indian Economy* (OUP, 2019). Editor of the Routledge journal *Macroeconomics and Finance in Emerging Market Economies*, she has advised global institutions like ADB, UNDP, and RBI. A member of India's Monetary Policy Committee, she has received numerous awards, including Business Today's "Most Powerful Women in Business" (2021–2023) and the SKOCH Challenger Award for Economic Policy (2017).



Ashwani Bhatia is a Whole Time Member of the Securities and Exchange Board of India (SEBI) since June 1, 2022. At SEBI, he oversees departments including Debt and Hybrid Securities, Corporate Finance, Investigations, General Services, and Regional Offices. Prior to SEBI, he served as Managing Director at the State Bank of India and earlier as MD & CEO of SBI Funds Management. With over 35 years of experience, he brings deep expertise in treasury, retail banking, credit, and asset management



Barry Eichengreen is the George C. Pardee & Helen N. Pardee Chair and Distinguished Professor of Economics and Political Science at UC Berkeley, where he has taught since 1987. A fellow of the American Academy of Arts and Sciences, he has served as Senior Policy Advisor at the IMF and is a Research Associate at the NBER. Eichengreen is known for his influential books on global currencies, populism, and economic crises, and he writes regularly for Project Syndicate.

Basanta Pradhan is the Director, Indira Gandhi Institute of Development Research (IGIDR), Mumbai (India). His research interests include Macroeconomics, Development Economics, Climate Change Economics, Social and Human Capital, CGE Modelling.



Donal P. Hanna is a Ph.D. in Economics from Harvard University and BA in Economics & Spanish from UC Berkeley (summa cum laude), is a Lecturer at the Haas School of Business, UC Berkeley. A seasoned macroeconomic and market analyst, he has advised financial institutions, corporations, and investors on developments in advanced and emerging markets, especially in Asia. His expertise includes financial market development, crises, and country risk. He teaches Macroeconomics for Business Decisions and serves on the Advisory Board of Australia's Center for Applied Macroeconomic Analysis.



Gaurav Mukherjee is a Senior Manager, Economics Research, Bandhan Bank. His research interests include macroeconomics and banking.



GV Nadhanael is Director of Economic and Policy Research at the Reserve Bank of India, where he leads analytical work on India's macroeconomic outlook, fiscal dynamics, and structural reforms. He has been instrumental in developing the RBI's research agenda on investment cycles, productivity trends, and policy transmission. His recent work explores how capital formation can be aligned with India's demographic and climate transitions. His expertise lies in aligning capital expenditure with macroeconomic priorities and institutional reforms. As a policy thought leader, he actively engages in national dialogues on development finance and sustainable economic growth.

Hélène Rey is a French Economist who serves as Professor at London Business School (LBS). Her work focuses on international trade, financial imbalances, financial crisis and the international monetary system. Rey is credited with ground-breaking research into the structure of international payments and capital flows. By examining the balance sheets of creditor and debtor nations, she offered new insights into relative returns on cross-border investments.



Laveesh Bhandari is the President and Senior Fellow, Centre for Social and Economic Progress (CSEP), Delhi (India). An economist and entrepreneur, he holds a PhD in economics from Boston University, where his thesis earned the Best Thesis in International Economics award. He has taught at Boston University and IIT Delhi. Dr. Bhandari founded Indicus Analytics and has led multiple ventures in research and analytics. He has been on the board of several committees spanning from overseeing financial devolution with Ministry of Panchayati Raj to academic research with the RBI. His current work focuses on inclusion, India's energy transition, and sustainable development



N.R. Bhanumurthy is the Vice-Chancellor of Dr. B.R. Ambedkar School of Economics University, Bengaluru. He holds a Ph.D. in Economics from the Institute for Social and Economic Change, Bangalore. With extensive experience in macroeconomics, fiscal policy, and development economics, he has served in various academic and policy-making roles, including positions at the National Institute of Public Finance and Policy and the Institute of Economic Growth. His research focuses on macroeconomic modeling and public finance



Neelkanth Mishra is the Chief Economist at Axis Bank and Head of Global Research at Axis Capital. With a distinguished background in market strategy, macroeconomic policy, and financial research, he has contributed extensively to shaping India's economic discourse. His analyses on capital flows, fiscal policy, and sectoral shifts are widely followed by investors, policymakers, and academics both in India and globally.

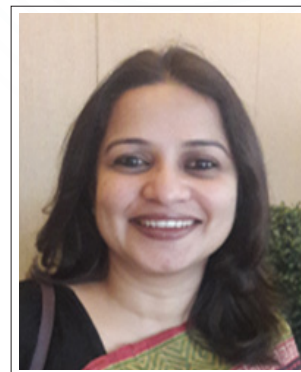
Niranjan Rajadhyaksha As the Executive Director of Artha Global, he leads research initiatives in macroeconomics, political economy, and economic history. Previously, he served as Research Director and Senior Fellow at IDFC Institute and was Executive Editor at Mint, where he penned the award-winning "Cafe Economics" column. An alumnus of Mumbai University, he holds a PhD in economics. He has received the Ramnath Goenka Award for Excellence in Journalism and the B.R. Shenoy Award for Economics. He is also a member of several academic advisory boards



Dr. Pravakar Sahoo is a Professor of Economics at Institute of Economic Growth. He is also the Senior Lead for Economics and Finance at NITI Aayog. With over 20 years of experience in teaching and research, his expertise covers macroeconomics, international trade, investment, infrastructure, and development economics. He has worked with prestigious institutions including ICRIER (India), Bruegel (Belgium), East West Center (USA), ADBI (Japan), and the University of Antwerp (Belgium). He has extensive international exposure, consulting for organizations across India, South Asia, China, Japan, Korea, Europe, and the US. He also trains Indian Economic Service probationers in macroeconomics and international economics



Rajeswari Sengupta is an Associate Professor of Economics at the Indira Gandhi Institute of Development Research (IGIDR), Mumbai. Her research focuses on policy-relevant issues in emerging economies, particularly India, in areas such as macroeconomics, monetary policy, and international finance. She has held research roles at IFMR, the IMF, World Bank, and RBI, and contributed to drafting India's Insolvency and Bankruptcy Code (2016). Dr. Sengupta holds a Ph.D. in Economics from UC Santa Cruz and earlier degrees from Presidency College and Delhi School of Economics



Rajnish Mehra holds the E.N. Basha Arizona Heritage Endowed Chair in Finance and Economics at Arizona State University and is a Research Associate of the NBER. His research spans capital markets, asset pricing, and growth theory. He has published in top economics journals and his work has been featured in *The Economist*, *Financial Times*, and *Business Week*. He has received the Graham and Dodd Scroll for excellence in financial writing.

Richard Portes Professor of Economics at London Business School. He is the founder of the Centre for Economic Policy Research (CEPR) and the co-founder of Economic Policy. A Rhodes Scholar, he studied at Yale and Oxford, and has held academic positions at Harvard, Princeton, and Columbia. His research spans international finance, sovereign debt, and European integration. He chairs key committees at the European Systemic Risk Board. His research spans sovereign debt, European finance, and macroprudential regulation. He was awarded the CBE in 2003 and holds three honorary doctorates



Samiran Chakraborty is Managing Director and Chief India Economist at Citigroup. Prior to Citi, he led South Asia Macro Research at Standard Chartered and served as Chief Economist at ICICI Bank. With deep expertise in Indian macroeconomic fundamentals and financial markets, he regularly features on CNBC, Bloomberg, and BBC, and contributes to leading publications. He is a member of CII and FICCI's Economic Affairs Sub-Committee and CNBC's Citizen's Monetary Policy Committee, providing insights on economic policy and financial market developments.



Santanu Sengupta is the Chief India Economist at Goldman Sachs, leading macroeconomic research on India's growth, policy shifts, and structural trends. His work spans fiscal and monetary policy, inflation, capital flows, and labor dynamics. Before joining Goldman Sachs in 2021, he headed Treasury Economics at Reliance Industries. His research highlights India's demographic dividend, productivity gains, and investment-driven growth, projecting the country's potential to become the world's second-largest economy by 2075 through structural reforms and financial deepening.



Siddhartha Sanyal is the Chief Economist and Head of Research, Bandhan Bank, Mumbai (India). Mr. Sanyal leads the Bank's research efforts covering areas such as macroeconomic trends, financial inclusion, public policy and financial markets and is responsible for the Bank's business strategy. He comes with over 21 years of work experience including with the RBI as an Economist, Edelweiss Capital as Senior Economist and Barclays Bank as Director & Chief India Economist. He has been a ranked India economist in multiple occasions as per reputed international surveys.

Sudharsan Bhattacharjee is the Vice President, Research, Bandhan Bank. He is an economist with nearly 15 years of professional experience cutting across different domains such as banking, sovereign and international public finance ratings, fund/investment management, metals & mining, regulator, think tank with specialization in macro-finance, monetary policy, financial laws, etc. He published several research papers in peer reviewed journals and delivered talks in different forums. Views expressed here are the personal views of the author and do not necessarily reflect the views of his present or past employers



V. Anantha Nageswaran is the Chief Economic Advisor to the Government of India. He has co-authored four books, including *The Rise of Finance* and *Can India Grow? A former columnist for Mint*, he has taught at institutions in India and Singapore and was a Distinguished Visiting Professor at Krea University. With a corporate career spanning UBS, Credit Suisse, and Julius Baer, he holds a Ph.D. in economics from the University of Massachusetts, Amherst, and a PGDM from IIM Ahmedabad.

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