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Productivity and policies in post-independence India: From planning to liberalisation

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Date:
December 2025

Pro-Productivity Policies: Country Experiences Series

The Productivity Institute
Productivity Insights Paper No. 071

Key words
Pro-productivity, policy, policies, productivity growth, structural change, liberalisation, India

JEL codes
O47, O53, E65, L52, F13

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Acknowledgements
This work was supported by the Productivity Institute International Productivity Fellowship, for which the author is grateful. The author is thankful to Kyoji Fukao, Bart van Ark and Dirk Pilat for their comments, and greatly acknowledges the excellent research support from Peter Bosch and Matteo Boratti in reviewing the various policy documents. The paper has also benefited from the author's long association with the India KLEMS project and, in particular, from the insights of K.L. Krishna and B.N. Goldar on various policy aspects, which are gratefully acknowledged. The usual disclaimers apply.

Suggested citation

A. Erumban (2025) *Productivity and policies in post-independence India: From planning to liberalisation*. Productivity Insights Paper No. 071, The Productivity Institute.

The Productivity Institute is an organisation that works across academia, business and policy to better understand, measure and enable productivity across the UK. It is funded by the Economic and Social Research Council (grant number ES/V002740/1).

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Abstract

This paper provides a historical overview of productivity trends and pro- (and anti-) productivity policies in post-independence India. It examines the various phases of India's economic policies, from the early adoption of socialism and the restrictive “licence raj” system, through the pro-business reforms of the 1980s and the pro-market liberalisation of the 1990s, to more recent initiatives in infrastructure development, and digital inclusion. The paper traces the evolution of labour productivity, total factor productivity, and structural changes during these policy phases. It highlights the productivity challenges in the early phases, with a gradual improvement following the liberalisation in the 1990s. While the structural change, featuring a shift away from agriculture to services, was generally growth-enhancing in the post-reform periods, the paper notes an uneven pattern of productivity growth. Limited industrialisation, the persistence of a large informal sector, and continuing human capital constraints remain key challenges for productivity-enhancing policies. The paper suggests the need for coordinated sectoral and macro-level reforms to achieve broader productivity gains, leveraging the potential of both the services and manufacturing sectors in future policies. It also acknowledges the role of disruptive yet transformative artificial intelligence and rising climate risks in shaping India’s productivity path, requiring proactive investment in human capital, technological readiness, and climate-resilient development.

1. Introduction

Productivity growth is key to achieving long-term economic development and rising living standards (Baumol, 1986; Krugman, 1994; Rodrik, 2013). Aggregate productivity improvements, especially in developing economies, not only result from gains within individual firms and industries, but also through structural change — i.e., the movement of resources from low- to high-productivity sectors (Lewis, 1954; McMillan, Rodrik & Verduzco-Gallo, 2014). India's productivity story since independence reflects a complex interplay of these two channels. Productivity has played a complex and evolving role throughout different phases of India's post-independence growth trajectory—from state-led industrialisation and agricultural modernisation to liberalisation and, more recently, digital and structural reforms.

While India experienced impressive GDP growth since the economic liberalisation of the 1990s, its structural transformation features a shift from agriculture to services along with persistence of a large low-productivity informal sector and weak manufacturing employment (Eichengreen & Gupta, 2011; Erumban et al., 2019).[1] This presents a stark contrast to the growth experience of neighbouring China, which, despite starting at a similar level of development in the early 1990s, achieved much faster growth, primarily driven by manufacturing expansion (Bosworth & Collins, 2008). Moreover, India's productivity improvements have been uneven, and the structural shift away from agriculture has primarily led to informal urban employment or low-value services (Fan et al., 2023). The recent labour data further suggests a reversal of structural transformation, with increasing labour reallocation back to agriculture (Krishna et al., 2022).

It is important, however, to recognise that various policy initiatives undertaken by governments since independence and institutional changes have played a decisive—if ambivalent—role in shaping productivity and structural change outcomes.[2] From the early embrace of socialism and five-year planning (Parekh, 1991) to the restrictive "licence raj" (Bhagwati & Desai, 1970), early policies prioritised self-sufficiency and state control, often at the expense of competition, innovation, and efficiency. By the mid-1980s, India began implementing limited pro-business reforms, which, while criticised for not only favouring incumbents but also being insufficiently supportive of businesses, marked a departure from

[1] The decline in agriculture and low industrialisation in developing countries is not unique to India (Fan et al., 2023), nor is India's service dominance unique to recent years (Das et al., 2019).

[2] Much has been written about the productivity dynamics of the Indian economy in the context of various policies, albeit with an increased focus on organised manufacturing (Ahluwalia, 1986, 1991; Goldar, 1983, 1986; Balakrishnan and Pushpangadan, 1994; Bosworth and Collins, 2008; Das et al., 2016; Krishna et al., 2022). The onset of the Reserve Bank of India's KLEMS database (Das et al., 2021) has expanded the scope of research to encompass broader industry and sectoral analyses (Krishna et al., 2022).

strict state dominance (Rodrik & Subramanian, 2005; Balakrishnan, 2010). The major shift in the policy attitude came in 1991, when a severe balance-of-payments crisis triggered sweeping liberalisation—reduced tariffs, deregulation, and a favourable attitude towards foreign investment.

As of 2023, India's per capita income remains less than half of China's, which itself is still far from advanced economy benchmarks. Yet, under the "Viksit Bharat @2047" initiative, India aspires to attain developed economy status by 2047, coinciding with a century of its independence (Government of India, 2023). Closing India's income gap with even the lowest-income advanced economies would require sustained per capita income growth of roughly 6.5–8% per year through 2047 – an ambitious target unlikely to be met without broad-based productivity gains across sectors. This underscores the urgency of policies targeting revitalising productivity. Over the decades, policy efforts to stimulate productivity have spanned across domains—industrial policy, trade liberalisation, infrastructure investment, and digital inclusion – which provides a unique opportunity to investigate the linkages between productivity growth and policies. Van Ark, de Vries, and Pilat's (2023) typology of productivity-enhancing policies offers a useful lens to assess India's evolving policy landscape, highlighting the need to coordinate sectoral and macro-level reforms.

This paper seeks to provide a historical account of productivity-enhancing (and constraining) policies in post-independence India, following the van Ark et al (2023) typology, and linking them to observed productivity trends. While the study does not attempt to conduct a causal analysis of policy impacts and is also not overwhelmingly comprehensive, it seeks to provide a systematic historical overview of productivity policies and productivity trends in India since 1950.[3] The paper is organised into six sections. Section 2 discusses the conceptual framework and data. In Section 3, we provide an overview of historical trends in productivity and structural change in the post-independence Indian economy. Section 4 reviews various productivity policies in India, and section 5 discuss some key productivity policy challenges. The final section concludes with guidance on future policies.

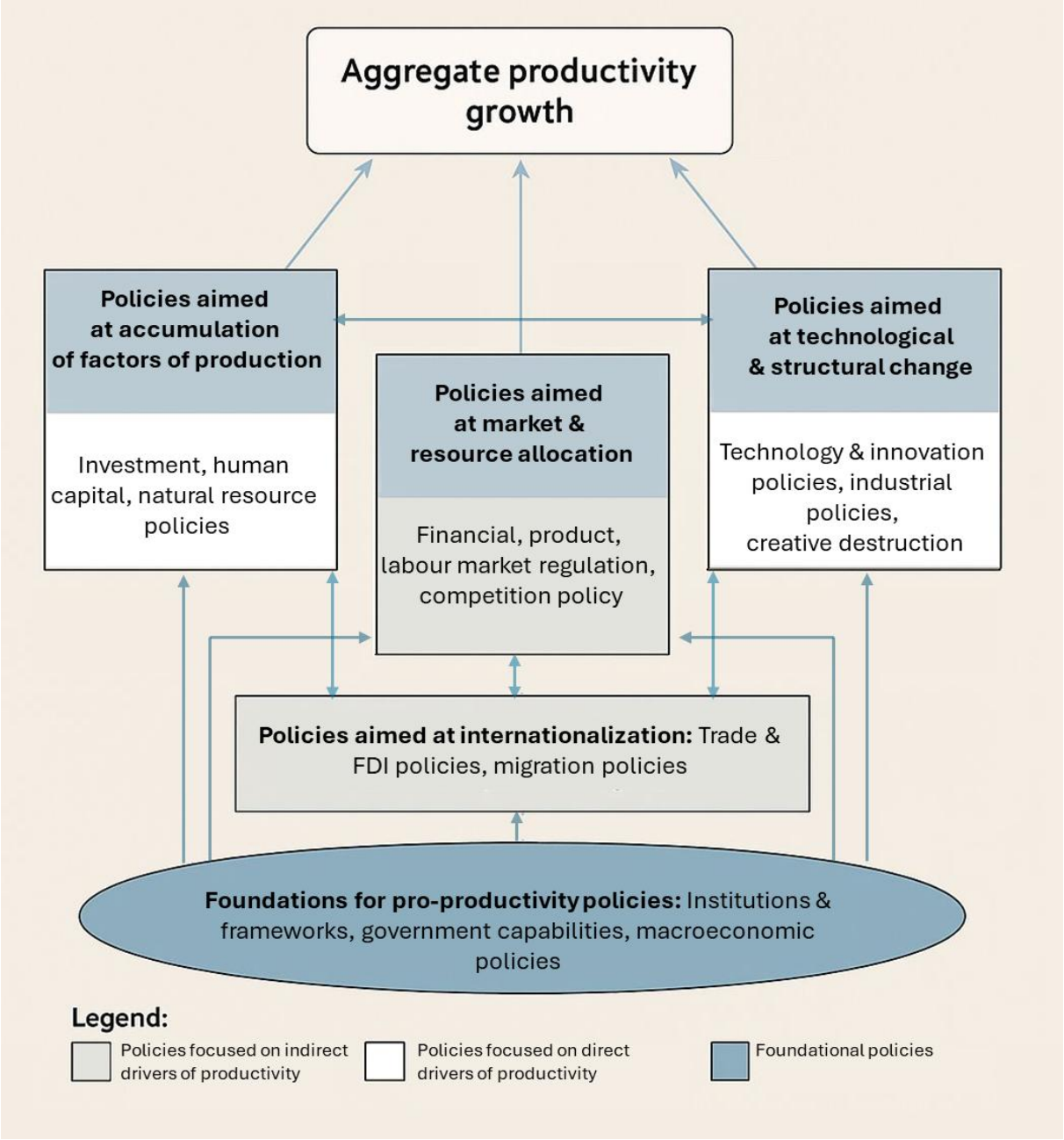
2. Conceptual framework and data

The conceptual framework used in our analysis is broadly based on the policy typologies presented in van Ark et al (2023). However, as might be the case elsewhere, India's economic policies, even those with direct bearing on productivity, are often complex, and may encompass multiple elements from this typology, making it challenging to assign a specific

[3] Note that we may overlook specific and detailed policy initiatives since our goal is to offer a broader overview of various policies.

policy to one of these categories. Figure 1 depicts the policy typologies presented in van Ark et al, (2023), which may be broadly grouped into three: 1) direct policies, aiming to boost productivity through factor accumulation, technology, or sectoral transformation; 2) indirect policies, that influence productivity by improving market and resource allocation, and internationalisation (trade and competition); and 3) foundational policies that focus on shaping institutions, regulatory frameworks and macroeconomic environment.

Figure 1: Typology of pro-productivity policies



Source: Adapted from van Ark et al. (2023)

Together, these categories provide a comprehensive framework for understanding various strategies that can influence productivity. As is obvious from the figure, there are interconnections and spillovers between these policies, which adds a further layer of complexity in attributing any policy to a particular category (for detailed discussion on these typologies see van Ark et al, 2023).

In section 4 of the paper, we will organise the discussion of various economic policies initiated in India according to this typology. We will examine these policies during four different phases: 1) pre-1980s, which covers the period immediately following independence until the early 1980s; 2) the 1980s, a time of partial liberalisation; 3) the 1990s, characterised by pro-market liberal policies; and 4) the 2000s, a period that reflected the impact and continuation of the strategies from the 1990s. India's economic policies, especially in the pre-1980s, are extensively documented, making it hard to condense it into a small section of this paper (Bhagwati and Desai, 1970; Bhagwati and Srinivasan, 1993; Joshi and Little, 1994 & 1996; Krueger, 1975; Panagariya 2008; Rodrik and Subramanian 2005; Kochhar et al. 2006; Acharya 2006). Our aim here is to provide an overview of the key insights from the existing literature. To evaluate various policies using the suggested typology, we will first review these policies using existing literature, starting from the licence raj and protectionist regimes in the early phases to recent pro-market reforms. We will assess how well the suggested typology aligns with the Indian policy context and determine whether we can classify India's policies accordingly. If not, we will explore the relevant adjustments to adapt the typology to India's policy circumstances.

To analyse the long-term productivity trends in section 3, we rely on labour productivity, defined as output per worker, and total factor productivity (TFP), obtained using the standard growth accounting approach.[4] We will use macroeconomic and broad sectoral data from the National Accounts for the period from 1950 to 1980 compiled by Das, Erumban, and Mallick (2019), along with more detailed industry-level data from the India KLEMS database since 1980 (Das et al, 2021). To analyse productivity trends, we divide India's long-term growth phases into six time periods which roughly align with the policy phases discussed in

[4] Note that standard TFP measures from growth accounting, whether based on value-added functions (as in this paper) or on gross-output functions (as in the KLEMS framework), generally treat trade frictions, market distortions, and production-network effects as part of the residual. Basu and Fernald (2002) show that a suitably modified Solow TFP residual can serve as a first-order measure of welfare changes even in the presence of distortions such as imperfect competition, implying that aggregate data can approximate welfare effects. More recently, Baqaee and Farhi (2024) model production networks and trade barriers, showing that reductions in trade costs raise measured aggregate TFP. The reductions in trade costs create amplified welfare gains through both direct consumer benefits from final goods and indirect effects via intermediate inputs. Thus, while standard TFP can provide a rough proxy for welfare, modifications to TFP and accounting for distortions are essential to refine its welfare implications. Since the objective of this paper is to evaluate pro- and anti-productivity policies, we focus on TFP primarily as a measure of productivity.

Section 4. These periods are: 1950-1979 (pre-1980s), 1981-1991 (1980s), 1992-2002 (1990s), 2003-2007 (2000s), 2008-2018 (2010s), and 2019-2022 (2020s)

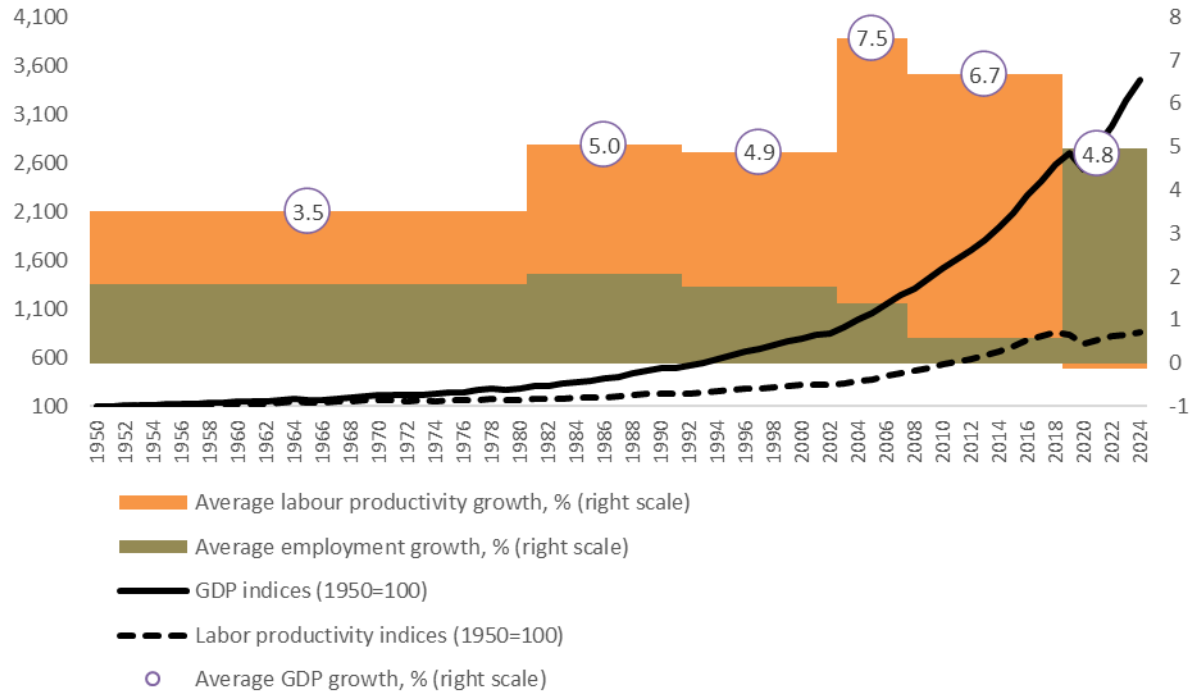
3. Productivity and structural change in India: long term trends

3.1. Growth rates of aggregate GDP, employment and labour productivity

Figure 2 depicts the evolution of India's GDP growth by breaking it down into employment and labour productivity growth rates. The solid and dashed lines represent annual indices of GDP and labour productivity, respectively, with 1950 as the base year. The orange and green segments provide the average growth rates of labour productivity and employment, respectively, for the six time periods. The circles show the sum of these two, which are the average GDP growth rates.

India's GDP increased by about 40 times, and labour productivity nearly ninefold over the 75 years following independence. This growth has experienced phases of slow expansion during the first three decades after independence (combined into one single period in the figure) - often coined as the 'Hindu growth rate' of 3.5 percent (Raj, 1984). During this inward-looking policy regime, characterised by protectionism, import substitution, and state-led industrialisation, the contributions of employment and productivity to the dismal GDP growth were relatively equal. During the 1980s through the early 1990s—a period marked by pro-business reforms and partial liberalisation—GDP growth increased to 5.0 percent per year, with almost 60 percent of this growth attributed to labour productivity growth. The relative importance of labour productivity further increased to about 65 percent of GDP in the subsequent decade, while the overall GDP growth remained largely stable. The trend of increasing role of labour productivity growth continued in the 2000s, with average GDP growth surpassing 7 percent during 2002-2007. As employment growth continued to slow down, rapid productivity expansion contributed to more than 80 percent of this GDP growth. The relative role of productivity remained solid in the 2010s, although the GDP growth rate declined. The growth slowdown continued into the 2020s, but the role of the contributing factors dramatically changed largely due to the impact of the COVID-19 pandemic. While employment growth improved during the post-pandemic recovery, the decline in labour productivity growth was responsible for the entire weakening of GDP growth since 2018.

Figure 2: Long-term trends in aggregate GDP and labour productivity, 1950-2024



Notes: Both GDP and labour productivity levels are measured in PPP terms. The solid (dashed) line shows the GDP (labour productivity) index, with 1950 as the base year. Green (orange) bars represent average growth of employment (labour productivity) for the six time periods. Circled numbers are the average GDP growth rates (sum of employment and labour productivity growth rates). All growth rates are calculated as log changes.
Source: The Conference Board Total Economy Database, May 2025.

Focusing solely on productivity, the pace of productivity expansion was quite slow in the early phase — it took nearly half a century until 1997 for productivity to triple relative to its 1950 level. However, in less than the two decades that followed, labour productivity nearly tripled again — reaching almost nine times its 1950 levels by 2015—clearly indicating an acceleration in productivity growth since the 1990s. Thus, the aggregate economy picture suggests that long-run GDP and productivity growth accelerated after liberalisation, and labour productivity has become the dominant driver of GDP growth. While this overview of aggregate productivity dynamics masks many underlying factors, including industry variations and temporal changes, it highlights the differing patterns of productivity over time. Importantly, these varying periods largely coincide with significant policy changes in the Indian economy, which will be discussed in section 4.

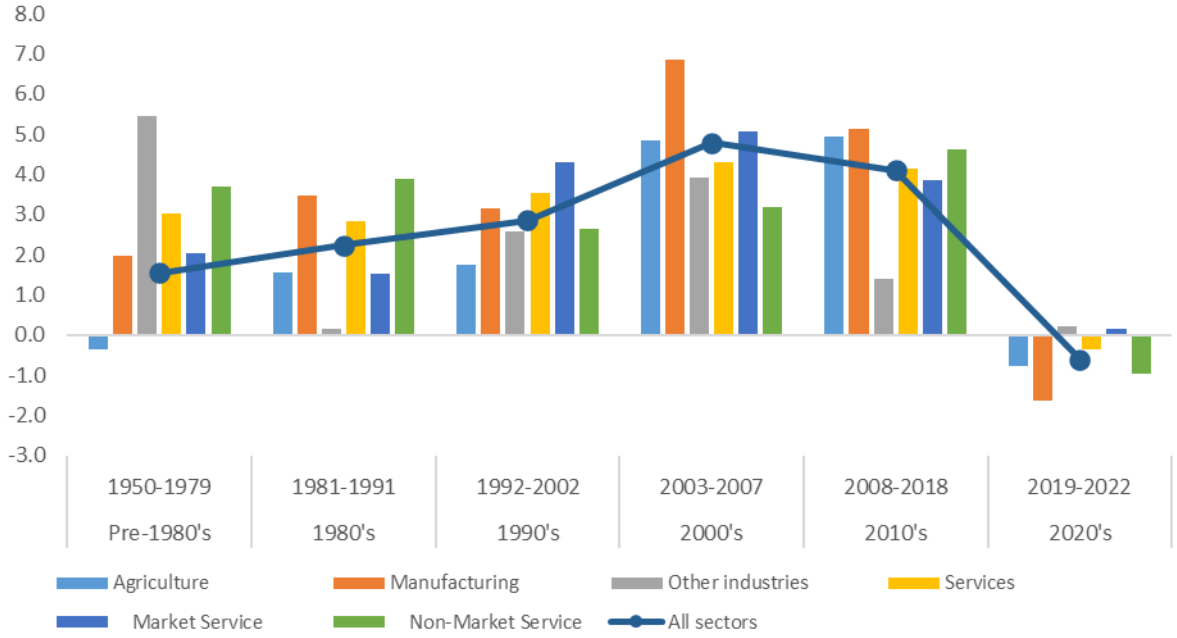
3.2. Sectoral labour productivity and structural change

Figure 3 provides the labour productivity growth rates for broad sectors of the economy since 1950. We provide estimates for four broad sectors: agriculture, manufacturing, other industries, and services. The services sector is further divided into market and non-market services. Due to limited data availability before the introduction of the India KLEMS database, the level of industry detail used for broad sector and aggregate economy aggregation are different for the periods before and after 1980. For the pre-1980 period, the data for the manufacturing sector is obtained as a single aggregate from the national accounts, and hence the growth rate is an unweighted aggregate growth. In contrast, for the post-1980 period, it consists of 13 individual manufacturing industries, and its growth rate is a value-added weighted sum of these industries. For both periods, the "other industries" group includes all non-manufacturing industries, such as mining, utilities, and construction, making the aggregate a weighted growth rate of these sub-sectors. The market services sector consists of a weighted aggregate of trade, hotels & restaurants, transport & storage, postal & communication services, financial services, and business services. The period for which KLEMS data are available includes more detailed data for these sectors compared to the pre-1980 period. In the earlier period, due to a lack of disaggregated data, real estate was also included in market services.

The figure indicates notable differences in productivity growth across sectors and over time. In the pre-1980 phase (1950-1979), agricultural productivity experienced a decline, partly due to the challenges faced by a largely agrarian economy under the pre-Green Revolution regime and limited technological advancements. Although the manufacturing and services sectors exhibited modest productivity growth, overall labour productivity growth remained low, just above 1.5 percent. This was consistent with India's import-substitution industrialisation policies, which constrained market efficiency and innovation (Ahluwalia, 1985).

During the 1980s, both the agriculture and manufacturing sectors saw improvements in productivity growth, likely linked to gradual policy liberalisation, better irrigation, and the effects of the Green Revolution (Ahluwalia, 1991; Goldar, 2004). Productivity growth in the services sector remained relatively stable, with market services lagging substantially behind the non-market services, as the public sector still dominated. During this period, approximately 70 percent of market services output and more than 90 percent of employment were concentrated in sectors dominated by informal, low-capital, and low–technology–intensive activities, such as trade, hotels, and transportation. Given the relatively low productivity of the informal sector, its dominance is likely to have contributed to sluggish productivity growth in market services.

Figure 3: Labour productivity growth by sector, 1950-2023

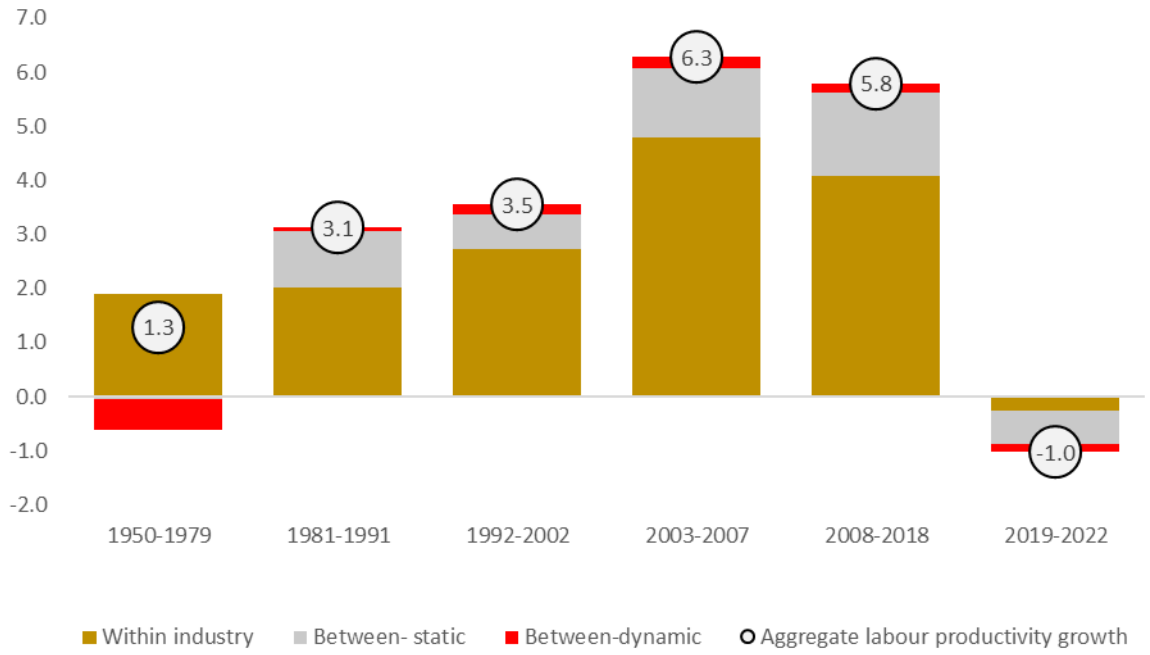


Notes: The solid line shows the aggregate economy labour productivity growth, obtained as the weighted sum across 11 individual industries for the pre-1980 period and 27 KLEMS sectors for the post-1980 period. The difference between weighted labour productivity growth (shown in the blue line) and unweighted aggregate economy labour productivity growth will provide the sectoral reallocation effect as in Stiroh (2002). The aggregate productivity growth rates reported here may differ from the total economy labour productivity growth rates in Figure 5 due to sectoral price variations, reallocation effects, and differences in the methods used to compile employment and capital services data between the India KLEMS database and the Total Economy Database. All growth rates are calculated as log changes.
Source: Author calculations using data from Das, Erumban and Mallick (2019) for 1950-1980, and India KLEMS for 1980 onwards.

From the 1990s through 2000s, while manufacturing and agriculture maintained steady productivity growth, market services productivity surged ahead of non-market services. In the years before the Global Financial Crisis (GFC), productivity rose rapidly across sectors—especially in manufacturing and market services. During the post-crisis decade, productivity growth remained solid, albeit declined in manufacturing and market services, plateaued in agriculture, and increased in non-market services. By the 2020s, productivity growth weakened across most sectors, with only market services maintaining positive growth. Thus barring the GFC, and the pandemic impact, the post-1990s seems to have seen an improving trend in labour productivity, reflecting various the reforms that eased regulations for investment, and competition in the economy.

Productivity gains in market services since the 1990s may be viewed in relation to the expansion of sectors characterised by more formal activities, such as business, financial, and telecommunications services. By the 2020s, these sectors accounted for more than half of market services GDP and approximately one-fifth of employment. The emergence of the software and IT-enabled services industry since the 1990s, alongside the growth of business and financial services—sectors with large presence of formal, skill-intensive, and export-oriented firms—has been a key driver of significant productivity improvements.

Figure 4: Shift-share decomposition of aggregate labour productivity growth



Notes: The aggregate labour productivity growth rates reported here are the compound annual growth rates of the unweighted aggregate of industry labour productivity, consistent with shift-share analysis. These numbers may differ from the total economy labour productivity growth rates in Figure 2 due to differences in the way growth rates are calculated, sectoral price variations, reallocation effects, and differences in the methods used to compile employment data between KLEMS and the Total Economy Database. The last period in the two figures is different, as the India KLEMS data is not available after 2022.
Source: Author calculations using data from Das, Erumban and Mallick (2019) for 1950-1980, and India KLEMS for 1980 onwards.

As mentioned earlier, aggregate productivity growth in developing economies like India is not only a result of within-industry productivity gains, but also due to the reallocation of resources to more productive sectors of the economy. In Figure 4, we provide the

decomposition of aggregate labour productivity growth into contributions from within industry and between industry effects, using the standard shift-share decomposition. [5]

Overall, productivity growth in the post-1990 period is driven by a combination of gains within sectors and positive sectoral reallocation effects, particularly the shift from low-productivity agriculture to other higher-productivity sectors. In the pre-1980s, when the public sector dominated production across all segments of the economy, worker reallocation had a negative impact, contributing to a depressive effect on aggregate productivity growth. There appeared to be a trend of workers moving toward sectors with low productivity levels and growth rates – both static and dynamic reallocation effects were negative. However, during the 1980s, there was a significant shift in this trend, with worker movements to sectors with higher levels and better growth rates contributed to more than one-third of the total growth in labour productivity. This may be a result of the policy changes that opened opportunities for business expansion and private participation during this period. In the following decades, the reallocation remained positive, contributing between one-fifth and one-quarter of total productivity growth. The largest magnitude of worker reallocation effects appears to have occurred in the 2000s and 2010's, benefiting from the lagged effects of substantial reforms initiated in the early and mid-1990s. Previous studies have also noted a similar positive reallocation effect in the post-1980s period (Erumban and Das, 2012).

3.3. Factor accumulation and total factor productivity

Using the standard growth accounting decomposition, we decomposed aggregate labour productivity growth into contributions from capital services (ICT and non-ICT), labour quality, and total factor productivity (Figure 5).[6]

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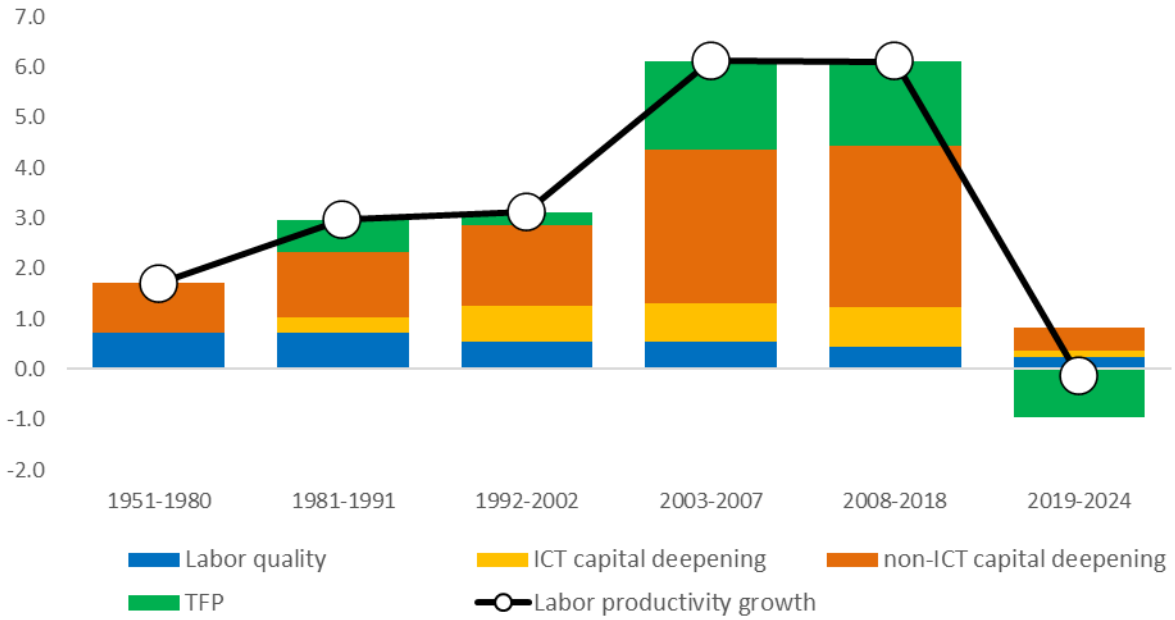
[5] The shift-share decomposition is performed using: $\frac{\Delta y_t}{y_0} = \sum s_{i,0}\left(\frac{\Delta y_{i,t}}{y_0}\right) + \sum \Delta s_{i,t}\left(\frac{y_{i,0}}{y_0}\right) + \sum \Delta s_{i,t}\left(\frac{\Delta y_{i,t}}{y_0}\right)$ (see Fabricant, 1942; de Vries et al, 2012; Erumban et al, 2019; McMillan et al, 2014). In this equation, y is the aggregate economy labour productivity, y_i is the labour productivity in industry i, and s_i is the share of industry i in total employment. The first term in the equation is the product of sectoral employment share and sectoral productivity change. It provides the contribution of productivity growth within sectors to the overall labour productivity growth of the economy. The second term, which is the product of changes in employment share and the relative levels of sectoral productivity, is a measure of static structural change. A positive value here indicates a reallocation of workers to sectors with higher productivity levels. The final term indicates dynamic worker reallocation, measured as the product of changes in employment share and changes in labour productivity. A positive value for this term suggests an expansion of jobs in sectors with relatively faster productivity growth.

[6] TFP is calculated as the residual after subtracting the contributions of factor inputs from value added growth. Specifically, $\Delta \ln TFP = \Delta \ln Y - \bar{v}_K \Delta \ln K - \overline{v_L}(\Delta \ln L + \Delta \ln LQ)$, where Y, K, L and LQ denote real value added, capital services, employment and labour quality, respectively. Subtracting growth rate of employment from both sides of the equation, we can decompose labour productivity growth into contributions from capital deepening (capital per worker) and labour quality growth rate. For the period between 1950 and 1980, K and L are measured as capital stock and employment, without accounting for asset and skill compositions. For the

Figure 5: Growth accounting decomposition of aggregate economy



Notes: TFP estimates are inclusive of sectoral reallocation effects, as it is calculated using total economy data. All growth rates are calculated as log changes.
Source: Author calculations using data from The Conference Board Total Economy Database, May 2025

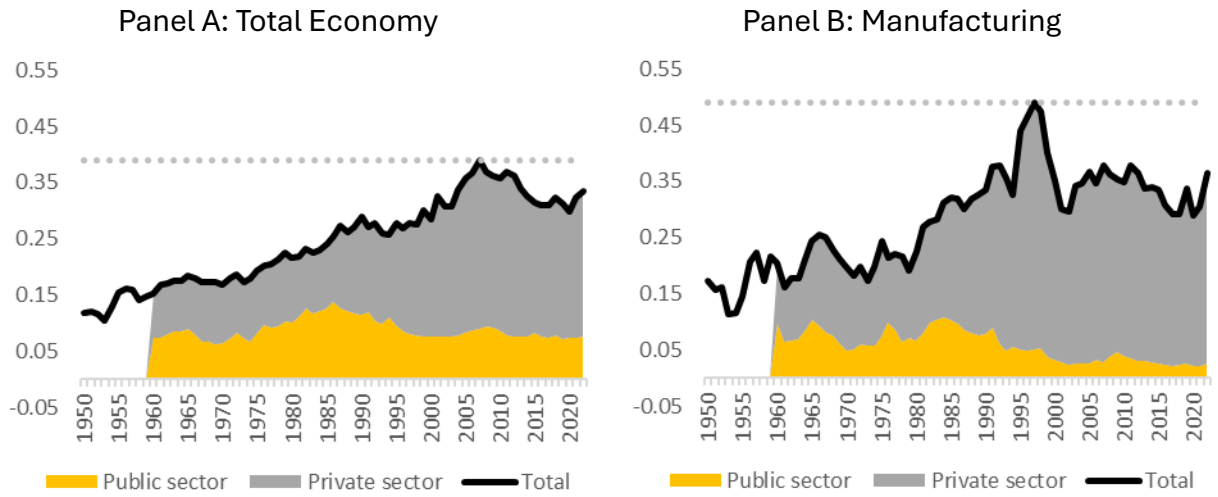
The Figure reveals a modest contribution from improvements in labour quality to labour productivity, or improvements in the educational composition of workers, throughout. Capital accumulation, particularly the non-ICT capital per worker, on the contrary, plays an important role in driving overall labour productivity growth. This was the case in relative terms throughout the last seven decades, even during the phase of slow growth, and during the phases of faster growth in the post-reform period. In absolute terms, total capital accumulation has shown more rapid expansion during the post-liberalisation decades.[7] The contribution of ICT capital, though small in the 1980s, improved in both absolute and relative terms during the 1990s. In the two subsequent periods, it remained at a broadly similar level, even as the contribution of non-ICT capital increased. Capital, particularly non-ICT capital, remained the key driver of labour productivity in the most recent period, but its contribution dropped sharply amid the pandemic

years following 1980, K is measured in terms of capital services (adjusted for asset heterogeneity) and estimates of LQ are included. For a more detailed discussion on how these variables are constructed, see Das et al, (2021).

[7] As noted earlier, labour productivity growth improved modestly in the 1990s compared to the 1980s, driven by increased contribution from capital deepening rather than an acceleration in TFP growth, although TFP growth remained positive.

The long-term evolution of investment and capital accumulation reflects a shift from a state-led to a market-oriented investment regime. The investment to GDP ratio has shown substantial structural shifts since independence, reflecting various changes in economic policy and institutional settings (Figure 6). In the pre-1980 period, investment gradually increased from around one-tenth to nearly one-fifth of GDP, primarily driven by the public sector under a state-led policy regime. The 1980s marked a transitional phase, during which the private sector's share started to overtake that of the public sector in the mid-1980s, supported by modest liberalisation and pro-business reforms.

Figure 6: Investment to GDP ratio (current prices), 1950-2022

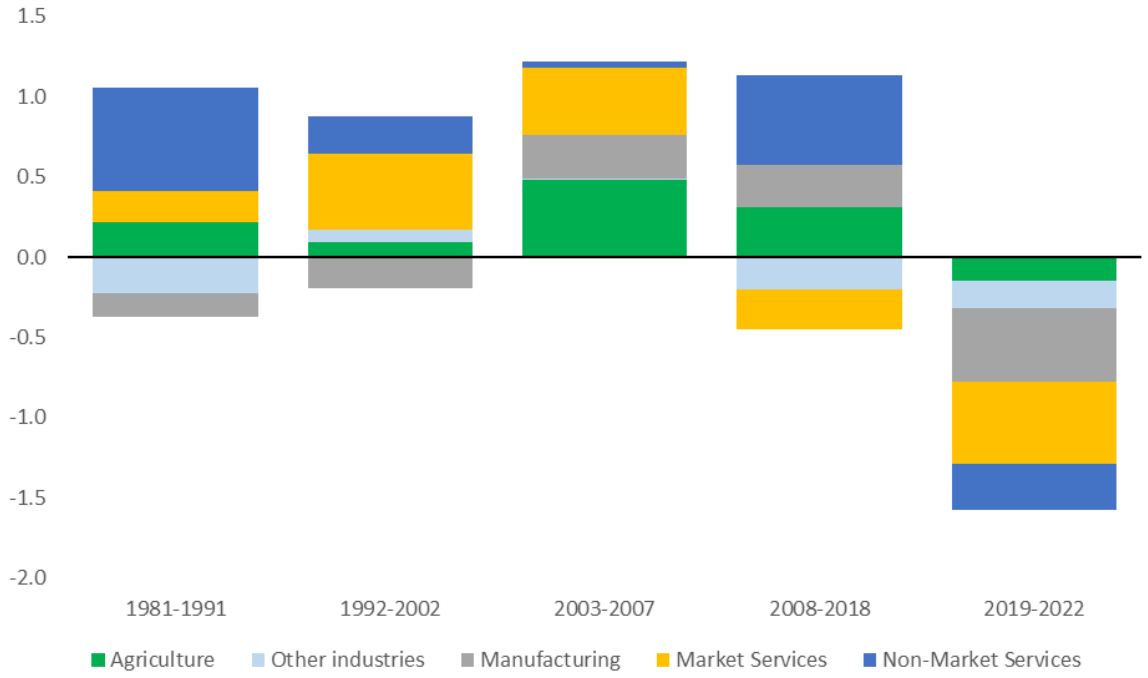


Notes: Private sector investment is obtained by subtracting GFCF in public sector enterprises from the total. The grey dotted line represents the peak investment rate.
Source: Author's calculations using National Accounts Data.

By the beginning of the 1990s, the overall investment rate had reached nearly 30 percent. The rising contribution from private investment continued into the 1990s, following the liberal reforms, even as public investment growth plateaued. From the early 2000s, investment surged to historic highs, peaking at nearly 40 percent of GDP in 2007, largely supported by private enterprises, while the relative role of the public sector somewhat declined. However, investment rates have fallen since the GFC due to a decline in private investment. Although there has been a slight recovery in recent years, investment levels remain at about the same rates as in 2001. This decline in investment rate seems to have reflected in the falling contribution of capital to labour productivity growth – in absolute terms – in the most recent decade. The greater role of the private sector over the years is especially evident in the manufacturing industry, where public investment has rapidly declined since the 1990s. However, the overall investment rate has decreased in the manufacturing sector since the 2000s.

The Figure also reveals a nearly absent TFP growth (TFPG), obtained as a residual from the standard growth accounting exercise, before the 1980s. However, despite a transient decline during the transitional 1990s, TFP remained a key driver of growth in the post-1980 period, until it decelerated substantially during the pandemic in the 2020s. These trends align with findings from Bosworth & Collins (2008) and Das et al (2016), which reported an increase in TFP during early 2000s. In particular, the TFP acceleration was more prominent in the 2003-2007 period, often considered the golden period of growth in India (Mohan & Kapur, 2015).[8] The more recent decline in TFP growth is driven by massive declines during the pandemic years, 2019 and 2020 – a similar decline is not seen in studies that looked at the period until 2018 (see Krishna et al, 2022). Moreover, on an annual basis, the post-pandemic recovery was considerable and has shown resilience since then.[9]

Figure 7: Industry contributions to aggregate TFPG



Notes: Industry contributions are obtained as the value-added weighted sum of TFP growth in individual industries. The industry-weighted aggregate TFP growth rates reported here may differ from the total economy TFP growth rates in Figure 5 due to sectoral price variations, reallocation effects, and differences in the methods used to compile employment and capital services data between KLEMS and the Total Economy Database. The last period in the two figures is different, as the KLEMS data is not available after 2022.
Source: Author's calculations using data from India KLEMS.

[8] Mohan and Kapur (2015) also describe the period from 1965 to 1981 as 'the darkest chapter in the post-independence economic history of India,' attributing this to the restrictive regime.
[9] The Conference Board Total Economy Database shows an average TFP growth of over 3 percent during 2021–2024, starting from nearly 6 percent in the 2021 recovery year after the 2020 slump, and gradually declining to 1 percent by 2024.

The observed aggregate TFP growth is decomposed into industry contributions in Figure 7. These are calculated as the sum of value added-weighted industry TFP growth and it therefore does not account for sectoral reallocation effects. We note three points. First, TFP growth revival in the 1980s was driven primarily by non-market services and agriculture, while the industrial sector – manufacturing and non-manufacturing – was decelerating. Second, the manufacturing sector continued to have negative TFP growth in the 1990s (also see Krishna et al. 2022), whereas the service sector TFP acceleration shifted towards market services. And third, market services remained the main driver of fluctuations in TFPG in the post-2000s.

During 2003-2007, all broad sectors of the economy registered positive TFPG, with agriculture, manufacturing and market services contributing substantially. While aggregate productivity eased in the post crisis decade, this fall was driven by deceleration in market services, and other industries, whereas the manufacturing sector retained resilience, along with improvement in the non-market services. Clearly, the productivity growth appears to be consistently better in the manufacturing sector in the post 2003 period, until 2018. The post 2018 period, that included the covid pandemic period, registered a productivity deceleration across the board, with most of the aggregate decline being driven by market services and manufacturing sectors. A closer examination of the data suggests that the decline in market services was entirely driven by the trade, hotels, and transport sectors, which continue to have a large informal presence. In contrast, sectors such as telecommunications, finance, and business services continued to experience positive productivity growth. The decline in manufacturing was broad-based, with only chemicals, petroleum, and basic metals and metal products showing positive TFP growth.

4. Policy landscape over the last 70 years – pro or anti productivity?

The long-run growth experience of India underscores the central importance of productivity – labour productivity and TFP – as a driver of improvements in GDP growth, particularly since the economic liberalisation of the 1990s. While early decades were marked by slow productivity expansion under inward-looking policies, the post-reform period saw a significant acceleration. This contrast reveals that understanding the policy environment— what reforms were implemented, and how they supported productivity improvements through sectoral reallocation, capital accumulation, and total factor productivity— is

important. Equally important is identifying what hindered or slowed progress, as such understanding is essential for shaping effective future strategies for sustained and inclusive economic growth. In this section, we provide a brief review of various policies, categorising them according to the typology presented by van Ark et al. (2023).[10] We divide our analysis into four distinct phases in India's post-independence economic policy making: the pre-1980s, the 1980s, the 1990s, and the post-2010s.

4.1. Pre-1980 policies: import substitution and licence raj – not a recipe for productivity

Prior to the 1980s, India's economic policy was dominated by a strategy of import substitution industrialisation (ISI), characterised by high tariff barriers, extensive licensing requirements, and state-led industrial planning. This approach, commonly referred to as the "Licence Raj," aimed to promote self-sufficiency, development of a diversified industrial base, and protect domestic industry (Ahluwalia 2002; Joshi and Little 1994). However, the regime has been criticised for constraining growth by stifling competition and discouraging innovation (Panagariya 2008; Rodrik and Subramanian 2005). In this section we discuss the main tenants of the pre-1980s policies.

4.1.1 Factor accumulation policies

While it is difficult to pinpoint specific policies targeting factor accumulation, several initiatives directly or indirectly influenced both physical and human capital development in India's economic policies during the post-colonial period up to the 1980s. Economic policies after gaining independence were largely inspired by Soviet-style five-year planning. The Avadi Resolution of 1955, established by the ruling Congress party, committed the country to socialism, resulting in a blend of democracy and socialist principles (Parekh, 1991).

Policies aimed at establishing an industrial base and achieving self-sufficiency in domestic production emphasised state ownership of key industries and adopted import-substitution strategies. The government focused on industrialisation through public sector undertakings (PSUs), paying particular attention to core industries such as steel, heavy machinery, and energy (Ahluwalia, 2002). The Industrial Policy Resolution of 1956 placed crucial sectors under state control and discouraged private investment through a regulatory framework, often known as the "Licence Raj", which required businesses to obtain numerous approvals to operate or expand (Panagariya, 2008). From the perspective of factor accumulation, while these policies led to significant investment and infrastructure development in certain

[10] See Appendix Table 1 for a summary listing of the major policies, grouped according to the typology, across different phases.

sectors, they also created inefficiencies, discouraged competition, restricted import of capital goods, and forbade a broad-based capital accumulation. Public sector dominance became a prominent feature of the economy. Potential for capital accumulation was limited, as licences were required for investing, producing, and importing even in industries that were not reserved for the public sector. This created a perception of insecurity for private entrepreneurs.

At the time of India's independence, the education system was largely underdeveloped, reflecting the priorities of the colonial era and existing social inequalities. Although post-independence policymakers prioritised education and human capital accumulation, their policies were biased towards higher education. Jawaharlal Nehru's vision of modernity emphasised science and technology as essential for development, which led to a focus on investing in elite institutions like the Indian Institutes of Management (IIMs) and the Indian Institutes of Technology (IITs) in the 1950s and 1960s (Drèze & Sen, 2002). It was anticipated that progress from these institutions would eventually benefit the broader population. However, this approach seemed to have compromised the prioritisation of mass literacy and primary education (Kumar, 2005; Drèze & Sen, 2013).[11] The literacy rates remained low, and access to primary schooling and healthcare was limited, particularly in rural areas (Drèze & Sen, 1995). This dual-track approach created a limited pool of highly skilled professionals but did not promote inclusive human capital development.

4.1.2 Technological and structural change policies

The policies implemented before the 1980s, when viewed from the perspective of technology and innovation, were primarily focused on achieving technological self-reliance. However, these policies also exhibited structural rigidities. They emphasised import substitution and domestic research and development (R&D) while restricting foreign direct investment (FDI) and technology transfer. As a result, this approach led to a high-cost industrial structure characterised by technological obsolescence (Bhagwati and Desai, 1970). Although the Green Revolution helped technological upgrading in agriculture—supported by state initiatives for high-yielding varieties, fertilizers, and irrigation (Frankel, 1971)—it failed to promote widespread technology diffusion. Clearly, the restrictive policy environment stifled broader industrial innovation.

[11] Drèze and Sen (2013) provide an in-depth discussion on the role of basic education in development. They highlight how India's expansion of school education lagged behind that of East Asian economies, with the notable exception being the southern Indian state of Kerala. The legacy of these policies continues to haunt the Indian education system, which Drèze and Sen (2013) characterise as on with "privileged excellence and social divisions." A relatively small portion of the population has access to high-quality education, while the majority is confined to a poor or inadequate educational system.

The Industrial Policy Resolution of 1956 and subsequent Five-Year Plans institutionalised investment licensing and emphasised the dominance of the public sector. The entry barriers and capacity controls established by the Licence Raj were not supportive of innovation at the firm level (Panagariya, 2008). Consequently, the private sector played a minimal role in R&D or technological advancement. In particular, the policy regime deterred both market entry and exit, allowing many inefficient public sector enterprises to remain operational through budgetary support. This prevented the reallocation of resources from inefficient to more efficient uses. Moreover, the restrictions on entry and exit also resulted in low productivity growth and limited industrial dynamism (Ahluwalia, 2002).

4.1.3 Policies aimed at market and resource allocation

Economic policies in India during the pre-1980s featured state-led controls and limited market freedom, resulting in the near absence of market-oriented reforms. Any reforms that did occur tended to impose additional controls. For example, the nationalisation of the Imperial Bank of India in 1955, which was renamed the State Bank of India, marked the beginning of significant state intervention in the financial sector. This was followed by the takeover of seven other banks by the State Bank of India in 1959 (Gupta, Kochhar, and Panth, 2011). The process continued in 1969 when the government nationalised 14 major commercial banks.[12]

The primary objectives of these policies were to promote financial inclusion, support credit to priority sectors such as agriculture and small-scale industries and achieve regional balance in financial development—thus aligning the banking sector with the government's socialist objectives. While these policies helped to expand banking outreach (see Burgess and Pande, 2005), they also created significant inefficiencies in the financial system due to a lack of competition and strict bureaucratic controls. More importantly the nationalisation policy may have weakened the private investors' trust in the system, as it increased the perceived threat of government takeover of private investments (Kochhar et al., 2006).

Similarly, the policies during this period were marked by extensive price and distribution controls under the Licence Raj system. Regulations on production capacity, pricing, and distribution resulted in supply bottlenecks and stifled innovation and competition in the product market. Although there were no explicit labour market reforms, industrial policies were introduced to promote labour-intensive manufacturing that favoured small enterprises, through reservation of certain products for the small-scale sector, as well as subsidies and tax concessions (Mohan, 2002). The employment protection measures introduced in 1976 through amendments to the Industrial Disputes Act of 1947, further

[12] For a detailed discussion of several banking sector reforms in chronological order, see Gupta et al. (2011)

made it hard for large firms to dismiss workers in firms with 300 or more employees without government approval.

In terms of competition policy, the Monopolies and Restrictive Trade Practices (MRTP) Act of 1969 was aimed to prevent the concentration of economic power and monopolistic practices. However, in practice, the Act often hindered the expansion of large firms by providing excessive control to government bodies that already enjoyed significant authority under the Licence Raj. This discouraged economies of scale and expansion of large firms, thereby negatively affecting productivity growth (Kochhar et al., 2006).

4.1.4 Trade &FDI policies

As is evident from the previous section, there was significant overlap between industrial policy and external sector policies during this period. The external sector policies were aimed at reducing reliance on foreign exchange and protecting local industries through import substitution. It involved stringent trade restrictions in the form of high tariffs, quantitative restrictions, and comprehensive import licensing systems, particularly for capital goods (Pursell, 1992; Bhagwati & Desai, 1970). Similar to any inward-looking protective regimes, these measures were justified as efforts to support domestic industries. However, by limiting exposure to competition and reducing firms' ability to import capital goods and technologies, these policies ultimately led to inefficiencies, poor competition, and a weak industrial sector without access to advanced technologies.

The policies also featured severe restrictions on foreign investment. Although FDI with majority local ownership was initially viewed positively, the policies became more restrictive in the late 1960s (Kumar, 2005). Restrictions were imposed on FDI proposals that did not involve technology transfer and those with more than 40 percent foreign ownership (Kumar, 2005). Moreover, the Foreign Exchange Regulation Act (FERA) of 1973 severely constrained foreign equity ownership, often limiting it to 40 percent in joint ventures unless classified as high-tech or export-oriented (Kumar, 1994).

These policies fostered an economy characterised by limited competition, technological stagnation, and restricted access to foreign technology—none of which appear to be a recipe for productivity growth (Ahluwalia, 2002).

4.2. Policies in the 1980s: From controls to cautious reforms – Early steps towards a pro-productivity policy regime

The period from 1980 to 1991 in India marked the beginning of incremental reforms and a growing emphasis on private sector activity and technology-driven growth. Driving by rising

scepticism toward the inefficiencies of earlier state-led policies, the liberalisation process arguably began as early as 1976 with the reintroduction of the Open General Licence (OGL) list[13] (Panagariya, 2004). Although the state-led development model largely persisted in the 1980s, gradual but meaningful changes were introduced in industrial, trade, and fiscal policies, laying the foundation for the more comprehensive liberalisation of 1991. These policy shifts had mixed impacts on factor accumulation, influencing investment, employment, and human capital formation in uneven ways. Reforms such as reducing licensing requirements, easing access to imported capital goods, and increasing public investment in infrastructure improved conditions for existing firms, though they did little to create space for new market entrants. At the same time, continued high tariffs, dominance of the public sector, and rigid labour markets limited competitiveness and prevented a broad-based productivity gain of the economy. This policy regime, which fostered closer ties between the state and established industrialists, has been described both as pro-business (Rodrik and Subramanian, 2005) and as insufficiently supportive of broader business development (Balakrishnan, 2010). This section reviews the major policies undertaken during the 1980s, from the lens of productivity.

4.2.1 Factor accumulation policies

The policy initiatives in the 1980s featured delicensing for small-scale sectors and selected industries, especially for consumer goods and electronics, raising the investment limit that required no licensing, and broad banding (Panagariya, 2002, 2004; Joshi & Little, 1994).[14] The 1985 new industrial policy measures included an attempt to deregulate some sectors, relax capacity restrictions, and promote technology adoption. During this phase, the list of imports under open general licence (OGL) gradually increased, rising from 1007 capital goods items in 1987, to 1170 in 1988, and 1329 by 1990. Items included in the OGL list, mostly capital goods and raw materials, typically enjoyed a tariff reduction. Studies have shown notable increases in the import penetration ratio of capital goods in the mid-1980s through the 1990s and improved productivity of capital investment (Goldar and Renganathan, 1990; Joshi and Little, 1994). The New Computer Policy of 1984 marked the beginning of deregulation in the IT and electronics sectors. This policy made it easier to import hardware and encouraged greater private-sector participation. Export promotion initiatives like the Duty Exemption Scheme and Cash Compensatory Support were also

[13] The term OGL refers to a licensing mechanism that facilitates the import and export of goods by simplifying regulatory procedures. The OGL permitted the import of goods without requiring specific licences, provided the items were not listed as prohibited or restricted.

[14] Broad banding was a policy that allowed firms to change their product mix without needing a new license. Compared to previous strict licensing regulations, firms could now produce multiple products under a single licence, switching production between similar production lines such as trucks and cars (see Panagariya, 2002).

introduced to stimulate manufacturing exports (Joshi & Little, 1994). These efforts aimed to enhance productivity and signalled a departure from the country's previously strict autarkic policies, although more extensive reforms were still on the horizon.

At the same time, the policies also featured the continued dominance of the public sector in the capital goods industries, licensing that was still required in some key sectors like coal, textiles, automobiles, sugar, steel, and chemicals, and the prevalence of the import substitution regimes. Accumulation of capital was constrained due to public sector inefficiencies and limited competition. Although the partial liberalisation measures that eased restrictions on the import of capital goods and technology was supportive of investment (Panagariya, 2008), the continued import substitution regime limited its effects on productivity growth and employment creation. Expansionary fiscal policy throughout the 1980s created some short-term stimulus to public investment, but macroeconomic instability and debt accumulation did not help foster private investment. It is argued that growth in the 1980s, fuelled by a rise in external debt that eventually resulted in the crisis of 1991, was unsustainable (Ahluwalia, 2002).

While there was a growing recognition of the importance of education and skill development, especially with the changing technologies and rising prominence of some of the elite institutions, specific policies targeting substantial transformation in education were less prominent. There have been some initiatives, such as the National Policy on Education (NPE) in 1986, aimed at universal access to primary education and the spread of adult literacy, and the National Literacy Mission in 1988.

Overall, these measures encouraged modernisation and expanded industrial output (Joshi & Little, 1994), which, along with deregulation and credit reforms in the form of liberalised credit for large borrowers and tax relief for big businesses (Kohli, 2006), eased constraints for capital accumulation for large businesses. However, these changes were less beneficial for small businesses and new entrants in the market.

4.2.2 Technological and structural change policies

The New Computer Policy of 1984 deregulated hardware imports and software development by reducing import duties and promoting domestic production (Evans, 1992; Nayyar & Nayyar, 2024). Since the adoption of information technology (IT) required a skilled workforce, the policy also fostered computer education, provided R&D incentives for the IT sector, initiated software parks, encouraged private sector involvement, and promoted the use of computers across various sectors. While the policy aimed to foster innovation marked a critical break from earlier attitudes towards importing technology, it also contained some restrictions to protect domestic firms. Quantitative restrictions and high tariffs still prevailed

for specific segments, such as mini and mainframe computers, and the import of fully assembled personal computers was restricted to promote local assembly. Restrictions on foreign equity participation were also imposed to promote domestic players. From this perspective, the reforms can be described as 'selective liberalisation,' favouring firms with R&D capabilities and domestic linkages while limiting competition (Mani, 2002).

Although the pace of implementation was slow, and the policy contained several limitations, one could argue that this was the first step in India's IT growth trajectory, leading up to the IT policy of 1999 and position the country as a leader in the global landscape of the software industry and in outsourcing. While the impact of the policy per se on productivity in manufacturing and other private sectors of the economy is less clear, and the exports of IT from India remained largely subdued until the early 2000s, the efforts helped build and nurture a knowledge infrastructure that was essential for the flourishing of the post-1990s IT revolution (Das and Sagara, 2017).[15] Balakrishnan (2006) interprets the high and rising export intensity of India's software production as a reflection of its global competitiveness, facilitated by state policies that included long-term investment in technical education, science and technology, fiscal support, and the provision of export-enabling infrastructure for the software industry. While this policy likely benefitted the IT sector itself—aligning with what van Ark et al (2011) consider as the direct contribution of IT production to productivity—subsequent studies specifically examining the broader impact of IT on economic growth in India did not observe widespread spillover effects from IT use among other industries, as adoption remained constrained (Erumban and Das, 2012).

As noted earlier, industrial policy in the 1980s featured licensing relaxation and broad banding and opening, albeit limited, opportunities for private entrants, especially in electronics and textiles. Although this could create some creative destruction by offering challenges to the public sector – for instance, private firms were allowed to compete with state-owned enterprises in the production of high-performance computers (Nayyar & Nayyar, 2024) –state-owned enterprises continued to dominate capital-intensive sectors, and exit mechanisms remained weak. The (partial) liberalisation of industrial licensing and expansion of firms' size, especially in the consumer goods segment, along with complementary policies to encourage local capacities in the technology sector, were implicitly targeted towards increased industrialisation - or structural change. However, the dominance of state-owned enterprises and lack of flexibility in the labour market may have limited the pace and scope of resource reallocation to more productive sectors. The policies

[15] The role of government policies in promoting India's IT industry is well documented in the literature (Parthasarathi 1987; Joseph 1997 and 2007; Heeks 1996; Chowdary 2002; Mani 2001)

largely favoured the incumbent players in the market and were less of a recipe for a market-driven factor reallocation.

4.2.3 Policies aimed at market and resource allocation

As is evident from the discussion above, the reforms of the 1980s marked the beginning of initial deregulation and an attempt to adopt market-oriented reforms, although they did not fully achieve market transformation. In addition to several industrial reforms, the decade also witnessed a few financial and product market reforms. The Modified Value Added Tax (MODVAT) introduced in 1986 aimed to reduce the cascading effect of taxes and improve tax compliance. This allows firms to deduct excise duty paid on domestically produced inputs and countervailing duties paid on imported inputs from their excise obligations on output (Panagariya, 2002, 2004). While the policy sought to simplify and rationalise the tax structures, it was not comprehensive (Rao, 2000). Moreover, the second phase of bank nationalisation in 1980 brought more banks under government control. The nationalisation, intended to improve financial inclusion, resulted in the public sector controlling nearly 90 percent of all banking sector assets, with the private and foreign banks accounting for the rest.

There was also a gradual shift towards deregulation in the product market. As mentioned earlier, the gradual expansion of the OGL list to more capital and intermediate goods (Panagariya, 2002) and the introduction of Replenishment (REP) licences in 1985[16] to incentivise exporters facilitated the easier import of capital goods and raw materials. The policies also aimed to abolish price and distribution controls on some products like cement and aluminium (Panagariya, 2002; 2004), which could potentially reduce entry barriers and support competition. The labour market, however, did not see any notable reforms during the 1980s, but it largely continued restrictive policies inherited from the Industrial Disputes Act of 1947, which did not foster flexibility.

The regulations of the MRTP act were relaxed in the mid 1980's, which helped reduce the constraints on business expansion and mergers (Panagariya, 2004, Kohli, 2006). Specifically, to avail the benefits of some of the liberal policy changes to the large firms under MRTP restrictions, the government increased the asset limit above which firms were subject to MRTP rules by fourfold, from Rs. 200 million to Rs. 1,000 million (Panagariya, 2002). While this released half of large businesses from the purview of the act, providing them with more

[16] REP Licences were an important component of the export promotion policy within India's import licensing regime. These licences were granted to exporters, allowing them to import inputs and goods—often duty-free or at reduced rates—used in the production of exported items. Exporters received REP licences, typically double their import needs, allowing them to source inputs for domestic goods. They could trade these licences freely and import items from a restricted list, including those not covered by the OGL (see Panagariya, 2004).

flexibility and allowing them to enjoy the benefits of deregulation, it did not help facilitate the entry of new firms. The gradual abolition of price and distribution controls marked a shift towards a somewhat more market-oriented approach.

4.2.4 Trade & FDI policies

Compared to the stringent import substitution regime in the pre-1980s, there was a trend towards incremental trade liberalisation in the 1980s (Kohli, 2006), some of which has already been discussed in previous sections. The incentives to export, relaxation of import restrictions through duty-free imports under REP licence scheme (1985), the nominal devaluation of currency in the 1980s, helping to improve export competitiveness, were among those (World Bank, 1991, Joshi & Little, 1994). The government also reduced the proportion of imports reserved solely for government (canalised imports) from 67 percent in 1980 to 27 percent in 1986 (Panagariya, 2004). Importantly, the policy shift toward a more market-aligned realistic exchange rate (Panagariya, 2004, Joshi and Little, 1994) helped improve the incentive structure for exports through making Indian exports cheaper and competitive abroad. The Maruti-Suzuki joint venture in 1982 between the Government of India (under Maruti Udyog Ltd.) and the Suzuki Motor Corporation in Japan, marked a significant foreign investment initiative by permitting a major foreign automaker to invest in India. This partnership fostered a learning-by-doing environment and created some productivity spillover effects (Nayyar & Nayyar, 2024).

While these policies were indeed commendable, it should be noted that the government did not fully abandon its protectionist attitude, and a comprehensive and full-scale trade liberalisation were not in place. Moreover, the FDI policy remained largely unchanged and the legacy of FERA and political aversion towards foreign capital continued, limiting foreign capital inflow.

4.3. Policies in the 1990s: Liberalisation and structural adjustment – a more definitive move to pro-market

By 1991, India had been experiencing a severe economic crisis fuelled by a sharp decline in foreign exchange reserves and a loss of investor confidence. Several factors contributed to this crisis, that included soaring oil prices due to the Gulf War, a decrease in remittances from Indian workers in the Middle East and increased political instability. In response to the balance-of-payments crisis, the government initiated a series of reforms, under the finance minister Manmohan Singh, which marked a historic shift away from the state-led, inward-looking attitude. The reforms included trade liberalisation, industrial deregulation, and financial sector restructuring, all aimed at stabilising the macroeconomy and integrating

India into the global market (Ahluwalia, 2002; Panagariya, 2008). These liberalisation measures addressed the immediate crisis and indicated a broader ideological shift toward market-oriented growth strategies (Rodrik & Subramanian, 2005), which would lead to more liberal pro-market reforms in the years to come.

4.3.1 Factor accumulation policies

The policies in the 1990s included important measures aimed at improving productivity through capital accumulation, enhancing macroeconomic stability, and promoting market liberalisation. The long-standing "Licence Raj" was more or less abolished with the de-licensing of industries, except for a few strategic, hazardous, and environmentally sensitive sectors, as well as some protections for the small-scale sector. The abolition of licensing system helped eliminate entry barriers in the market, encouraging private investment and fostering a competitive market structure (Ahluwalia, 2002; Desai, 2006; Panagariya, 2004; Kumar, 2005; Government of India, 1991).

Moreover, the liberalisation of FDI, albeit partial and phased, allowed for the entry of foreign capital and facilitated technology transfers (Chopra & Collyns, 1995; Batra, 2022). Complementary to this was a two-step rupee devaluation, implemented in July 1991 amid the foreign exchange crisis, aimed at boosting exports and restoring investor confidence (Ghosh, 2004). The currency devaluation was managed by the Reserve Bank of India (RBI), without requiring parliament approval, thus limiting potential political interference. To counter inflation, the RBI also increased the bank rate, term deposit rate and lending rate for large borrowers.

The above policies marked a shift toward a market-driven exchange rate system. The government introduced a liberalised exchange rate management system (LERMS), which permitted flexibility in currency transactions by allowing 40 percent of foreign exchange receipts to be sold at the official rate and 60 percent at market rates. Notably, the official and market exchange rates were unified in 1993, allowing the market to determine the value of the currency (Batra, 2022). The currency devaluation and the new exchange rate regime contributed to the improvement of macroeconomic stability, external account stability, export competitiveness, and investor confidence, indirectly incentivising private capital investment. The policies also included some efforts to support private sector participation in infrastructure investment, as well as some reforms in the power and telecom sectors. However, the power sector remained predominantly under public control.

The liberal reforms and new entrepreneurship opportunities also created a need for skilled workers, leading to increased demand for higher education from a growing middle class. While these demands were largely shifted towards private sector, there were no major

attempts to extend the public sector education (Agarwal, 2006). The strengthening of the elite institutions such as IITs and IIMs continued in alignment with the economy's integration into the global knowledge economy. The District Primary Education Programme (DPEP), introduced in 1994 with the World Bank support, and subsumed under other programmes in the 2000s, was one of the first large-scale education reforms in India, that targeted primary education. This programme was aimed to increase school participation, inclusive education, and literacy rates in less developed regions (Kumar et al, 2001). Overall, it is reasonable to conclude that the policy initiatives during the 1990s sought to address several constraints on private capital accumulation that were accumulated since independence, reorienting public investment to complement private capital in infrastructure, create a more stable domestic investment climate, and facilitate foreign access, while offering limited initiatives for human capital accumulation.

4.3.2 Technological and structural change policies

The policies introduced in the 1990s, which included delicensing, liberalisation of FDI, and the removal of price controls, were supportive of structural transformation, as they facilitated a market-driven allocation of resources (Desai, 2006; Aghion et al., 2008). The gradual privatisation and disinvestment of public enterprises were also intended to improve allocative efficiency by reducing fiscal burdens and introducing private-sector management practices (Chamarbagwala & Sharma, 2011; Mani, 1997). The exit of inefficient firms, that long survived in the market, in some way contributed to a process of creative destruction and improved market dynamics, that could support overall productivity.

Moreover, trade and FDI liberalisation fostered more competitive and export-oriented activities in the economy, facilitating access to better imported technologies and knowledge spillovers from FDI. In particular, the opening up of FDI facilitated technological catch-up, availability of new production techniques, and managerial expertise in high-tech and consumer goods (Mani, 1997). Technological change was further supported by the New Telecom Policy of 1999, which liberalised the telecom sector, encouraged private participation, and enabled rapid mobile and internet penetration (Desai, 2006). Similarly, the emergence of ATM networks and electronic payments marked an early stage of financial digitalisation that improved transaction efficiency and transparency. Collectively, these policies could be viewed as pro-productivity through improved structural reallocation from state-dominated, low-productivity sectors to the more dynamic and technologically advanced private sector.

4.3.3 Policies aimed at market and resource allocation

The dismantling of the Licence Raj remains one of the most influential reforms, even from a market perspective, as it lowered entry barriers and encouraged private investment. There were also other notable reforms aimed at enhancing financial and product markets and promoting competition. The government liberalised the capital markets through measures such as reducing the Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR),[17] allowing the entry of private and foreign banks, and strengthening the role of market forces in credit allocation and financial intermediation. These reforms, along with the setting up of the Securities and Exchange Board of India (SEBI), aimed to regulate and develop India's securities market and protect investor interests, were aimed to improve efficiency and competitiveness in the financial sector (Das & Ghosh, 2006).

The telecom sector liberalisation of 1994, which we discussed earlier, also played an important role in introducing competition and private investment in the sector, and increasing the access to and affordability of telecom services (Dossani, 2002; Singh, 2000). The repeal of the MRTP Act in 1991 removed the requirement for government approval of business expansion and laid the foundation for the later Competition Act of 2002. However, labour market laws remained largely rigid and protective of formal employment, which discouraged hiring in the organised sector and pushed firms toward informal or contractual labour arrangements. In general, the reforms were beneficial in improving allocative efficiency by promoting competition, investment, and a more efficient use of labour and capital, although the lack of labour reforms limited the employment benefits of economic liberalisation (Besley, Timothy, and Burgess, 2004).

4.3.4 Trade &FDI policies

We have noted earlier that in the previous two policy phases, India followed an import-substitution regime. The New Trade Policy of 1991 marked a significant policy shift to a more open, export-oriented strategy (Batra, 2022). This shift involved the removal of quantitative restrictions, a drastic reduction in tariffs, and the replacement of a complex licensing system with a simplified 'negative list' for imports (Hasan et al., 2007; Chopra et al., 1995;

[17] The CRR and SLR are regulatory requirements set by the Reserve Bank of India (RBI) that mandate banks to hold a portion of their deposits to control liquidity, ensure financial stability, and support monetary policy. While CRR is held in the form of cash with the RBI, the SLR in kept the form of liquid assets like government securities maintained by the bank itself.

Panagariya, 1999; Panagariya, 2004; Kumar, 2005).[18] With the shift from an old "positive list" to a "negative list," imports of most goods became possible unless specifically restricted.

The 1991 devaluation of the rupee—part of the IMF-supported stabilisation package—and the adoption of a market-determined exchange rate system in 1993 further helped realign export incentives and address the lingering overvaluation and balance of payments crisis (Chopra, Chu, & Fratzscher, 1995). Lastly, India's accession to the WTO in 1995, which institutionalised its commitment to global trade rules and discipline (Das, 2003), and the liberalisation of FDI in 1992 helped capital inflows, technology transfer, and export-oriented production (Kumar, 2005; Goldar & Kumari, 2003).

However, it is often argued that while these changes reduced distortions and enhanced allocative efficiency, they were still hampered by high effective protection rates, continuing anti-export bias, tariff dispersion, customs procedures, and infrastructure bottlenecks (Balasubramanyam, 2003). Overall, one may conclude that the FDI and trade policies in the early 1990s featured an outward-oriented growth strategy, that could help improve productivity through greater competition, technology transfer, and global market access. However, these policies lacked the aggressive promotional stance witnessed in Southeast Asian countries and failed to sufficiently link FDI to export-oriented manufacturing (Balasubramanyam, 2003), potentially limiting their productivity spillovers.

4.4. Policies since the 2000s: Targeting structural bottlenecks, and inclusive growth

Since the early 2000s, India has introduced a broad set of economic policies aimed at sustaining growth and deepening the structural transformation initiated in the 1990s. While building on earlier reforms, these reforms reflect a more mixed and pragmatic approach by combining market-oriented policies with state-led initiatives and selective protectionism.

4.4.1 Factor accumulation policies

There have been a number of policies initiated in the 2000s, building on the pro-market reforms in the 1990s, with the potential to support capital accumulation and enhance productivity. In particular, polices to stimulate infrastructure development under the National Highways Development Project (2001) and the National Infrastructure Pipeline (2019) were aimed to enhance national connectivity, which is important for long-term

[18] The "positive list" was a list of products with preferential treatment, or items that could be imported only with a specific import licence. On the contrary, items on the "negative list" were completely banned from import. Therefore, the shift from a positive list to a negative list improved transparency by shifting from restrictive, discretionary import controls to a more transparent and liberal trade regime (Hasan et al., 2007).

productivity growth (Ministry of Road Transport & Highways, 2008; GoI, 2020). These investment allocations, along with increased capital expenditure (CAPEX) in Union Budgets after 2020, were efforts to boost productive public investment, particularly in infrastructure. This, in turn, could support private sector productivity by relaxing logistical bottlenecks. Another long-standing impediment for investors in India had been the hurdle of land acquisition, stemming from growing public discontent and legal disputes under colonial-era land rules that lacked transparency, consent, and fair compensation. The introduction of the Right to Fair Compensation and Transparency in Land Acquisition, Resettlement, and Rehabilitation (RFCTLARR) Act of 2013 was a major step toward addressing these concerns by ensuring fair compensation to landowners and establishing clearer procedures—thereby easing land acquisition for investors. However, it still lacked a suitable process for determining the rates at which land should be acquired (Singh, 2017).

Alongside this, several policies were also introduced to help improve human capital. This include the Sarva Shiksha Abhiyan (2001), with the aim of achieving universal elementary education across the country by improving access, infrastructure, and quality in primary and upper primary schools. The Right to Education Act (2010), which made education a fundamental right for all children aged 6-14, further complemented these initiatives (Shah & Steinberg, 2019). Subsequently, the National Education Policy was introduced in 2020, with an ambitious reaffirmation of universal, equitable, and quality education featuring mother tongue instruction and constitutional values. However, scholars have raised concern over its unclear action plans and, more importantly, the vague emphasis on Indian ethos, which may reflect ideological capture and social concern (Jha and Parvati, 2020). The Skill India initiative and the National Skill Development Mission (2015) were also key steps toward enhancing employability and reducing skill mismatches in the labour market (Mitra, 2016). Moreover, initiatives like Aadhaar, a biometric-based digital identity system that assigns a unique 12-digit number to each individual, and Jan Dhan Yojana, a financial inclusion programme that offers low-income individuals access to basic banking services, may indirectly contribute to human capital by improving the targeting and delivery of social services. By linking individuals and transactions to formal identification and bank accounts, these programmes may help create an environment that encourages the formalisation of economic activities.

4.4.2 Technological and structural change policies

India's efforts in the 2000s to stimulate technology and structural change have included several policies aimed at enhancing innovation capacity and domestic manufacturing capabilities. The Science, Technology, and Innovation Policy (STIP) was geared towards setting a broad framework to strengthen R&D ecosystems and promote innovation-led

growth. The Start-up India initiative introduced in 2016 was a major step to create a pro-entrepreneurship and innovation environment and provided targeted support to early-stage technology firms (Tiwari, Hogan & O'Gorman, 2021). The Digital India campaign (2015) was an initiative to transform India into digitally empowered knowledge economy. In addition, the National intellectual property rights (IPR) Policy (2016) and amendments to the Patents Act were important in strengthening the innovation ecosystem. By ensuring IP rights and aligning domestic laws with international standards, these policies are expected to encourage both domestic and foreign investment in R&D.

From a productivity perspective, industrial and manufacturing policies have also been central. The Make in India initiative (2014) was introduced to make India into a global manufacturing hub through both domestic and foreign investment (Mitra, 2016; Nagaraj, 2025). With the objective of raising the manufacturing share to a quarter of GDP, the policy included easing regulatory processes, improving infrastructure, and promoting investment in 25 key sectors such as automobiles, electronics, and textiles. More recently, the Production-Linked Incentive (PLI) Scheme (2021) has been introduced offering output-based subsidies in strategic sectors like electronics, pharmaceuticals, and automotive (Nagaraj, 2025). Similarly, the National Manufacturing Policy (2011) and the National Industrial Corridor Development Programme are aimed to address infrastructural and logistic bottlenecks that hinder productivity growth (Kujur & Goswami, 2021). Continued strategic disinvestment of public sector enterprises is pursued to improve resource allocation and promote private sector efficiency. The Atmanirbhar Bharat initiative (2020) marked a broader strategic shift toward economic self-reliance. However, while it emphasises domestic capabilities, its protectionist tendencies may undermine long-term productivity growth by reducing competitive pressures (see Nagaraj, 2025). Taken together, these policies represent a significant attempt to shift India toward a more manufacturing-oriented, innovation- and productivity-driven growth trajectory, though their effectiveness varies depending on implementation, sectoral focus, and integration with global value chains.

4.4.3 Policies aimed at market and resource allocation

In recent decades, India has undertaken a range of market-oriented reforms aimed at improving the functioning of financial, labour, and product markets, as well as fostering competition—each with significant implications for productivity. For instance, the introduction of the Goods and Services Tax (GST) in 2017, replacing a fragmented indirect tax regime with a unified national tax, helped reduce transaction costs, eliminate tax cascading, and create a common market (Rao, 2019). With increased transparency, the greater ability of the government to track economic activity, and the compliance imperative,

GST is also expected to have a long-term favourable impact on formalising the economy. The Insolvency and Bankruptcy Code, introduced in 2016, was aimed to enable time-bound resolution of corporate distress and improving the recovery rate for creditors. In the labour market, the Labour Codes Reform of 2020 was introduced, which included an increase in the threshold number of workers requiring government approval for lay-offs from 100 to 400. Thus the reform was intended to bring flexibility for employers with protections for workers, although some scholars have raised concerns about its impact on informal labour (Sarkar & Samantroy, 2023). The liberalisation of the Industrial Disputes Act in 2024 further eased retrenchment norms, particularly for large firms, making labour markets more flexible and conducive to investment.

On product markets and competition, reforms such as amendments to the Essential Commodities Act in 2020 sought to liberalise agricultural markets by removing stock limits on certain commodities, though these were politically contentious and eventually repealed. The Competition Act of 2002, replacing MRTP, and the establishment of the Competition Commission of India (CCI) (Mehta, 2002; Bhattacharjea, 2003) enhanced regulatory oversight. These policies were aimed at curbing monopolistic practices and promoting allocative efficiency and innovation. Initiatives like Startup India (2016) and Ease of Doing Business reforms were aimed to lower entry barriers, simplify compliance, and stimulate entrepreneurship. Meanwhile, the continued privatisation and strategic disinvestment of public sector enterprises post-2000 (Dholakia & Dholakia, 2022) were aimed to reduce fiscal burdens and enhance efficiency through private sector discipline. The Real Estate (Regulation and Development) Act was introduced in 2016, aimed to increase transparency and consumer trust in the real estate market. Finally, ongoing banking sector reforms, including recapitalisation, mergers, and governance improvements, have sought to strengthen financial intermediation, although challenges in resolving bad loans and improving credit flow remain. While the Prime Minister Narendra Modi's demonetisation in 2016 initially disrupted banking operations, and informal economic activities, it catalysed a shift toward digital transactions (e.g. digital payment platforms like UPI) and financial formalisation, enhancing long-term efficiency and resource mobilisation within the sector. The reduction in cash dependency, and the increased ability to track financial transactions by formal institutions and tax authorities, could potentially also help expand formal economic activities in the economy. Collectively, these policies constitute a significant movement toward a more competitive, transparent, and productivity-enhancing market environment in India, although their success crucially depends upon the clarity and effectiveness in implementing them.

4.4.4 Trade &FDI policies

Trade and FDI policies in the 2000s contained both a continuation of liberalisation trends, as well as tendencies of protection. The abolition of import licensing on consumer goods in the early 2000s was an important reform that dismantled one of the last traces of the Licence-Raj, potentially encouraging competition, technological diffusion, and consumer choice (Panagariya, 2004). The restrictive FERA regime was replaced by the more liberal and management-oriented Foreign Exchange Management Act (FEMA), 2000. This reflected a shift in regulatory stance from strict control to management of foreign exchange in an effort to facilitate capital inflows and outflows (RBI, 2005). FDI inflows were further supported by the establishment of the Special Economic Zones (SEZs) Policy (2000–2009), with the aim of attracting export-oriented FDI by providing regulatory and fiscal incentives. India's participation in South-South cooperation frameworks, such as BRICS since 2006, has opened new opportunities for trade, investment, and institutional learning (Mawdsley, 2012). Similarly, initiatives to establish bilateral trade agreements with various countries (e.g., the EU, UAE, Australia) and active engagement in G20 platforms have signalled a positive perception in building international relations. While not directly linked to trade and FDI policies, several other initiatives, such as the National Infrastructure Pipeline (NIP, 2019) and the National Industrial Corridor Development Programme, have also supported these trade efforts by promoting export-oriented industrialisation (NITI Aayog, 2020).

However, the post-2020 policy phase has also witnessed some protectionist tendencies, including increased tariffs on electronics and textile imports and tighter scrutiny of FDI from neighbouring countries—actions consistent with the Atmanirbhar Bharat agenda (Chatterjee & Subramanian, 2023). Chatterjee & Subramanian (2023) note that the most favoured nation (MFN) tariff in India declined from 125 percent to 13 percent over the 23 years from 1991 to 2014 but has increased to 18 percent since 2014.[19] Thus, the recent trade and FDI reforms underscore India's targeted liberalisation of the external sector, even while incorporating elements of protectionism.

5. India's Productivity Challenges: Service-Sector Dominance, Informality, and Human Capital Gaps

While there are several challenges for India to sustain its productivity momentum, three distinct yet interrelated aspects warrant attention based on the evolution of its productivity and policies. They are the dominance of services and limited expansion of manufacturing in

[19] An MFN tariff is the lowest tariff rate a country provides to its trading partners on a non-discriminatory basis.

its growth narrative, the persistence of a large informal economy, and slow human capital formation.

First, unlike many advanced and East Asian economies, India's structural transformation largely bypassed the stage of industrialisation. Although much of the policy focus since independence has been on creating a solid manufacturing sector, it accounted for less than 15 percent of value added and 10 percent of employment in the pre-1980s (Das et al., 2019). This proportion has not changed significantly over the years, suggesting that the transition of the economy from agriculture has failed to generate high-value industrial jobs. Since the 1990s, the construction and services sectors have absorbed most of the employment growth, and recent data even suggest a partial reversal of workers toward agriculture. The share of manufacturing in total employment increased only marginally from 8.2 percent in 1950 to 10.6 percent in 2022, and in value added from 12.7 percent to 14.3 percent.[20] In contrast, the share of services expanded sharply—employment from 18 percent to 34 percent and value added from 27 percent to 54 percent.

The service sector's dominance is also evident in aggregate labour productivity growth throughout the post-independence period, suggesting that productivity growth in services has been the primary contributor, although there was a shift from non-market to market services after the 1990s (Das et al., 2019). Labour productivity growth in the service sector, especially in business services, has been partially fuelled by advancements in information and communication technology (ICT) and software services. This sector has benefited from early investments in ICT infrastructure and a relatively young, tech-savvy workforce (van Ark & Pilat, 2024). In contrast, the relative productivity contribution of the manufacturing sector has remained stagnant, accounting for roughly one-fifth to one-quarter of overall productivity growth. The manufacturing sector remains constrained by poor infrastructure, regulatory burdens, and difficulties in achieving scale. This is especially evident among small and medium enterprises (SMEs), which account for a large share of employment yet continue to face significant barriers in accessing finance and adopting new technologies (Abraham & Schmukler, 2017). Countries like Vietnam and Bangladesh have surged ahead in labour-intensive manufacturing exports due to better integration into global value chains and more effective industrial policy (Fernandes et al., 2022). India's initiatives, such as Make in India and the PLI schemes, have yet to deliver widespread gains, partly due to weak

[20] From 1980 until the global financial crisis of 2009, manufacturing value added accounted for roughly 18 percent of GDP. Since then, its share has steadily declined, averaging around 15 percent in the post-crisis period. Meanwhile, the employment share averaged around 11 percent. Data for the pre-1980 period are drawn from Das et al. (2019), while post-1980 estimates are based on the India KLEMS database. All value-added shares are measured at current prices.

domestic supply chains, rising dependence on China, limited success in boosting domestic and foreign investment, and continuing rigidities in land and labour markets.

Second is the persistence of a large informal sector, which employs more than 80 percent of the workforce and exhibits significantly lower productivity than the formal sector (Jat and Ramaswami, 2025; Basole et al., 2025; Krishna et al., 2018). In the non-agricultural economy (excluding construction and energy), nearly half of manufacturing jobs and 60 percent of trade sector jobs are informal, generating only 10 and 20 percent of value added, respectively. In other services (excluding public administration), one-third of jobs are informal but contribute just 7 percent of value added. This dual structure of the labour market is not only a drag on aggregate productivity but also reflects deeper issues in labour regulation, working conditions, wage disparities, welfare, skill formation, and firm dynamics (Erumban, 2024).

Given the role of the informal sector in employment generation and the difficulty of formalisation, improving productivity without compromising job creation in the sector is essential for inclusive and sustained economic growth. The recent consolidation of labour codes (2019–2020) was aimed at simplifying labour laws, yet retains concerns over implementation, labour protection, and the capacity to support large-scale formalisation. [21] Indeed, several other policy initiatives by the government during the last two decades could potentially reduce informality—directly or indirectly—by expanding taxation, finance, and social security. The rollout of the GST, for example, was expected to create digital tax trails that could encourage firms to formalise. Initiatives such as Jan Dhan (financial inclusion), Aadhaar (digital ID), and the surge in digital payments after demonetisation sought to reduce financial exclusion. Social protection programmes like Ayushman Bharat (2018) were designed to extend coverage to informal workers. Despite these efforts, the decline in informality has been modest.

According to alternative World Bank estimates (Elgin et al., 2021), the informal output share declined by roughly 0.07–0.3 percentage points per year between 1995 and 2005, and by 0.02–0.4 points per year between 2005 and 2019, depending on the measure used. Reductions in informal employment have been somewhat faster, with the annual decline rising from about 0.05 percentage points in the early period to 0.4 points during 2005–2022, according to estimates of self-employment by ILO. Still, India's pace of formalisation remains slower than in countries such as Viet Nam and Cambodia, which had similar self-

[21] Ahsan and Pagés (2009) have shown that labour laws that increases the cost of dispute resolution or employment protection significantly reduce employment and output in the registered or formal sector.

employment rates in the 1990s but achieved faster reductions. The sheer size of India's informal sector, that span across various sectors of the economy, makes it challenging to formalise the economy faster. However, policies should recognise the significant potential for engaging in the global value chain, and the importance of enhancing linkages between the formal and informal sectors. It is important to support modernisation and productivity improvements within the informal sector (Moreno, et al. 2014).

Third, underinvestment in high quality public education, especially in primary education, and weak academia–industry linkages have resulted in a workforce with limited adaptability, restricting India's ability to transition workers into more productive sectors. This is particularly important given the global trend of automation of routine jobs, which might reduce opportunities for low- and semi-skilled labour. To harness India's demographic dividend and make human capital more valuable in the modern job market—especially in the emerging service value chain—investment in the quality and accessibility of education is essential.

Weak investment and limited focus on human capital development also affect India's innovation system, as evidenced by low R&D spending. As of 2020, India's R&D expenditure as a percentage of GDP stood at 0.6 percent—comparable to its R&D intensity in 1996. This is the lowest among the BRIC countries, far below China (2.4 percent), Brazil and Russia (over 1 percent), and substantially lower than advanced economies such as the United States and Germany (above 3 percent). This suggests that, in addition to improving primary and overall education quality, India also needs to invest significantly in enhancing its innovation capabilities. Recent initiatives such as the Science, Technology, and Innovation Policy, Sarva Shiksha Abhiyan, and the Right to Education Act of 2010 aim to address these areas (van Ark & Pilat, 2024). However, these initiatives still have deficiencies, in terms of the scale of the requirement, the extent to which they address major concerns and their effective implementation (Jha & Parvati, 2020; Abrol, 2021).

To sum up, India's productivity potential depends critically on these interlinked transformations: reinvigorating manufacturing through infrastructure and policy coherence, modernising and supporting the informal sector while facilitating formalisation, and deepening investment in education and innovation. Addressing these challenges will be essential for sustaining inclusive and durable productivity growth in the coming decades.

6. Conclusions and the road forward

Following the typology in Van Ark, de Vries, and Pilat (2023), this paper traced the evolution of India's economic policies since independence in 1947 (see Appendix Table 1 for a summary of the policies). It highlights their shifting orientations, implications for productivity, and a broad and consistent link between policy changes and productivity trends. In the early post-independence decades, the socialist framework—marked by state control and the Licence Raj—sought self-sufficiency through regulation, protectionism and planning. While it created a diversified industrial base, this system constrained competition, technological diffusion, and innovation – conditions poorly suited for productivity growth – resulting in weak productivity growth through the mid-1980s. Output expansion during this period was largely driven by public capital accumulation, while TFP growth remained nearly absent.

The 1980s marked the beginning of cautious reforms that allowed greater private participation alongside a strong public sector presence. However, policies easing access to imported capital goods, expanding public investment in infrastructure, and selectively relaxing licensing primarily benefited incumbent firms rather than fostering new entrants or competitive markets. Even so, the 1980s registered the first signs of a productivity revival, as firms appeared to operate with improved efficiency within a still-protected environment.

Following the balance-of-payments crisis in 1991, liberalisation policies that included trade reform, industrial deregulation, and financial restructuring, ushered in a market-oriented regime aimed at efficiency and global integration. Despite short-term disruptions, these reforms realigned incentives toward competition and efficiency, generating notable gains in labour productivity through enhanced capital accumulation – including ICT investments – and structural shifts toward more productive sectors, while TFP growth remained modest.

Subsequent decades, which witnessed continued efforts to reform the economy, saw rapid private capital accumulation and rising investment rates, particularly before the GFC. TFP growth that slowed initially after liberalisation in the 1990s rebounded, supported by a shift from non-market to market services as the primary source of productivity gains. The continued liberalisation momentum through the 2000s aimed to consolidate and sustain market efficiency gains through a more pragmatic mix of openness and selective protection, while targeting structural bottlenecks, expanding infrastructure, and promoting inclusive growth. The 2000s also witnessed a revival in manufacturing productivity, though its contribution remained modest compared to services. After the GFC, non-market services again led productivity growth, but the pandemic disrupted the productivity momentum, as lockdowns caused significant labour market dislocations, supply chain disruptions, and

severe shocks to the informal sector. Recent data, however, suggest that despite these short-term challenges, India's post-pandemic recovery has shown resilience.

The paper also observes that some features of India's productivity and structural change – namely, the absence of a solid manufacturing sector capable of absorbing large pools of semi- and unskilled workers, the persistence of a large and low-productivity informal sector, and underinvestment in education – pose challenges for sustaining productivity, creating jobs, promoting inclusiveness, and ensuring sustainable growth. Moreover, market and institutional inefficiencies continue to adversely affect the efficient allocation of capital and innovation-led growth. For instance, despite its success in increasing banking access, especially in rural areas, the banking sector remains costly and inefficient, featuring non-performing assets, under-lending, and a lack of prioritisation in financing industries (Banerjee et al., 2005). Moreover, institutional capability and regulatory quality are uneven across states, which affects the enforcement of contracts, land titling, and governance quality—key determinants of firm performance and investment (Pritchett et al., 2010; Kohli, 2012). It is important to pursue the reforms that target these institutional bottlenecks, including judicial reform, decentralisation of industrial policy to more capable states, and deeper financial sector reforms.

Although the renewed investment in infrastructure projects, PLI schemes, efforts to enhance female labour force participation, skill development programmes, and tax reforms are expected to support manufacturing and productivity in the coming years, a transition toward a robust manufacturing base remains a significant challenge. The global reconfiguration of supply chains and China's gradual retreat from labour-intensive production might appear to provide India with an opportunity to position itself as an alternative hub. Success, however, will depend not only on attracting foreign and domestic investment but also on improving logistics, reducing regulatory frictions, enhancing cost-competitiveness and fostering domestic innovation capacity. Even if manufacturing expansion is gradual, India's large domestic market, young labour force, and the growing importance of tradable services in the global economy can provide opportunities for long-term productivity growth—provided appropriate policies are in place to harness them.

In a cross-country comparison, India remains a "lagging but growing" productivity performer, with productivity levels at roughly 10 percent of the U.S. benchmark but among the fastest-growing within the G20 since the 2000s (van Ark & Pilat, 2024). Looking forward, solely from a growth perspective, the government's Viksit Bharat @2047 vision—to achieve developed economy status by India's centenary of independence by narrowing the country's income gap with global frontiers —implies an ambitious per capita income growth of 6.5–8 percent annually. Achieving this is implausible without substantial and broad-based productivity

improvements. The policy priority must therefore be to align industrial, trade, infrastructure, and digital strategies toward productivity-led growth. Lessons from India's past underscore that capital accumulation alone is insufficient; sustained progress depends on efficient resource allocation, human capital formation, and innovation. Expanding participation in global value chains, especially in labour-intensive sectors beyond IT and capital goods, will be essential for creating productive, well-paying employment.

India should also reconsider its recent shift towards inward-looking policies and recognise its potential, not only in service sector exports given the rising opportunities in that segment, but also by tapping into labour-intensive manufacturing export sectors. This can be achieved through continued openness and integration with the global economy, which will also help improve productivity and competitiveness. The revival of India's inward orientation is partly driven by the desire to boost domestic demand for economic growth, aligning with the arguments in the context of the secular stagnation debate in advanced economies (Summers, 2014, 2016). However, the assumption that the size of the domestic economy per se can compensate for the gains from trade—amid diminishing export opportunities and declining globalisation—is misleading, as it overlooks the low purchasing power of the average Indian consumer and underestimates the potential for growth in the trade of services (Chatterjee & Subramanian, 2023; Baldwin, 2016, 2019). Indeed, the ongoing global trade tensions, while difficult to quantify due to their fluctuating nature, are likely to affect India's manufacturing exports—particularly in labour-intensive sectors such as textiles, apparel, and jewellery—as well as jobs and productivity, unless India successfully diversifies its trading partners.

At the same time, India's productivity prospects will unfold within a rapidly evolving global context. The coming decades will be shaped by three major forces: demographic change, technological transformation, and climate risk. These forces will shape labour supply, productivity, and sustainability in ways that remain highly unpredictable. Although India currently enjoys a demographic dividend—with a median age below 30 and an old-age dependency ratio near 10 percent—this advantage will narrow as the population ages. According to UN projections, the dependency ratio is expected to double over the next 25 years, underscoring the need to invest today in healthy ageing and social security, alongside continued efforts to improve the quality and accessibility of education. Such investments will be critical to convert the demographic dividend into human capital and ensure future economic resilience.

The rise of artificial intelligence (AI) presents both an opportunity and uncertainty. AI could significantly raise productivity, particularly in high-skill service sectors, but may also displace routine and informal jobs. Realising its benefits requires large-scale investment in

digital literacy, workforce upskilling, and the diffusion of AI tools to small and medium enterprises. Targeted support will be crucial to ensure that technological change complements rather than excludes India's vast labour force.

Finally, climate change poses a systemic threat to productivity through its impact on agriculture, labour productivity, and infrastructure. Rising temperatures, extreme weather, and environmental degradation risk reversing development gains, especially given that two-fifth of labour force still relies on agriculture. Scaling up green investments and accelerating the adoption of clean technologies are therefore not only environmental imperatives but also central to long-term productivity and competitiveness.

In sum, India's economic evolution illustrates a remarkable journey from regulation-bound stagnation to market-driven dynamism. Yet sustaining and deepening productivity growth will require a forward-looking agenda that strengthens institutions, expands manufacturing, support informal sector modernisation, formalises employment, invests in inclusive human capital and innovation, and embeds technology and sustainability at the core of India's development strategy. If India succeeds, it will not only lift living standards at home but also remain one of the principal engines of global productivity growth in the twenty-first century.

References

Abrol, D (2021). Science, Technology, and Innovation Policy 2020, Economic and Political Weekly, 56(6).

Acharya, S. (2006). *Essays on macroeconomic policy and growth in India*. Oxford University Press.

Agarwal, P. (2006). *Higher education in India: The need for change, ICRIER working paper* No. 180.

Aghion, P., Burgess, R., Redding, S. J., & Zilibotti, F. (2008). The unequal effects of liberalisation: Evidence from dismantling the License Raj in India. *American Economic Review*, *98*(4), 1397-1412.

Ahluwalia, M. S. (1986). Balance-of-payments adjustment in India, 1970–1971 to 1983–1984. *World Development*, *14*(8), 937-962.

Ahluwalia, I. J. (1985). *Industrial growth in India: Stagnation since the mid-sixties*. Oxford University Press.

Ahluwalia, I. J. (1991). *Productivity and growth in Indian manufacturing*. Oxford University Press.

Ahluwalia, I. J. (2002). Economic reforms in India since 1991: Has gradualism worked? *Journal of Economic Perspectives*, *16*(3), 67–88.

Ahsan, A., & Pagés, C. (2009). Are all labour regulations equal? Evidence from Indian manufacturing. *Journal of Comparative Economics*, *37*(1), 62-75.

Balakrishnan, P., & Pushpangadan, K. (1994). Total factor-productivity growth in manufacturing industry: a fresh look. *Economic and political weekly*, 2028-2035.

Balakrishnan, P. (2006). *Benign neglect or strategic intent? Contested lineage of Indian software industry*. Economic and Political Weekly, 41(36), 3865–3872.

Balakrishnan, P. (2010). *Economic Growth in India: History and Prospect*. Oxford University Press.

Balasubramanyam, V. N. (2003). India: Trade policy review. *World Economy*, *26*(9), 1357-1368.

Baldwin, R. (2016). *The great convergence: Information technology and the new globalization*. Harvard University Press.

Baldwin, R. (2019). *The globotics upheaval: Globalization, robotics, and the future of work*. Oxford University Press.

Banerjee, A., Cole, S., & Duflo, E. (2005). Bank financing in India. In Tseng, W & Cowen (ed.), *India's and China's recent experience with reform and growth* (pp. 138-157). London: Palgrave Macmillan UK.

Baqaee, D. R., & Farhi, E. (2024). Networks, barriers, and trade. *Econometrica*, *92*(2), 505-541.

Basole, A., Chopde, D., & Nath, P. (2025). The formal–informal productivity gap among small manufacturing firms: Evidence from India. *Economic and Political Weekly,* 60(43–44), 47–56.

Basu, S., & Fernald, J. G. (2002). Aggregate productivity and aggregate technology. *European Economic Review*, *46*(6), 963-991.

Batra, A. (2022). *India's trade policy in the 21st century*. Routledge.

Baumol, W. J. (1986). Productivity growth, convergence, and welfare: What the long-run data show. *American Economic Review*, *76*(5), 1072–1085.

Besley, T., & Burgess, R. (2004). Can labour regulation hinder economic performance? Evidence from India. *The Quarterly journal of economics*, *119*(1), 91-134.

Bhagwati, J. N., & Desai, P. (1970). *India: Planning for Industrialization*. Oxford University Press.

Bhagwati, J. N., & Srinivasan, T. N. (1993). *India's Economic Reforms*. Ministry of Finance, Government of India.

Bhattacharjea, A. (2003). Competition law and policy in India. *Economic and Political Weekly*, *38*(34), 3600–3607.

Bosworth, B., & Collins, S. M. (2008). Accounting for growth: Comparing China and India. *Journal of Economic Perspectives*, *22*(1), 45–66.

Burgess, R., & Pande, R. (2005). *Do rural banks matter? Evidence from the Indian social banking experiment*. American Economic Review, 95(3), 780–795.

Chamarbagwala, R., & Sharma, G. (2011). Industrial de-licensing, trade liberalisation, and skill upgrading in India. *Journal of Development Economics*, *96*(2), 314-336.

Chatterjee, S., & Subramanian, A. (2023). India's inward (re) turn: is it warranted? Will it work*? Indian Economic Review,* 58 (Suppl 1), 35-59.

Chopra, A., & Collyns, C. (1995). The adjustment program of 1991/92 and its initial results. *OCCASIONAL PAPER-INTERNATIONAL MONETARY FUND*, 15-23.

Chopra, A., Chu, W., & Fratzscher, O. (1995). Structural Reforms and the Implications for Investment and Growth. *OCCASIONAL PAPER-INTERNATIONAL MONETARY FUND*, 54-70.

Chowdary, T. H. (2002). *The emergence of India's information technology industry*. Journal of Services Research, 2(2), 123–145.

Das, A., & Ghosh, S. (2006). Financial deregulation and efficiency: An empirical analysis of Indian banks during the post reform period. *Review of Financial Economics*, *15*(3), 193-221.

Das, D. K., Erumban, A., Aggarwal, S., & Sengupta, S. (2016). Productivity growth in India under different policy regimes. In *The world economy: growth or stagnation?* (pp. 234-280). Cambridge University Press.

Das, S. P. (2003). An Indian perspective on WTO rules on foreign direct investment. *India and the WTO, The World Bank and Oxford University Press, Washington DC*, 141-168.

Das, D. K., & Sagara, R. (2017). *Information technology and productivity: Evidence from Indian manufacturing*. ICRIER Working Paper No. 340.

Das, D. K., Erumban, A. A., & Mallick, J. (2019). Economic growth in India during 1950–2015: Nehruvian socialism to market capitalism. *Journal of Economic Surveys*, 35(3), 926–951.

Das, D. K., Erumban, A. A., Aggarwal, S., & Das, P. C. (2021). *Measuring productivity at the industry level – The India KLEMS database*. Reserve Bank of India.

De Vries, G. J., Erumban, A. A., Timmer, M. P., Voskoboynikov, I., & Wu, H. X. (2012). Deconstructing the BRICs: Structural transformation and aggregate productivity growth. *Journal of comparative economics*, *40*(2), 211-227.

Desai, A. (2006). *India's telecommunications industry: history, analysis, diagnosis*. Sage.

Dholakia, A. R., & Dholakia, R. H. (2022). Disinvestment and Privatization of Central Public Sector Enterprises in India: Need and Progress. In *Studies in International Economics and Finance: Essays in Honour of Prof. Bandi Kamaiah* (pp. 217-234). Singapore: Springer Singapore.

Dossani, R. (2002). Telecommunications reform in India. *India Review*, *1*(2), 61-90.

Drèze, J., & Sen, A. (1995). *India: Economic development and social opportunity*. Oxford University Press.

Drèze, J., & Sen, A. (2002). *India: Development and participation*. Oxford University Press.

Drèze, J., & Sen, A. (2013). *An uncertain glory: India and its contradictions*. Princeton University Press.

Eichengreen, B., & Gupta, P. (2011). The service sector as India's road to economic growth? *National Bureau of Economic Research* Working Paper No. 16757.

Elgin, C., Kose, M. A., Ohnsorge, F., & Yu, S. (2021). Understanding informality, *CEPR Discussion Paper* No. 16497. Centre for Economic Policy Research

Erumban, A. A. (2024). Informality and aggregate labour productivity growth: Does ICT moderate the relationship? *Telecommunications Policy*, *48*(1), 102681.

Erumban, A. A., & Das, D. K. (2012). *Information and communication technology and economic growth in India*. Telecommunications Policy, 36(11), 817–830. https://doi.org/10.1016/j.telpol.2012.06.011

Erumban, A. A., Das, D. K., Aggarwal, S., & Das, P. C. (2019). Structural change and economic growth in India. *Structural Change and Economic Dynamics*, *51*, 186-202.

Evans, P. (1992). *Indian informatics in the 1980s: The changing character of state involvement*. World Development, 20(1), 1–18.

Fabricant, S. (1942). Manufacturing in the national economy. In *Employment in Manufacturing, 1899-1939: An Analysis of Its Relation to the Volume of Production* (pp. 153-168). NBER, New York.

Fan, T., Peters, M., & Zilibotti, F. (2023). Growing like India—the unequal effects of service-led growth. *Econometrica*, *91*(4), 1457-1494.

Fernandes, A. M., Kee, H. L., & Winkler, D. (2022). Determinants of global value chain participation: cross-country evidence. *The World Bank Economic Review*, *36*(2), 329-360.

Frankel, F. R. (1971). *India's green revolution: Economic gains and political costs*. Princeton University Press.

Ghosh, A. (2004). *India's pathway through financial crisis* (No. 2004/06). GEG Working Paper.

Goldar, B., & Kumari, A. (2003). Import liberalisation and productivity growth in Indian manufacturing industries in the 1990s. *The Developing Economies*, *41*(4), 436-60.

Goldar, B. (1983). Productivity trends in Indian manufacturing industry: 1951-1978. *Indian Economic Review*, *18*(1), 73-99.

Goldar, B. (1986). Import Substitution, Industrial Concentration and Productivity Growth in Indian Manufacturing. *Oxford Bulletin of Economics & Statistics*, *48*(2).

Goldar, B. (2004). *Productivity trends in Indian manufacturing in the pre- and post-reform periods*. Indian Council for Research on International Economic Relations (ICRIER), Working Paper No. 137.

Goldar, B., & Renganathan, V. S. (1990). *Liberalisation and efficiency of Indian manufacturing industries*. Economic and Political Weekly, 25(34), M131–M140.

Government of India. (2023). *Viksit Bharat @2047: Vision for India @100*. NITI Aayog.

Gupta, P., Kochhar, K., & Panth, S. (2011). *Banking sector reforms in India: A long journey ahead*. IMF Working Paper No. 11/129.

Trade Reforms, Labour Regulations, and Labour-Demand Elasticities: Empirical Evidence from India

Heeks, R. (1996). *India's software industry: State policy, liberalisation and industrial development*. Sage Publications.

India KLEMS. (n.d.). *India KLEMS database*. Reserve Bank of India

Jat, R., & Ramaswami, B. (2025). The agricultural productivity gap: Informality matters. *Journal of Development Economics*, 103617.

Jha, P., & Parvati, P. (2020). National education policy, 2020: Long on Rhetoric and Short on Substance. *Economic and Political Weekly*, *55*(34), 14.

Joseph, K. J. (1997). *Industry under economic liberalisation: The case of Indian electronics*. Institute for Studies in Industrial Development (ISID), New Delhi.

Joseph, K. J. (2007). *Information technology, innovation system and trade regime in developing countries: India and the ASEAN*. Palgrave Macmillan.

Joshi, V., & Little, I. M. D. (1994). *India: Macroeconomics and Political Economy 1964–1991*. World Bank/Oxford University Press.

Joshi, V., & Little, I. M. D. (1996). *India's Economic Reforms 1991–2001*. Clarendon Press.

Kochhar, K., Kumar, U., Rajan, R., Subramanian, A., & Tokatlidis, I. (2006). India's pattern of development: What happened, what follows? *Journal of Monetary Economics*, *53*(5), 981–1019.

Kohli, A. (2012). *Poverty amid plenty in the new India*. Cambridge university Press.

Kohli, A. (2006). *Politics of economic growth in India, 1980–2005: Part I: The 1980s*. Economic and Political Weekly, 41(13), 1251–1259.

Krishna, K. L., Goldar, B., Aggarwal, S. C., Das, D. K., Erumban, A. A., & Das, P. C. (2018). *Productivity growth and levels: A comparison of formal and informal manufacturing in India* (Vol. 291). Centre for Development Economics, Delhi School of Economics.

Krishna, K. L., Goldar, B., Erumban, A. A., Das, P. C., & Aggarwal, S. C. (2022). Sources of India's post-reform economic growth: an analysis based on India KLEMS database, Economic and Political Weekly, 57(31).

Krueger, A. O. (1975). *The benefits and costs of import substitution in India: A microeconomic study*. University of Minnesota Press.

Krugman, P. (1994). The myth of Asia's miracle. *Foreign Affairs*, *73*(6), 62–78.

Kujur, S. K., & Goswami, D. (2021). National manufacturing policy: A reality check. *Economic and Political Weekly*, *56*(45-46), 20-24.

Kumar, N. (1994). *Multinational enterprises and industrial organization: The case of India*. Oxford University Press.

Kumar, N. (2005). *Liberalisation, foreign direct investment flows and development: Indian experience in the 1990s*. Economic and Political Weekly, 40(14), 1459–1469.

Lewis, W. A. (1954). Economic development with unlimited supplies of labour. *The Manchester School*, *22*(2), 139–191.

Mani, S. (1997). Divestment and public sector enterprise reforms: Indian experience since 1991, Working paper number 272, Centre for Development Studies.

Mani, S. (2001). *Government and innovation: The economic role of government in the promotion of innovation*. United Nations University - INTECH.

Mani, S. (2002). *Government, innovation and technology policy: An international comparative analysis*. Edward Elgar Publishing.

Mawdsley, E. (2023). India's role as a global development partner. In *Routledge Handbook of Contemporary India* (pp. 172-184). Routledge.

McMillan, M., Rodrik, D., & Verduzco-Gallo, Í. (2014). Globalization, structural change, and productivity growth, with an update on Africa. *World development*, *63*, 11-32.

Mehta, P. S. (Ed.). (2006). *A functional competition policy for India*. Academic Foundation.

Ministry of Road Transport & Highways. (2008). *National Highways Development Project: Annual report*. Government of India.

Mitra, Arup (2016). Productivity growth in India: determinants and policy initiatives based on the existing literature. MPFD Working Paper WP/16/08. Bangkok: ESCAP. Available from www.unescap.org/publications.

Mohan, R. (2002). *Small-scale industry in India: Policy, performance and problems*. Reserve Bank of India Bulletin, May 2002.

Mohan, R., & Kapur, M. (2015). Pressing the Indian growth accelerator: Policy imperatives. *Stanford Center for International Development Working Paper No. 494*.

Moreno, A., Pieters, J., & Erumban, A. A. (2014). Formal Sector Subcontracting and Informal Sector Employment in Indian Manufacturing' IZA *Journal of Labour & Development*, 3(22)

Nagaraj, R. (2025). India's premature deindustrialization and Falling investment rate in the 2010s. *World Development*, *191*, 106954.

Nayyar, D., & Nayyar, G. (2024). Made in India: Industrial policy in a changing world. *Journal of Industry, Competition and Trade*, *24*(1), 13.

NITI Aayog. (2020). *National Infrastructure Pipeline report*. Government of India.

Panagariya, A. (1999). The WTO trade policy review of India, 1998. *The World Economy*, *22*(6), 799-824.

Panagariya, A. (2002). *India's trade reform*. In J. Bhagwati & A. Panagariya (Eds.), *India's reforms: How they produced faster growth and poverty reduction* (pp. 103–152). Oxford University Press.

Panagariya, A. (2004). *India in the 1980s and 1990s: A triumph of reforms*. IMF Working Paper WP/04/43. https://doi.org/10.5089/9781451846947.001

Panagariya, A. (2008). *India: The Emerging Giant*. Oxford University Press.

Parekh, B. (1991). *Colonialism, tradition and reform: An analysis of Gandhi's political discourse*. Sage Publications.

Parthasarathi, A. (1987). *Science and technology policy and planning: Lessons from the Indian experience*. Indian Journal of Public Administration, 33(3), 299–312.

Pritchett, L., Woolcock, M., & Andrews, M. (2010). Capability traps? The mechanisms of persistent implementation failure. *Center for Global Development working paper*, (234).

Pursell, G. (1992). *Trade policies in India*. In H. G. Pursell (Ed.), *Trade policy reform: Lessons from five countries* (pp. 127–196). World Bank.

Raj, K. N. (1984). The politics and economics of 'growthmanship'. *Economic and Political Weekly, 19*(24), 965–970.

Rao, M. G. (2000). *Tax system reform in India: Achievements and challenges ahead*. Asia-Pacific Development Journal, 7(2), 59–74.

Rao, M. G. (2019). The Goods and Services Tax: A milestone in India's tax reform. *Economic and Political Weekly*, *54*(7), 16–19.

Reserve Bank of India (RBI). (2005). *Foreign Exchange Management Act: A primer*. RBI Publications.

Rodrik, D. (2013). *The Past, Present, and Future of Economic Growth*. Global Citizen Foundation.

Rodrik, D., & Subramanian, A. (2005). *From "Hindu growth" to productivity surge: The mystery of the Indian growth transition*. IMF Staff Papers, 52(2), 193–228.

Sarkar, K., & Samantroy, E. (2023). New Labour Codes and Implications for Women Workers. *Economic & Political Weekly*, *58*(5), 53.

Shah, M., & Steinberg, B. (2019, May). The right to education act: Trends in enrollment, test scores, and school quality. In *AEA Papers and Proceedings* (Vol. 109, pp. 232-238). 2014 Broadway, Suite 305, Nashville, TN 37203: American Economic Association.

Singh, J. P. (2000). The institutional environment and effects of telecommunication privatization and market liberalisation in Asia. *Telecommunications Policy*, *24*(10-11), 885-906.

Singh, S. R. (2017). Political Economy of Land Acquisition and Resource Development in India. *Political Economy of Contemporary India*, 279.

Stiroh, K. J. (2002). Information technology and the U.S. productivity revival: What do the industry data say? *American Economic Review, 92*(5), 1559–1576. https://doi.org/10.1257/000282802762024502

Summers, L. H. (2016). The Age of secular stagnation: What It Is and what to do about it. Foreign Affairs.

Summers, L. H. 2014. “US Economic Perspectives: Secular Stagnation, Hysteresis, and the Zero Lower Bound.” Business Economics 49(2).

The Conference Board. (2023). *Total Economy Database™ (April 2023)*. Retrieved from https://www.conference-board.org/data/economydatabase/

Tiwari, A., Hogan, T., & O'Gorman, C. (2021). The good, the bad, and the ugly of ‘Startup India review of India’s entrepreneurship policy. Economic & Political Weekly (EPW), 56(50), 45-52.

van Ark, B., & Pilat, D. (2024). Productivity drivers and pro-productivity policies: G20 economies, India and South Korea. *Indian Economic Review*, *59* (Suppl 1), 95-121.

van Ark, B., de Vries, K., & Pilat, D. (2023). *Productivity and policy in the G20 since 1970: Lessons for a productivity revival* (Working Paper). The Productivity Institute. https://www.productivity.ac.uk/research/are-pro-productivity-policies-fit-for-purpose-productivity-drivers-and-policies-in-g-20-economies/

Van Ark, H. H., & Gupta, A. (2011). Measuring the contribution of ICT to economic growth. In *The linked world: How ICT is transforming societies, cultures, and economies* (pp. 9-35). Fundación Telefónica.

Kumar, K., Priyam, M., & Saxena, S. (2001). Looking beyond the smokescreen: DPEP and primary education in India. *Economic and Political Weekly*, 560-568.

Abraham, F., & Schmukler, S. L. (2017). Addressing the SME finance problem. *World Bank Research and Policy Briefs*, (120333).

World Bank. (1991). *India: Industrial policy report*. World Bank.

Appendix Table 1: Pro/anti -productivity policies in post-independent India

Category	Pre-1980s	1980s	1990s	2000s
Institutions & Frameworks				
Institution building	IITs & IIMs; Planning Commission, financial institutions (LIC and IFCI)	Department of Telecommunications; Securities and Exchange Board of India (SEBI),	Statutory power to SEBI, Telecom Regulatory Authority of India (TRAI), Insurance Regulatory and Development Authority (IRDA)	Aadhaar, NITI Aayog
Government capabilities	Central Statistical Organisation (CSO), Indian Administrative Services, Food Corporation of India	Modernising government IT systems and tax administration, decentralisation	E-Governance initiatives; gradual shift from planning to market, reducing the role of government	Right to Information Act (2005); NITI Ayog, e-governance; Goods and Services Tax (GST), Public Financial Management System
Macroeconomic policy	Rupee devaluation (1966), Fiscal expansion and deficit financing (1970s)	Nominal devaluation by 45%; gradual shift to pro-business attitude	Liberalisation of the exchange rate regime, IMF stand-by arrangement; Fiscal and monetary discipline	**F**iscal Responsibility & Budget Management Act (2003), GST
Factor Accumulation				
Physical capital	State-directed (re-) industrialisation; Licence Raj, Five-Year Plans (heavy investment in public sector infrastructure); Discouragement of private investment	New computer policy (1984); emphasis on transport, energy, and power sector; technology development fund for modernising the public sector; Export and import incentives	Opening up of most industries for private investment; Power Sector Reforms (June 1998). National Highway Authority of India; Push to telecom; Shift to public investment, complement private investment (esp. infrastructure)	Special Economic Zones Act (2005); National Highways Development Project (NHDP), 2001; Land Acquisition, Rehabilitation and Resettlement Act (2013); National Infrastructure Pipeline (NIP) (2019); Increased CAPEX spending under Union Budgets (Post-2020)
Human capital	IITs & IIMs; Kothari commission for education expansion (1961) & integrated child development services (1975); less focus on access to basic education and health facilities	National policy on education (1986), aiming at the expansion of schooling and improving adult literacy	Strengthening of IITs and IIMs; DPEP, expansion of vocational training schemes	Expansion of higher education enrolment; Skill India (June 2015); National Education Policy (2020); National Skill Development Mission (2015); SSA Act (2001) and Right to Free Education Act (2010); still less attention to strengthening the quality of education across the board
Technology				
Innovation & technology	Scientific policy resolution (1958); Patents Act restricting patents in the Pharma/chemicals sectors (1970), Electronic Commission (1972)	Foreign technological collaboration schemes (1980s); software export scheme, science and technology policy statement; New computer policy (1984)	Integration of public and private sector research infrastructure (CSIR, NCL, ICT); New Telecom Policy (1999)	Integrated ecosystem and approach to Science, Technology and Innovation (STIP); Start up India (2016), Digital India (2015), National IPR policy (2016); Patents Act amendments for licensing of foreign patents; Digital India (2015)
Industrial policy	Investment licensing / Licence Raj; MRTP Act (1969)	Relaxation of licensing policies (1985); Broadbanding (1986); Phased manufacturing programs in automobiles and electronics.	New industrial policy (delicensing, disinvestment of PSUs, abolition of asset limit under MRTP); Introduction of electronic payments & ATMs	Atmanirbhar Bharat Campaign (“Self-reliant India”); Production-linked incentives (PLI) scheme (2021); National Industrial Corridor Development Programme; National Manufacturing Policy (2011); Make in India Initiative (2014)
Creative destruction	Exit and entry were not promoted / sick industries (the Nationalization Act) in the 1970s	Nationalisation of sick industries / weak incentive for exit	Privatisation and disinvestment of public-sector enterprises (1991–1996); growing recognition of the exit.	Privatisation & Strategic Disinvestment (Post-2000’s); Insolvency and Bankruptcy Code (IBC)

Appendix Table 1: Pro/anti-productivity policies in post-independent India, continues.

Category	Pre-1980s	1980s	1990s	2000s
Markets				
Financial markets	Bank nationalisation 1955- 1969; priority sector lending in 1970s	Cautious deregulation and credit reforms; MODVAT; Second phase of bank nationalisation, 1980	Liberalisation of capital markets; launch of NSE, Banking sector reforms (reduction in CRR, SLR, CAR, entry of private and foreign banks)	Demonetisation of large bank notes (2016); Pradhan Mantri Jan Dhan Yojana; Central Value Added Tax (CENVAT); GST; Opening of equity market for private sector financing; Insolvency and Bankruptcy code (2016), reducing non-productive assets
Product markets	Price and distribution controls (Essential Commodities Act); administered prices for food, fertilizer, and fuel	Gradual easing of price controls in select industries; MODVAT	Liberalisation of product markets; dismantling of industrial licensing	Make in India and Reducing Business agenda aimed at reducing red tape; GST; Production-linked incentives (PLI) scheme (2021); Essential Commodities Act amendments (2020);
Labour markets	Amendments to the Industrial Disputes Act	Rigidity remained	No significant liberalisation of labour	Labour Codes Reform (2020); Industrial Disputes Act (2024) liberalised plant closures and layoffs; Code on Wages (2019).
Competition policy	Monopolies and Restrictive Trade Practices Act (MRTP), 1969. Price and distribution controls; FERA	MRTP regulation loosening (1985/1986); Price and distribution control abolishment; Steady OGL list expansion; Replenishment (REP) licences (1985)	MRTP Act Repeal; Relaxation of government approval for expansion and mergers	New competition policies and acts, replacing MRTP (2009, 2002, 2007-2012); Startup India (2016); Ease of Doing Business Reforms
Internationalisation				
Trade	Import substitution policies, especially for capital goods; Import licensing on all goods	Export and import incentives; Trade liberalisation (capital goods and intermediates); Nominal devaluation by 45%; Replenishment (REP) licences (1985). Still high tariffs and QRs	Liberalisation of capital and intermediate goods imports (1990s), complete abolishment of government restrictions (1991); New Trade Policy (July 4, 1991); Import-Export Policy Reform (Negative List Revision); Devaluation, 1991; Accession to WTO (1995) and compliance with TRIPS; Gradual removal of FDI restrictions (1990s) / FDI liberalisation (August 1992); reduction in tariffs	Abolishment of import licences and reduction in import restrictions for consumer goods; Increase in import tariffs (2020s); BRICS 2006; Special Economic Zones (SEZs) Policy (2000-2009);
FDI	Strong restrictions on FDI; FERA	Selective liberalisation of FDI (tech-intensive); Some approval of foreign collaboration in automobiles, computers, telecom; FERA restrictions remain	Liberalisation of FDI, and an automatic route for FDI in many sectors; up to 51% of FDI allowed in many sectors	Relaxing FDI norms in defence, retail, and aviation (2016); PLI schemes to encourage domestic manufacturing to reduce foreign dependency (2020); Foreign Exchange Management Act (2000)
Migration & Inclusion				
Migration			Overseas migration of IT professionals leads to brain drain, but a remittance boom)	Pravasi Kaushal Vikas Yojana to provide skill training to overseas Indian workers.
Inclusion	Public distribution system	NABARD to extend rural credit programme; IRDP; Jawahar Rozgar Yojana for employment guarantee	Self-employed women's association (SEWA) bank; targeted public distribution system	Greater policy focus on inclusive and sustainable growth (Aadhar, PMJDY, Stand Up India)

Note: The table highlights selected major policies, in line with van Ark et al (2023) typologies, but it is not exhaustive. Given the extensive range of policies implemented over the past 75 years, many reforms may have been omitted. Since assigning some policies to a specific typology is challenging, overlaps may occur.