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Letting the Elephant Dance

Unlocking India's US$500 Billion Export Opportunity

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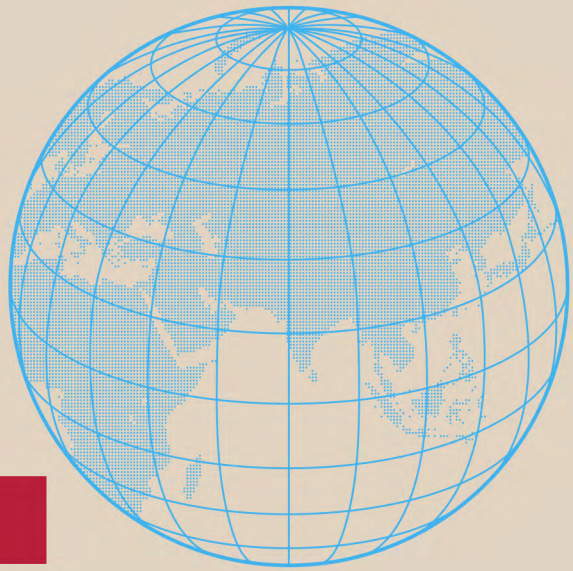

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Letting the Elephant Dance

Unlocking India's US$500 Billion Export Opportunity

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Abbreviations

BCD	Basic Customs Duty
BIS	Bank for International Settlements
CEPII	Centre d'Études Prospectives et d'Informations Internationales
COBOL	Common Business-oriented Language
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
FX	Foreign Exchange
GDP	Gross Domestic Product
GVC	Global Value Chain
HS	Harmonized System
ICT	Information and Communication Technology
IMF	International Monetary Fund
MFN	Most Favoured Nation
MSME	Micro, Small, and Medium-sized Enterprise
OECD	Organisation for Economic Co-operation and Development
PPML	Poisson Pseudo Maximum Likelihood
QCO	Quality Control Order
RBI	Reserve Bank of India
RCEP	Regional Comprehensive Economic Partnership
REER	Real Effective Exchange Rate
TiVA	Trade in Value Added
UNCTAD	United Nations Conference on Trade and Development
WDI	World Development Indicators
WITS	World Integrated Trade Solution
WTO	World Trade Organization
Y2K	Year 2000

Executive Summary

India's post-1991 export surge has lost momentum, reflecting a policy tilt towards protectionism, weaker participation in global value chains (GVCs), and a persistently appreciated Real Effective Exchange Rate (REER). Against this backdrop, the paper proceeds to make five distinct contributions. First, using a Poisson Pseudo Maximum Likelihood (PPML) gravity model estimated on a multi-country, Harmonized System (HS)-level pooled cross-section time series dataset, it quantifies India's unrealised merchandise export potential at approximately US$516 billion in 2022. The estimation is conducted at the product partner level and incorporates exporter applied tariffs, bilateral exchange rate terms, and standard structural controls. Exporter-side tariffs, defined as those levied by a country on its own imports, raise input costs and act as an implicit tax on export competitiveness, distinguishing this approach from specifications that focus on destination market tariffs. Exchange rate terms capture bilateral currency movements affecting price competitiveness, such that an appreciation of the exporter's currency, or a depreciation of the importer's currency, is associated with weaker exports. Second, it localises this gap geographically in East Asia and key neighbouring economies, including China, Pakistan, and Bangladesh, while contrasting corridors of overperformance, such as the Netherlands and the United Arab Emirates (UAE). Third, it identifies, at the product level, areas of strength and weakness that can be leveraged or addressed, particularly in thin-margin, labour-intensive segments. Fourth, it links policy and macroeconomic mechanisms to outcomes, including the reversal of tariff liberalisation, the proliferation of quality control orders (QCOs) that raise input costs, and a persistently appreciated real effective exchange rate (REER), reinforced by strong services receipts and rising remittances. Fifth, using a historically observed export employment elasticity of around 0.3, it translates the trade shortfall into labour market implications, implying a loss of roughly 20 to 24 million formal sector jobs. Finally, it proposes a feasible, workable, sequenced reform path to restore export momentum.

Export Performance and Trends: Successes and Shortcomings

Following the 1991 liberalisation, India's engagement with the global economy deepened significantly. Its share of global exports of goods and services rose manifold from 0.79% in 2001 to 2.56% in 2024, driven by a more than doubling of the export-to-GDP ratio. However, a Mandeng product mapping presents a mixed but revealing picture: "Rising Stars" such as pharmaceuticals, mineral fuels, organic chemicals, iron and steel products, and electrical machinery, where India gained share in expanding global markets, sit alongside "Missed Opportunities" in gems and jewellery, knitted garments, and leather, and "Retreats", reflecting declining market share in slow-growing sectors such as the traditional agrarian and low-value sectors. This trend shows, on the one hand, India's ability to grow in several dynamic sectors. On the other hand, competitiveness in many labour-intensive segments has proved difficult, where exchange rate and input cost pressures act as binding constraints.

Furthermore, a Mandeng-type spatial assessment shows that, since 1991, India has considerably widened its export geography, with stronger penetration in regions where it previously had limited presence, such as Latin America and the Caribbean, the Middle East and North Africa, Sub-Saharan Africa, and fast-growing areas such as East Asia and the Pacific. In South Asia, too, India has increased its export presence faster than the pace of world import demand, although the increase has not been very high, and this picture may have changed in more recent years, with India losing export share. At the same time, India has also expanded its presence in Europe and Central Asia, as well as North America, even though these regions have become relatively less central in world import demand. Overall, the pattern points to diversification towards a broader set of regional markets rather than mere withdrawal, although a wider geographic reach in itself does not necessarily imply deep integration into advanced manufacturing value chains.

Explaining India's Export Performance

Global value chains and East Asia: As is known, GVCs function as conduits that amplify trade volumes, facilitate knowledge diffusion, and encourage diversification. India's backward integration in GVCs, measured as foreign value added in exports, peaked around 2012 before declining to about 17% by 2020, leaving it behind peers and competitors such as Vietnam and Thailand. Drawing the contrast with East Asia is illuminating and offers a clear counterpoint, as

long-standing, state-driven, export-oriented policies have anchored their firms deeply within component trade networks. The absence of such policy direction in India, and the resulting slowdown in GVC integration, coincided with weaker goods export growth and a gradual loss of market share in mid-technology, thin-margin sectors, reducing competitiveness in scale-dependent manufacturing.

The import–export nexus and protection reversal: The Lerner symmetry theorem states that an import tariff functions much like an export tax. This principle is clearly exhibited in our gravity models, which show that a decline in a country's exports is correlated with an increase in its tariffs. The pre-reform period of India is a case that corroborates this hypothesis. Tariffs kept falling from extremely high pre-1991 levels to single-digit rates by 2010. India's exports expanded with greater diversification during the same period. However, this trend has reversed since then. Due to rising simple average Most Favoured Nation (MFN) rates through 2022, alongside a proliferation of other protectionist barriers such as QCOs, both the input and transaction costs have increased. This, in turn, has reduced the volume, variety, and quality of imports, constraining firms' productivity and export potential, and creating a meaningful structural handicap for industries engaged in exporting thin-margin, scale-sensitive products.

Exchange Rate Policy and Export Growth

India's managed float is primarily geared towards maintaining price and exchange rate stability rather than promoting exports directly. The real effective exchange rate (REER) of the rupee has tended to appreciate, driven by pressures associated with strong services exports and sustained remittance inflows. As a result, India faces a continual competitiveness challenge, particularly in low-complexity product categories with thin price margins. Note that these exchange rate pressures are structural and long-term, and are not negated by the rupee's depreciation in 2025-26, which is driven by shocks like the Middle East war and US tariff measures.

Does Booming Services Trade Penalise Merchandise Exports?

India's breakthrough in the information and communication technology (ICT) services sector has delivered large foreign exchange (FX) inflows and secured a substantial, even double-digit, share of the global market. This naturally raises an important question: Does this success generate Dutch disease-like pressures on exports of physical goods, especially manufactured products? Estimates suggest that, even in the absence of other frictions, the services boom alone would lead to an appreciation of the real exchange rate by a few percentage points, driven by FX inflows and rising prices of non-tradables. When this is layered onto the International Monetary Fund (IMF)-assessed REER gaps, it implies an effective real appreciation that weighs on the competitiveness of non-oil goods exports through 2024. The adverse impact is most pronounced in precisely those sectors where margins are thin, products are labour-intensive, and markets are buyer-driven. This is not to imply the services boom needs to be weakened or constrained, but to have complementary policies to prevent collateral damage. This can be achieved by reducing transaction costs, ensuring access to cheaper inputs, and effectively managing the macroeconomy that avoids sustained or entrenched overvaluation.

The Missing Billions: Model Estimates and Employment Implications

Using a PPML gravity model with standard structural variables such as GDP of origin and destination, distance, and controls including demographic factors, contiguity, language, and colonial ties, augmented by exporter-applied tariffs, bilateral currency terms, and crisis dummies, the preferred estimates indicate that actual goods exports in 2022 are less than the model-predicted levels by approximately US$516 billion. India's immediate neighbours, China, Pakistan, and Bangladesh, together account for roughly half the gap of this unrealised potential. Additional underperformance is observed with countries like Japan, the Russian Federation, Germany, the United Kingdom, Israel, and France. Conversely, India has outperformed benchmarks in several markets, including the Netherlands, the UAE, Nepal, Togo, Belgium, South Africa, Mozambique, Oman, Vietnam, and Sri Lanka, which offer useful case studies of what has worked better.

Policy Directions

The main takeaway is that India can significantly expand its goods exports without compromising the gains made in the services sector through tariff rationalisation, stricter standards discipline, high-ambition free trade agreements, and a more export-conducive macroeconomic environment. A practical, time-bound policy sequence emerges from these diagnostics:

- **Rationalise tariffs and standards:** A white paper on trade policy that sets out a clear and time-bound roadmap for aligning tariffs with leading Asian peers should be published. The paper should focus on minimising tariff dispersion, eliminating tariff inversions, and ensuring that QCO is firmly tied to transparent safety and quality objectives. Protections for a few products related to food security and core technology, and the like, must be clearly and transparently explained. The broader architecture of openness must be maintained.
- **Sign high-ambition market-access agreements:** FTAs with individual countries, as well as trading blocks, should be signed and deepened to establish a predictable, rules-based framework. This would help mitigate the deficiencies and fragmentation of an increasingly inward-looking global trading order. FTAs serve as instruments of structured openness, preserving access to key markets and embedding trade within stable institutional arrangements. These agreements can provide clarity on rules of origin, support mutual recognition of standards, and help anchor efficiency-seeking foreign direct investment (FDI) and integration into GVCs. The logic of this approach also supports considering pathways to participation in mega-regional multilateral frameworks such as the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). In this context, a major step was taken in January 2026, when India and the EU signed an FTA that had been nearly twenty years in the making.
- **Focus on an export-enabling macroeconomic environment and trade facilitation:** Steps should be taken to avoid entrenching REER overvaluation while preserving macroeconomic stability. Duty-free and predictable imported-input pipelines should be institutionalised, paying close attention to low-margin sectors (especially Micro, Small, and Medium-sized Enterprises [MSMEs]).
- **Execute a neighbourhood and East Asia pivot:** Normalisation and corridor building with China, Pakistan, and Bangladesh, where modelled gaps in trade potential are the largest, should be prioritised, while leveraging overperformance platforms (the Netherlands and the UAE) for extending trade in their respective vicinities. More generally, a pivot to East Asia is long overdue.

1. Introduction

World trade is beset by uncertainty. In 2024, merchandise volumes rose by 2.8%, outpacing output for the first time since 2017, excluding the post-pandemic snapback, and commercial services grew by 6.8%. Despite higher tariffs and policy uncertainty clouding the 2025 outlook, World Trade Organization (WTO) economists project a smaller but still-positive growth of 2.4% in merchandise trade and 4.6% in services. It is possible that the impact of tariffs and policy uncertainty will be more fully felt in 2026: The WTO projects growth of only 0.5% in merchandise trade volumes and 4.4% in commercial services.

Since the war in Ukraine, global trade has been splintering along geopolitical lines, with trade between rival blocs growing more slowly than trade within them. Conflicts disrupt trade and supply chains, as shocks propagate through production networks, trigger partner rewiring, and still leave non-trivial aggregate losses (Korovkin et al., 2025). FDI in strategic sectors is aligning similarly, likely deepening this split, and growing policy restrictiveness is already diverting flows.

The Trump-era tariffs have amplified these headwinds and significantly increased uncertainty in the global economic outlook. In addition, the situation remains very fluid. As this paper went to press, the US Supreme Court, on February 20, 2026, struck down President Trump's global reciprocal tariffs. The President immediately responded with a new global 10% tariff on all imports. A few days earlier, India and the US had negotiated the framework for an interim trade agreement, which had reduced tariffs on imports from India to 18% compared to 50% earlier. Moreover, product-specific tariffs, including rates as high as 50% on steel, aluminium, and copper, remain in place.

On its part, India has been shifting towards neo-mercantilism over the past decade. In neo-mercantilism, the private sector remains the primary producer and innovator, but the State intervenes strategically to subordinate private interests to national goals, using tools such as subsidies and protection (Helleiner, 2021). India's shift towards mercantilism came much later than China in the mid-1990s, but a little earlier than the US in 2018. "Make in India," launched in 2014, and the push to self-reliance, launched as part of the "Atmanirbhar Bharat" campaign in 2020, deepened the initiative.

Protection has been rising in India over the last decade. By 2022, the simple average MFN applied tariff had moved up to 18%, and by 2019, tariffs on more than one-third of tariff lines exceeded 15%. Although mean tariffs were reduced after 2022, falling to 16.2% in 2024, they remain higher than in 2010 and significantly higher than those of major competitors such as China and Vietnam. Over the last six years, about 4,000 tariff lines, roughly one-third of the schedule, saw an upward calibration of Basic Customs Duty (BCD), the statutory goods import duty charged at the border (Government of India, 2022). Non-tariff measures also surged, with the number of QCOs reaching about 765 by 2024. This policy mix is inconsistent, since an import tax, by raising input costs, also functions as an export tax.

This study is the first to quantify the costly trade-offs of India's neo-mercantilist turn over the past decade, estimating roughly US$500 billion in missing merchandise exports and identifying under-utilisation of major destinations, notably China and other Asian markets, including neighbouring ones. The implied opportunity cost is substantial, on the order of 24 million potential higher-wage, formal jobs forgone, set against youth unemployment of about 12%.

The paper discusses long-term, structural issues and is not intended to quantify gains or losses arising from the constantly shifting tariff goalposts or world trade uncertainties, such as those arising from the Middle East conflict. Rather, it assesses India's trade performance in a comparative, intertemporal context, based on fundamental determinants of export performance.

The paper is organised as follows: Section 2 maps India's export performance and patterns, highlighting product and market hits and misses. Section 3 explains the drivers of export outcomes by linking policy and macroeconomic settings to competitiveness. It also situates India in GVCs alongside East Asia and sets out the import and export nexus and the reversal of protection, including the roles of MFN tariffs, QCOs, FTAs, and the REER. Section 4 discusses how India's services success penalises merchandise export trade. Section 5 quantifies the missing exports and foregone jobs, using a PPML gravity model on HS-level bilateral data to locate under-realised markets, then applying export employment elasticities to infer forgone formal jobs. Section 6 turns to policy directions,

drawing lessons from past success and setting out a practical programme to lower trade costs and raise competitiveness, including tariff and standards rationalisation, deeper FTAs, coordinated REER management with trade facilitation, and targeted market access in nearby Asian corridors. While trade in services has been resilient, and India holds a strong share in this trade, that is not the paper's main focus.

2. Export Performance and Patterns: The Hits and the Misses

The data show a strong correlation between India's export performance and overall economic growth. Following the decisive break in 1991, exports of goods and services rose from 8.5% of GDP to a peak of 25.4% in 2013. Average annual GDP growth was 5.4% between 1991 and 2002, and 6.7% between 2002 and 2012 (Figure 1).

This strong correlation supports the view that exports have been a central driver of India's growth: The export-to-GDP ratio rose from 14.26% in 2002 to 24.53% in 2012, alongside an acceleration in average GDP growth from 5.39% during 1991–2002 to 6.67% during 2002–2012; although global exports also expanded after 1991, India's performance after 2001 was markedly stronger, with its share of world exports of goods and services rising from 0.5% in 1980 to 0.79% in 2001 and further to 2.56% by 2024 (Table 1). Note that this aggregation reflects a near-stagnation in the share of goods in global exports over the last decade, at around 1.6 to 1.8%. On the other hand, commercial services continue to gain global market share, which explains the steady rise in India's overall share in global exports to 2.56% by 2024.

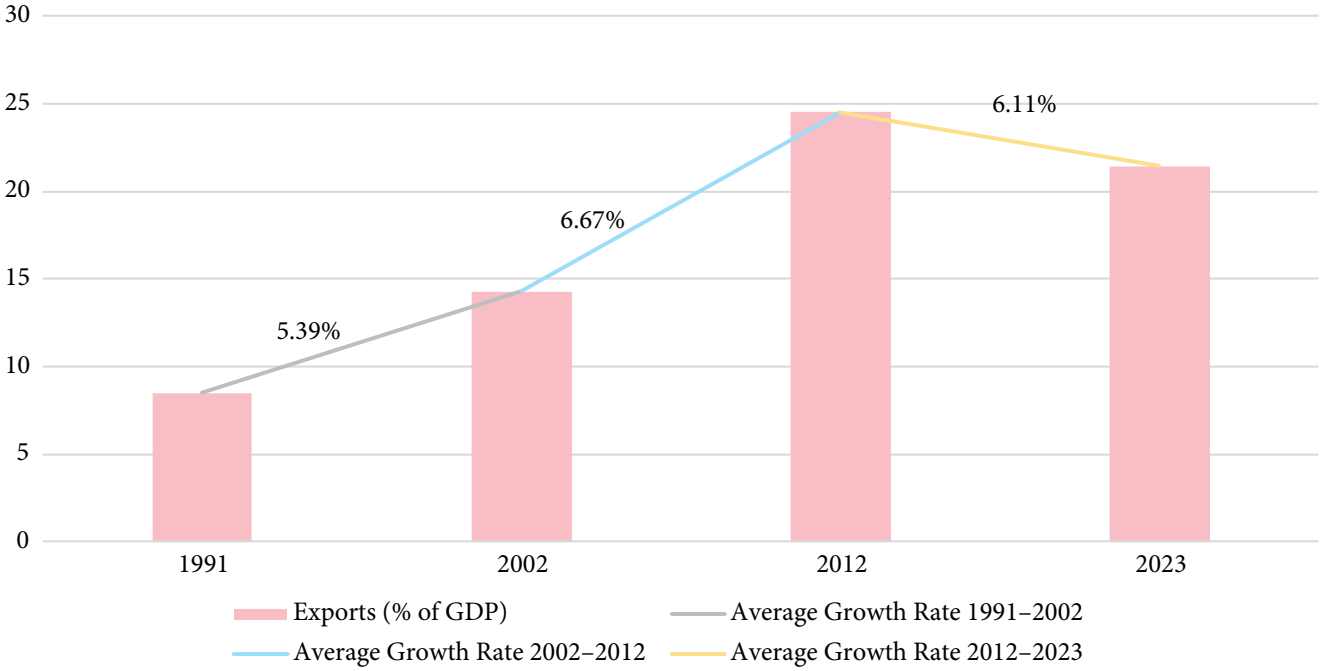
Table 1: India's Goods and Services Export Performance

Year	Total Exports (in US$ Billions)	Global Export Share (Per cent)
1980	11.44	0.50
2001	60.96	0.79
2024	827.41	2.56

Source: World Bank; World Development Indicators Database.

A useful framework for assessing export performance is Mandeng's product mapping, which classifies sectors as "Rising Stars," "Falling Stars," "Missed Opportunities," and "Retreats" based on changes in a country's and the world's export shares (Mandeng, 1991).

Figure 1: India Exports (Per cent of Gross Domestic Product) and Average Gross Domestic Product Growth Rates



Source: World Bank; World Development Indicators Database.
Note: GDP = gross domestic product; avg = average.

Table 2: Mandeng's Specification Matrix

	Country Gaining World Export Share	Country Losing World Export Share
World Demand Increasing	Rising Stars	Missed opportunities
World Demand Decreasing	Falling Stars	Retreats

Source: International competitiveness and specialization by Mandeng, 1991, CEPAL Review, 45, 25–40.

This pattern has unfolded in India over the past three decades, with the mapping revealing a clear divergence between dynamic gains and structural retreats (Table 3). The "Rising Stars" category, which includes, among others, pharmaceuticals, mineral fuels, iron and steel products, and electrical machinery, highlights India's growing competitiveness in sectors where global demand is also expanding. Cursorily, this signals a gradual shift in the country's exports towards higher-value, technology-intensive, and resource-based goods. In contrast, sectors such as organic chemicals, iron and steel, and cereals fall into the "Falling Stars" category. In these cases, India's share of global exports has increased despite a decline in world demand, indicating a growing concentration in markets that may not sustain long-term growth.

Particularly noteworthy is the "Missed Opportunities" category, which includes gems and jewellery, as well as labour-intensive sectors such as knitted garments and leather products. Here, strong global demand contrasts with India's shrinking presence, pointing to eroding competitiveness, a heightened risk of falling behind in rapidly evolving global value chains, and a significant loss of potential employment. Meanwhile, traditional export sectors such as non-knit apparel, footwear, cotton, tea and coffee, spices, and raw hides fall into the "Retreats" category, reflecting a relative withdrawal from low-value, slow-growing segments. While this shift may appear rational from a structural transformation perspective, given the limited productivity gains in these sectors, their labour absorption potential means they cannot be entirely disregarded.

Taken together, this presents a dual narrative: India is advancing across several expanding global segments, while its diminishing presence in others reveals underlying policy and structural gaps that must be addressed to secure its position as a dynamic and diversifying export economy.

Table 3: India's Product-wise Merchandise Exports (Per cent of India Exports) and World Exports (Per cent of World Exports), 1991 vs 2023[1]

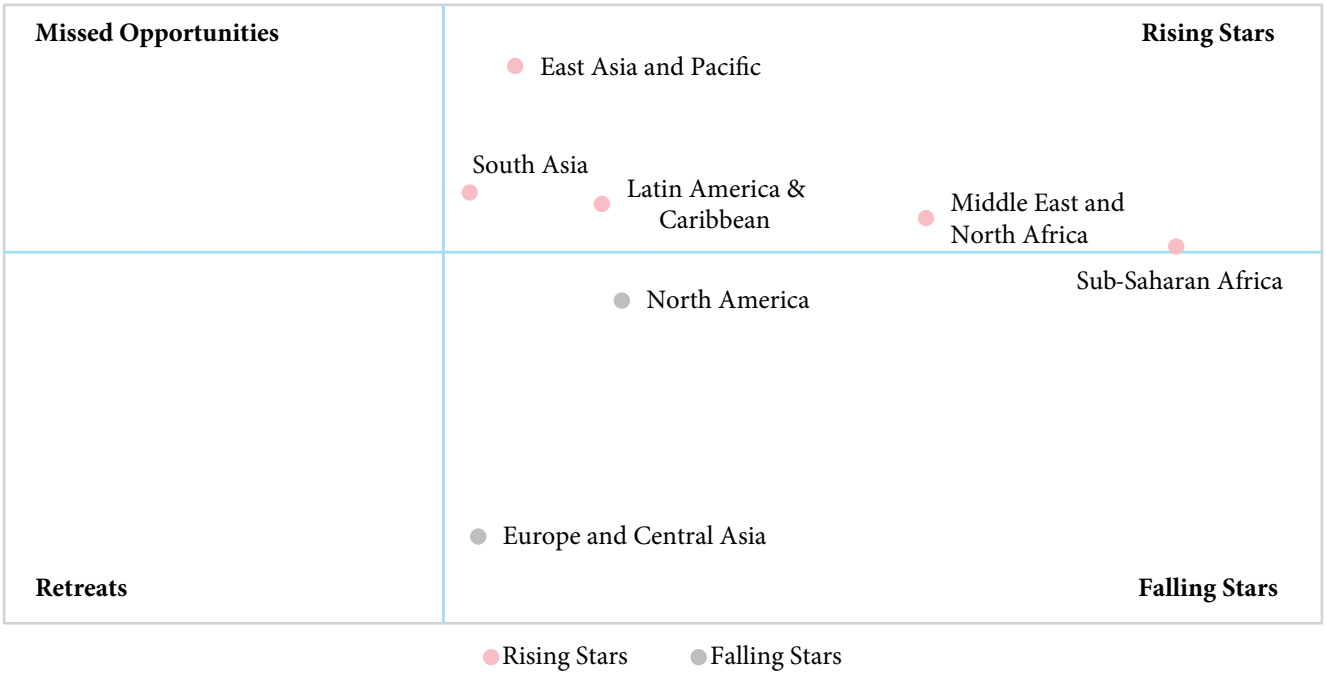
Rising Stars				
Sector (The First Two Digits are Product HS Codes)	**India's Share 1991**	**India's Share 2023**	**World's Share 1991**	**World's Share 2023**
27. Mineral fuels, oils, and distillation products; bituminous substances and mineral waxes	2.37	20.71	1.49	4
73. Articles of iron or steel	1.43	2.26	1.65	1.7
30. Pharmaceutical products	2.51	4.96	0.81	3.76
85. Electrical machinery and equipment, including parts, sound and TV recorders, and accessories	1.94	7.51	11.98	14.56
76. Aluminium and aluminium products	0.77	1.7	1.03	1.04
39. Plastics and articles thereof	0.46	1.68	2.67	3.08

[1] India's share refers to the share of a given HS 2-digit product in India's total merchandise exports (India exports of product k ÷ India's total exports), while "world share" refers to the share of that product in total world merchandise exports (world exports of product k ÷ total world exports). This presentation highlights shifts in India's export composition alongside changes in the global weight of each product between 1991 and 2023. For the original Mandeng-style competitiveness measure based on India's product-specific world market share (India exports of product k ÷ world exports of product k), see Appendix Table B–1.

Falling Stars				
Sector	**India's Share 1991**	**India's Share 2023**	**World's Share 1991**	**World's Share 2023**
84. Nuclear reactors, boilers, machinery, mechanical appliances, and parts	2.88	6.77	15.82	11.4
87. Vehicles (excluding railway or tramway rolling stock) and their parts and accessories	2.42	4.83	11.27	8.29
29. Organic chemicals	1.86	4.51	2.35	2.09
72. Iron and steel	1.47	2.74	2.29	1.95
10. Cereals	2.06	2.62	1.04	0.69
Missed Opportunities				
Sector	**India's Share 1991**	**India's Share 2023**	**World's Share 1991**	**World's Share 2023**
63. Other made-up textile articles, sets, worn clothing, and rags	1.85	1.25	0.23	0.34
61. Knitted or crocheted apparel and clothing accessories	3.03	1.54	0.86	1.02
26. Ores, slag, and ash	3.62	0.93	0.71	1.44
42. Leather articles, saddlery, harness, travel goods, handbags, and animal gut products (excluding silk-worm gut)	3.05	0.57	0.32	0.45
08. Edible fruit, nuts, and citrus/melon peels	1.92	0.35	0.59	0.63
71. Pearls, precious stones, metals, and jewellery (including imitation); coins	15.37	7.75	7.17	11.36
23. Food industry residues, waste, and prepared animal feed	2.11	0.7	0.43	0.5
Retreats				
Sector	**India's Share 1991**	**India's Share 2023**	**World's Share 1991**	**World's Share 2023**
62. Apparel and clothing accessories, not knitted or crocheted	9.3	1.82	1.31	0.95
64. Footwear, gaiters, and related parts	2.64	0.59	0.71	0.63
41. Raw hides and skins (excluding fur skins) and leather	1.66	0.1	0.32	0.07
52. Cotton	6.29	1.51	0.64	0.22
03. Fish, crustaceans, molluscs, and other aquatic invertebrates	3.24	1.43	0.91	0.55
09. Coffee, tea, maté, and spices	4.12	1.01	0.35	0.27
57. Carpets and textile floor coverings	2.92	0.42	0.14	0.08

Source: World Integrated Trade Solution; authors' calculations.
Note: HS = Harmonized System.

Figure 2: Region-wise Exports of Merchandise, 1991 vs 2023



Source: World Integrated Trade Solution; United Nations Conference on Trade and Development; authors' calculations.

India lags in "network products" (about 10% of exports in 2018), parts-and-components-intensive goods produced in vertically fragmented supply chains (for example, electronic machinery), with FTA design and trade costs being likely constraints (Veeramani & Dhir, 2024).

In terms of market patterns, India's export geography has shifted markedly, showing "Rising Stars" in Latin America and the Caribbean, the Middle East and North Africa, South Asia, Sub-Saharan Africa, and East Asia and the Pacific (Figure 2). In each of these regions, India's share of regional imports increased while the region's share in world imports also rose, signalling diversification and new market opportunities. North America is a "Falling Star," since India's share edged up in a region whose weight in world imports declined. Europe and Central Asia are also "Falling Stars," reflecting a small rise in India's share alongside a sharp drop in the region's world import share. No region falls into "Missed Opportunities" or "Retreats" on these metrics for 1991 to 2023. Overall, the pattern indicates that India is extending its reach into newer, faster-growing markets while simultaneously strengthening its foothold in the more mature, slower-growing regions of Europe and North America. Note that these data compare 1991 and 2023, and so do not capture shifts in more recent years, where, for example, India has lost market share in many South Asian countries.

3. Explaining India's Export Performance

After identifying where India is gaining and lagging across products and markets, the focus shifts to explaining the underlying mechanisms through two key factors: the country's role in cross-border production networks and the import–export link that affects input costs. Integration into East Asian supply chains brings scale, technology transfer, and changes in product mix. At the same time, tariffs, QCOs, duty inversions, logistics, standards, and the real exchange rate shape prices and incentives. The analysis then links India's position in the value chain to the policy settings that determine access to inputs and overall export outcomes.

3.1 Trade and Related Reforms are Central to India's Export Performance

Given the heavy regulation of the economy before 1991, relaxing controls was likely to have a large impact. In the wake of the 1991 crisis, major steps included a roughly 19% devaluation of an overvalued rupee; tariff cuts from abnormally high levels, with average duties on intermediate products falling from about 123% before the crisis to around 30% by the mid-1990s; the gradual removal of quantitative restrictions on imports; and export promotion

through flexible exchange rates and current account convertibility. India's exports took off after 1991.

Services exports have been a major success, rapidly catching up with goods in dollar terms and driving India's rising share in world exports. This performance reflects strong human capital in technology and knowledge-based industries, the late 1990s demand for Common Business-Oriented Language (COBOL) programming skills during the Year 2000 (Y2K) problem, and the emergence of digital services with the ICT revolution.

A critical feature of merchandise trade is the rise of value chains. Beyond boosting trade growth and creating jobs, GVC participation raises productivity and fosters diversification across products and partners. During the period of accelerated globalisation, GVC trade rose much faster than world trade: between 1995 and 2008, backward participation in value chains increased from 19.5% to 26.2%, and forward participation from 15.7% to 19.3% (WTO, 2023). However, India's participation in GVCs remains weak.

Globally, backward and forward participation indicators, which had flattened after the global financial crisis, have edged up since 2021. India's share of foreign value added in gross exports, a measure of backward GVC participation, peaked at 25% in 2012 alongside strong export growth, then fell to 17% by 2020. By comparison, in 2020, participation shares were 48% for Vietnam and 31% for Thailand (Organisation for Economic Co-operation and Development [OECD], 2025).

Another way to put India's export performance in perspective is to look at China. In 2023, India's export value reached US$773 billion, contributing 21.4% to its GDP. China had the same export value of US$773 billion in 2005, but exports constituted as much as 33.4% of its GDP (Table 4). In the crudest of terms, we can say that India trails China by roughly 18 years on this measure. While its exports of goods and services are already substantial, they have not yet produced the kind of broad-based, export-driven momentum that underpinned China's rapid rise. Moreover, China's strategy is centred on goods-led expansion, whereas India's growth has been more gradual and services-led, with implications for job creation discussed later in this paper.

Taking the China comparison further, exports formed only 21.4% of India's US$3.6 trillion GDP in 2023. By contrast, in 2007, when China had the same level of GDP as India, exports fuelled almost 35% of China's GDP. Overall, India's growth model has relied more on protection and the domestic market than its East Asian peers (Kathuria, 2025a).

Table 4: Comparison of Export Value, Gross Domestic Product, and Export (Goods and Services) Shares for India and China

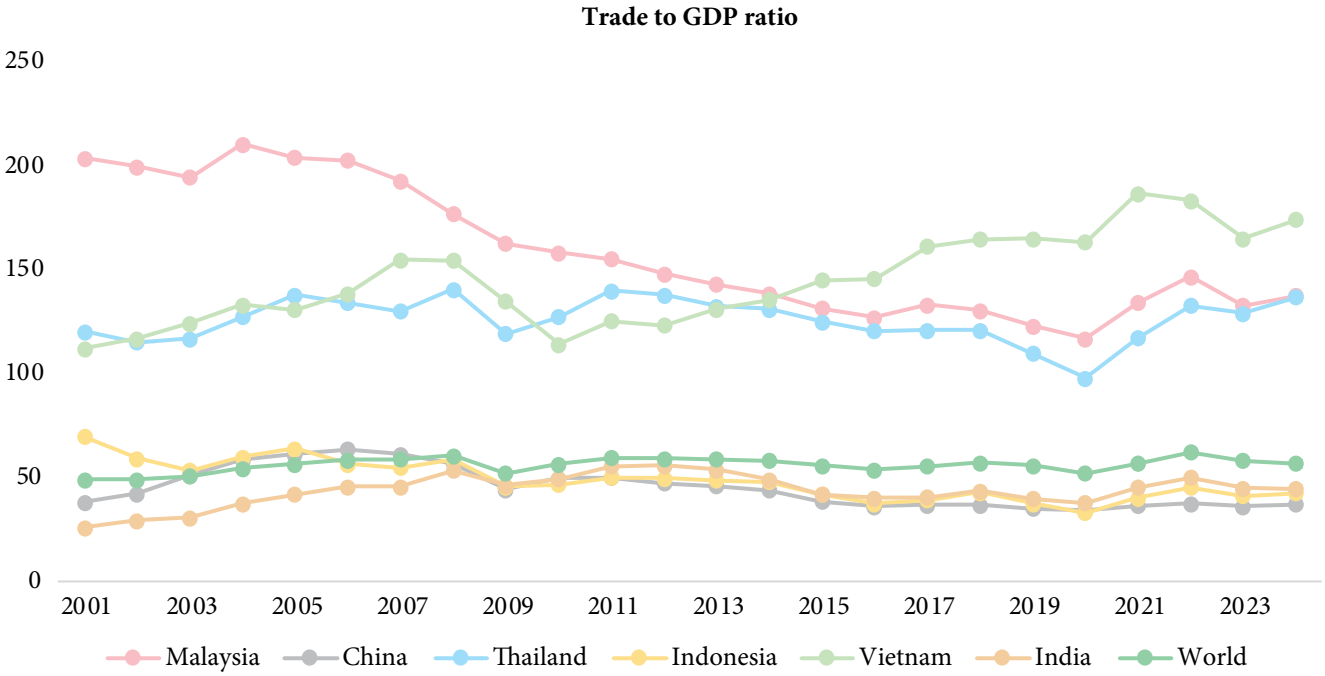
	Export or GDP Value (current US$)	Exports (Per cent of GDP)
India's exports	773 billion (2023)	21.4
China's exports	773 billion (2005)	33.4
India's GDP	3.64 trillion (2023)	21.4
China's GDP	3.6 trillion (2007)	34.9

Source: World Bank.

Note: GDP = gross domestic product.

The picture is even more stark when comparing with Southeast Asian countries (Kathuria, 2022). Thailand, Indonesia, and Malaysia peaked at high or very high trade-to-GDP ratios, ranging from 88 to 220%. Vietnam, a major export success story in the 21st century, had a trade-to-GDP ratio of 187% in 2021 (Figure 3). By contrast, India's trade orientation appears to have peaked too early: after more than doubling in the decade after 2001, from 26 to 56%, India's trade-to-GDP ratio has levelled off in the 40 to 45% range over the last decade. At its peak in 2006, China's trade ratio was 64%, though it has fallen sharply to 37% in 2024, reflecting trade tensions and a rebalancing towards the domestic market.

Figure 3: Trade in Goods and Services (Per cent of Gross Domestic Product)



Source: World Bank Data 360 database.

Note: GDP = gross domestic product.

3.2 The Import–Export Nexus and India's Protection Reversal

Imports are not just a substitute for domestic output, but also act as catalysts for export expansion by providing intermediate goods and capital equipment, facilitating the spread of technology and increasing competitive pressure on the domestic economy. With global supply chains becoming the main channel of world trade, the line between import dependence and export dynamism is increasingly blurred. As a result, imports form a foundation of export competitiveness: Imported components lower production costs and enable firms to scale up their exports. Evidence from Indian firms shows that competition from Chinese imports pushes producers to upgrade product quality, while easier access to imported inputs encourages firms to introduce new products, even if these new lines are initially less productive (Orr and Tabari, 2025). More broadly, imports embody technology and expand product variety, thereby driving productivity growth. This import-led innovation helps diversify domestic capabilities, while import competition pushes existing firms to improve productivity and innovate.

Abba Lerner's theorem (1936) establishes the equivalence between an ad valorem import tariff and an export tax in a general equilibrium setting with two goods and two countries. Complementing the import-to-export channel, reducing buyer and seller matching frictions that expand firms' access to foreign buyers causally improves quality and productivity (Atkin et al., 2017). Tariffs tax imports by raising input costs and by shifting resources towards inefficient domestic production, akin to an export tax. Moreover, import tariffs indirectly penalise exports by appreciating the exchange rate, that is, by raising the value of the domestic currency.

Firm-level studies find a robust positive relationship between imported input use and export outcomes. Research on Chinese manufacturers shows that firms which increased the value and variety of imported intermediates significantly raised the value and scope of exports (Feng et al., 2012). Using China's early-2000s tariff cuts as a natural experiment, the study estimates that a 1% increase in a firm's imported input value lifted its exports by about 1.35%. The exports are larger when the inputs are from economically advanced countries, highlighting how access to superior quality and embedded knowledge strengthens the benefits of import-led export growth.

In this respect, China can hardly be called an exception. Further evidence from countries ranging from Hungary to India shows that import liberalisation, particularly through lower tariffs on intermediate goods, often precedes surges in export diversification and growth (Manghnani, 2020). A firm-level study for

India also finds that reducing input tariffs helped limit politically driven misallocation of resources (Jävervall and Khoban, 2025). India's past trade performance aligns closely with these insights. Average tariffs were steadily reduced from 81% in 1990 to 29% in 1997, and further to 9% by 2010 (World Bank, 2025a). Over the same period, goods trade rose from 11% of GDP in 1988 to a peak of 43% in 2012 (World Bank, 2025b), while total trade as a share of GDP increased from 13% to 56% (Kathuria, 2025b).

The broader lesson is that firms and industries perform better in export markets when they can access efficient global inputs. Evidence from Indonesia points to a causal link between imported inputs and higher productivity, followed by export growth, with access to a greater variety of imported inputs having a stronger impact on export performance than volume alone (Pane and Patunru, 2023). In the same way, a study on France shows that firms using more foreign-sourced and diversified inputs export a wider range of products to more destinations, and that doubling the variety of imported inputs raises total factor productivity by about 4%, helping firms overcome entry costs and expand exports (Bas and Strauss-Kahn, 2014). High-quality and cheaper imported inputs create a strong foundation for export performance across different contexts.

However, this trend of gradual tariff reduction was reversed in the mid-2010s. Between 2015 and 2022, India's simple mean tariffs rose from 13.4% to 18.1%. A specific policy to increase tariffs under the "Make in India" initiative was articulated in the 2018–2019 budget, marking a clear shift from the approach of the previous three decades. Although mean tariffs were reduced after 2022, falling to 16.2% in 2024, they remain higher than in 2010 and significantly higher than those of major competitors such as China and Vietnam (Table 5). India's tariff reversal was accompanied by a fall in the goods-trade-to-GDP ratio, from 43% in 2012 to 29.2% in 2024. Over the same period, Vietnam's ratio rose from 116.7 to 164.2%, while that for lower-middle-income countries fell much less than India's, from 48.4% to 43.8%.

Since 2019, India has also seen a surge in QCOs, mandatory standards for both foreign and domestic producers. While standards safeguard public health and safety, they can also shield domestic firms from foreign competition, raising non-tariff barriers. By the end of 2024, QCOs covered about 6% of HS-6 tariff lines, corresponding, based on 2019 trade flows, to roughly 11% of total exports and imports (Prabhakar, 2025). About two-thirds of the covered lines target products that are net imports. The QCO surge has encouraged lobbying and led to significant delays in import clearances, suppressing imports without improving export performance.

Table 5: Most Favoured Nation Tariff Rates, Simple Average (Per cent)

Country	2002	2009	2018	2024
China	12.37	9.86	9.74	7.5
India	29.0	14.03	17.14	16.2
Vietnam	16.05	10.39	9.51	9.5

Source: World Integrated Trade Solution; World Tariff Profiles.

3.3 Evolution of Exchange Rate Policy and Export Growth

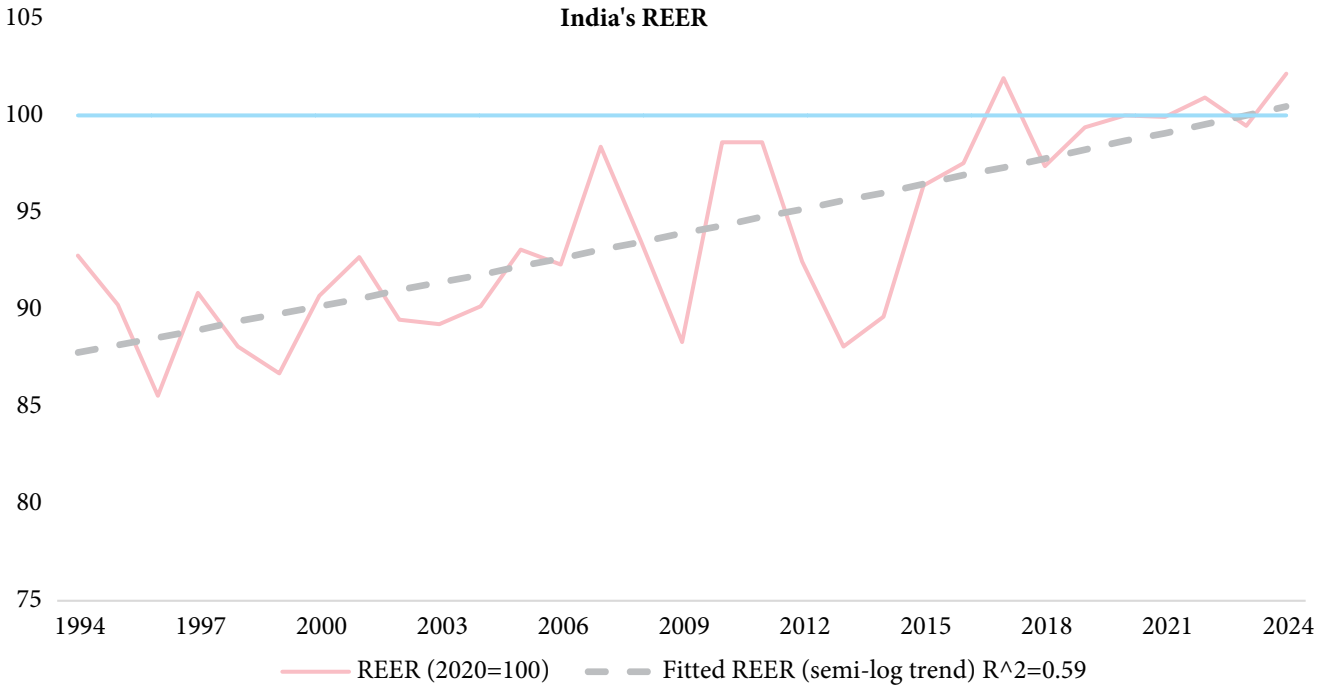
India has shifted from the distortionary dual exchange rate system of the early 1990s to a managed float, with market forces largely guiding the rupee's direction,[2] and all current account transactions are now unrestricted. This regime has clearly supported trade openness. Export performance, however, hinges on the REER, the nominal rate adjusted for inflation differentials between India and its trading partners. For India, the long-run export elasticity with respect to the REER is estimated at about 0.6% (Devarajan et al., 2023), so a 10% real depreciation is associated with roughly a 6% rise in real exports.

India's real exchange rate has increasingly tended to act as a drag on export performance, with a persistent tendency to appreciate over time (Figure 4). Import-protection policies, along with the Reserve Bank of India (RBI) policy objectives, may have kept the currency more appreciated than warranted. Recent IMF equilibrium real exchange rate estimates also suggest an appreciation of roughly 9% in 2023–2024.[3] India's dominance in ICT services exports since 2000 has added upward pressure on the currency, further weighing on goods export performance, which we analyse in greater detail in the next section.

[2] Disagreements between the IMF and the RBI have persisted since 2023 on the classification of the exchange rate management regime. The IMF changed the classification from "managed float with no significant predetermined path" to a "stabilized arrangement" in 2023 because there were significant foreign exchange interventions to keep it stable against the US dollar.

[3] The IMF staff assesses the REER gap to be in the range of −12.7 to −6.1%, with a midpoint of −9.4%, for fiscal year 2023–2024 in its global External Sector Report of 2024.

Figure 4: Real Exchange Rate is Appreciating Over Time



Source: Real broad effective exchange rate index for India from the Bank for International Settlements, series RBINBIS (Index, 2020 = 100, monthly, not seasonally adjusted).

Note: REER=real effective exchange rate.

India's experience stands in contrast to that of East Asian economies, which systematically and consistently maintained competitive, often undervalued, exchange rates to support export-led growth. Since the early 1990s, India has operated a managed float, with the RBI prioritising price and financial stability rather than export promotion. When this approach is combined with large and sustained capital inflows, it has led to persistent appreciation pressures on the rupee, thereby limiting the scope for exchange-rate-based export promotion.

4. Does Booming Services Penalise India's Merchandise Exports?

India's ICT service exports began to take off in the mid to late 1990s, when the Year 2000 Problem, more commonly known as the "Y2K bug", created a sudden, urgent, and substantial demand for scarce COBOL programmers. What started as a US$5 billion opportunity expanded to about US$160 billion by 2023, transforming an initial one-off demand into sustained outsourcing to lower-cost Indian workers. India's software exports are largely insensitive to distance and instead increase with English-language compatibility and diaspora networks, whereas goods exports face the usual distance penalty, highlighting that services and goods encounter different trade frictions (Tharakan et al., 2005). India's market share has remained above 12% in a global market that reached about US$1 trillion in 2023.

Can the boom in ICT services be an unmixed blessing? Akin to a resource discovery, the surging sector attracts capital and talent, drawing them away from the rest of the economy. If sustained, it can lead to an appreciation of the real exchange rate, the relative price of domestic to foreign goods in a common currency, through two channels: first, greater foreign earnings push up the nominal exchange rate; second, recipients spend those earnings on non-tradable sectors, such as real estate and personal services, raising domestic prices and costs for everyone. This phenomenon has come to be known as the "Dutch disease."

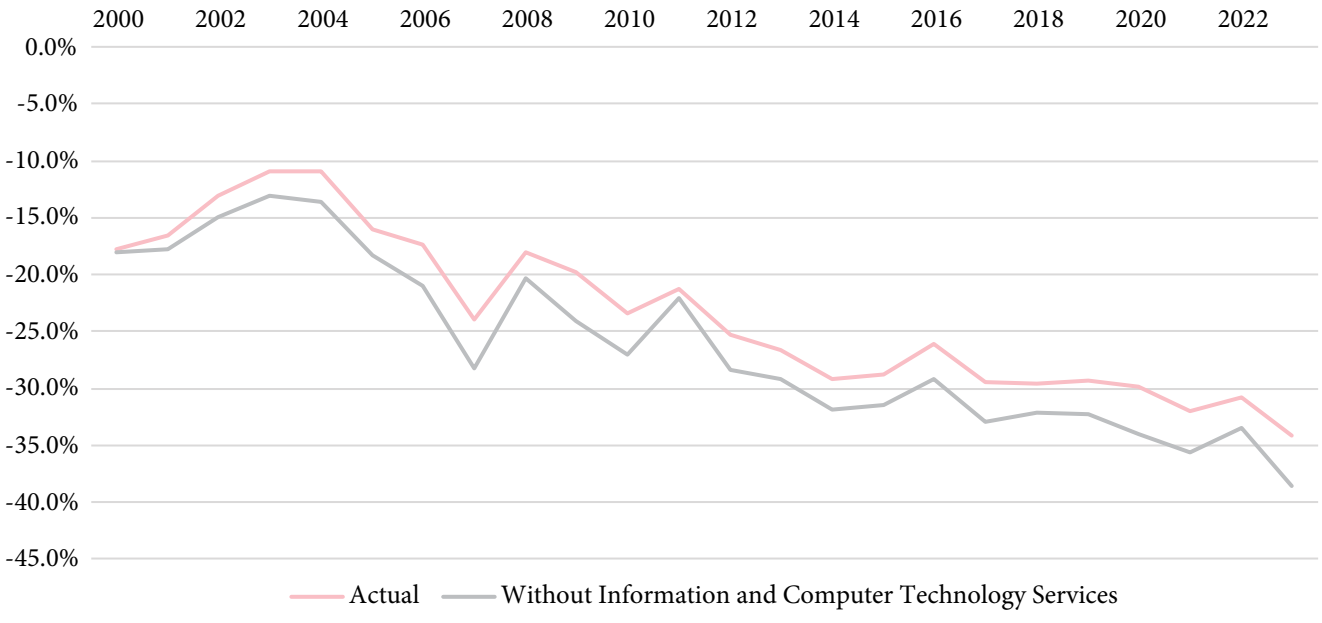
The real exchange rate is influenced by the RBI through its exchange rate policy and inflation targeting. The RBI aims for 5–6% inflation through monetary policy, a goal it has largely achieved. In principle, the RBI smooths fluctuations with FX interventions while allowing for a market-determined "floating" exchange rate. However, in 2023, the IMF argued that the RBI's FX interventions went beyond what was needed to correct "disorderly market conditions"

and reclassified India's exchange rate regime as "stabilised management" since October 2022, a view contested by the RBI (IMF, 2023). Over the years, FX management has become more complicated with the growth of the offshore rupee market, which has an estimated daily turnover of about US$122 billion, compared with US$23 billion onshore. The IMF also estimated that, in 2024, the rupee's real exchange rate was 4.8% stronger than fundamentals would suggest (IMF, 2025).

The 4.8% misalignment of the rupee's real exchange rate reduces external demand, since Indian products become more expensive and exporters' profit margins (net of imported inputs) are squeezed. Aggregate evidence for 1960 to 2007 shows that REER appreciation reduces India's merchandise exports, with the short-run elasticity easing from −0.23 in 1960 to 2001 to −0.185 in 2002 to 2007, and the long run from −0.47 to −0.378 (Veeramani, 2008). Based on a non-oil export elasticity of 1.1 with respect to the real exchange rate (Chinoy & Jain, 2019), a 4.8% real appreciation of the rupee implies a drag of about 5% on non-oil export volumes.

A misaligned exchange rate, as assessed by the IMF in its External Sector Reports, reflects how the real exchange rate compares with economic fundamentals and staff judgments. But this is not the only factor that can dampen goods exports. Booming ICT services exports have also created persistent appreciation pressures, independent of IMF-assessed misalignments. More broadly, the real exchange rate is shaped by fundamentals such as productivity differentials, the net foreign liabilities position, terms of trade, and real interest-rate differentials (Raut, 2021). Higher domestic productivity, favourable terms-of-trade shocks, and higher domestic real interest rates tend to appreciate the real exchange rate, whereas a heavier net external debt burden tends to depreciate it. Counterfactually, if the boom in ICT services exports had been absent,[4] India's external debt burden would have been larger, putting downward pressure on the exchange rate instead of the appreciation pressures observed.

Figure 5: Counterfactual Evolution of External Wealth Ratio to Gross Domestic Product



Source: External Wealth of Nations Database (2026); World Development Indicators Database; World Bank for Information and Communication Technology Service Exports.

Note: External Wealth equals the Net International Investment Position. GDP = gross domestic product.

[4] India's service imports have not offset the rise in exports. India's net export of services as a ratio of GDP have consistently stayed in 3–4% range since 2008.

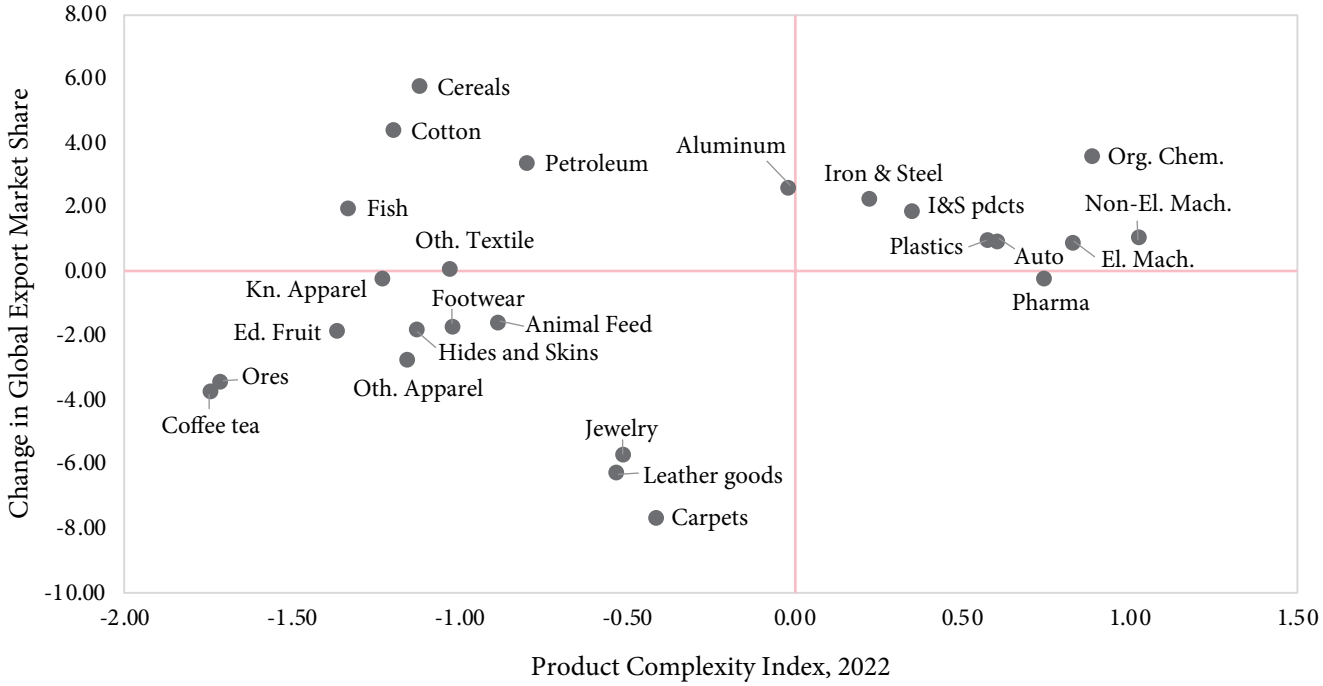
In the absence of ICT service export receipts, India's net external investment position would have been worse by 5% of GDP in 2023 (Figure 5). Taken together with the estimated coefficient of net financial assets on the real equilibrium exchange rate at 0.6,[5] a real appreciation of 3% is caused by the ICT service export alone, smaller compared to the estimated misalignment of 4.8%.

Stacking the IMF econometric estimate of actual real exchange rate misalignment of 4.8% with the counterfactual real appreciation of 3%, there is a misalignment of 7.8%. Using the real non-oil export elasticity of 1.1 (Chinoy & Jain, 2019), India's non-oil exports are estimated to be lower by 9%.

There has been a correction in the real exchange rate since the beginning of the year, aided by a nominal rupee depreciation as well as a declining inflation rate. The 40-currency REER index depreciated by about 6% between January 2025 and November 2025.[6] Further nominal depreciation has occurred since November. India's external position now has to contend with a 50% tariff imposed by the US, India's top export destination. The RBI has widened the band within which it intervenes in the FX market to accommodate heightened uncertainty.

Overall, the combined effect of exchange rate misalignment and appreciation pressures from booming ICT services exports created an approximate 9% drag on non-oil goods exports at the end of 2024, particularly hurting export performance in low-margin products and low complexity products (Figure 6). These goods are manufactured competitively by many countries, so intense global competition keeps margins thin and makes them especially vulnerable to real appreciation.

Figure 6: Market Share Decline (1991–2023)



Source: Market shares computed from the World Bank's World Integrated Trade Solution database. Product Complexity Index from Massachusetts Institute of Technology's Observatory of Economic Complexity.

[5] The coefficients vary between 0.3 to 0.6, the latter being the best performing model.
[6] Based on the RBI's indices of 40 currency trade-weighted rates 2015–2016 = 100, between December 2024 and August 2025.

Given the wider social implications of unemployment, especially among the youth, a policy response may be in order. One element could be a more relaxed approach by the RBI when the rupee depreciates. Another is a concerted push to cut transaction and import costs, especially for small firms and low-margin sectors such as garments, footwear, and toys.

In addition to ICT services exports, India has also emerged as the top recipient of worker remittance inflows, which reached US$120 billion in 2023. These remittances are inelastic and resilient to global shocks (Ratha et al., 2023). The surging remittance inflows exacerbated the real appreciation tendency of the rupee.

The recent nominal as well as real depreciation of the rupee does not alter the fact that India's service exports (and remittances) tend to keep the Indian rupee at a higher level than would otherwise be the case. While India should not seek to blunt the success of service exports, it should make every attempt to offset the resulting appreciation pressure by lowering trade costs and input frictions.

5. The Missing Billions: Modelling India's Export Potential and its Employment Implications

Having mapped the "hits and misses" across products and destinations, this section quantifies the cost of these self-imposed constraints. An econometrically robust PPML gravity model is applied to estimate India's potential bilateral merchandise exports worldwide. The gap between this predicted potential and actual performance yields the magnitude of the missing exports. Finally, this lost export value is translated into forgone formal jobs, showing that unlocking India's full export capacity is both a trade strategy and a critical labour market strategy.

5.1 India's Export Potential: A Gravity Model Approach

Our methodological approach to estimating India's export potential and its employment implications follows the standard approach in international economics. The gravity model of bilateral trade draws on Newton's law of gravity, which suggests that just as two masses attract each other more strongly when they are larger and closer, trade between two countries increases with the size of their economies (such as population or GDP) and decreases with greater distance or barriers (such as tariffs, borders, or cultural differences). This framework explains most observed global trade patterns. First applied empirically by Jan Tinbergen in 1962, modern gravity estimates explain around 60 to 85% of the variation in bilateral trade flows (Yotov et al., 2016).

Our estimated coefficients using the model are summarised in Table 6. We use pooled cross-sectional time-series data, matching each country with every other country. Because bilateral data are missing for some pairs, the panel is unbalanced.

The tariff dataset reported values by both trade year and tariff year, which sometimes created duplicates (for example, two tariffs for the same trade year, or the same tariff recorded across multiple trade years). We removed duplicates and used the trade year as the reference, since trade flows are recorded by trade year.

After dropping missing values and excluding non-sovereign entities to ensure consistent country-level coverage, the final dataset contains 424,000 observations spanning 1995 to 2022.

See Appendix A1 and A2 for details about the variables and the model's specification and estimation.

Table 6: Gravity Model Results: Three Specifications

Variable	Model 1	Model 2	Model 3
$logGDP_i$	0.780*** (0.010)	0.793*** (0.0103)	0.794*** (0.0100)
$LogGDP_j$	0.786*** (0.008)	0.800*** (0.0076)	0.814*** (0.0080)
$logDist_{ij}$	-0.626*** (0.011)	-0.626*** (0.0109)	-0.624*** (0.0110)
$logTariff_{ij}$	-1.670*** (0.391)	-1.562*** (0.3820)	-1.034*** (0.3740)
$logCurr_{ij}$	-0.020*** (0.002)	-0.0196*** (0.0023)	–
log.PopMag	0.026*** (0.007)	0.022*** (0.0073)	0.014** (0.0070)
comcol	0.850*** (0.047)	0.916*** (0.0465)	0.921*** (0.0470)
comlang_off	0.282*** (0.032)	0.269*** (0.0320)	0.273*** (0.0320)
contig	0.640*** (0.052)	0.632*** (0.0521)	0.632*** (0.0520)
crisidummy	-0.095*** (0.026)	–	-0.101*** (0.0258)
PostRecDum	–	-0.282*** (0.0222)	-0.283*** (0.0220)
CovDum	–	-0.101** (0.0423)	-0.103** (0.0420)
Constant	-16.667*** (0.288)	-17.060*** (0.2840)	-17.375*** (0.2910)
Missing Exports (US$ billion)	516	454	440
Missing Imports (US$ billion)	301	244	262
R-squared	0.58	0.59	0.59

*Note: Entries are coefficients with standard errors in parentheses. Stars indicate significance: ***p<0.01, **p<0.05, and *p<0.10.*

The missing export potential is measured as the difference between model-predicted and actual exports. According to our model, India had missing goods exports of US$516 billion in 2022 (Model 1), exceeding its actual exports. Adding this to the current exports in 2022[7] brings total exports to US$953 billion. While this does point to lost opportunities, it also points to the immense potential for increasing exports.

The biggest opportunities lie in the geographical corridors where India is performing poorly. The largest gaps between actual and potential exports lie in India's neighbourhood, especially in China, Pakistan, and Bangladesh (Table 7). Together, these three countries account for roughly half of the export gap.

Table 7: Worst-performing Corridors

Destination	Exports (in US$ billion)	Export Gap (in US$ billion)	Potential Exports (in US$ billion)
China	15.08	175.30	190.38
Pakistan	0.63	62.99	63.52
Bangladesh	13.83	24.27	38.10
USA	80.23	18.72	98.95
Japan	5.70	17.96	23.66
Russia	2.92	14.95	17.87
Germany	10.44	15.67	26.11
UK	11.24	14.21	25.45
Israel	7.59	12.66	20.25
France	8.05	9.83	17.88

Source: Based on authors' model calculations.

Trading with each of these three markets has its own challenges, but these are not insurmountable. China is India's largest source of imports, yet India has achieved little export success there, holding only a 0.7% share of China's US$2.6 trillion market in 2024. Given the recent thaw in relations, India would benefit from attracting Chinese FDI across a wide range of sectors, which would build capabilities and enhance exports to China. Investing in a deeper understanding of the market and its requirements, and addressing information bottlenecks, could also yield dividends. Since such information has a strong public good aspect, the State can help to deepen intelligence on the market and importers' needs and provide guidance on addressing non-tariff barriers (Kathuria et al., 2021).

[7] Alternative models predict missing exports in the range of US$400–US$500 billion. Model 1 is the lean, transparent baseline. A single crisis dummy equal to 1 in 2007 to 2009 and 2019 to 2021 captures the major global shocks without carving the sample into overlapping time blocks. That parsimony saves degrees of freedom, lowers the risk of multicollinearity among time controls, and keeps inference on the core gravity terms straightforward. It also avoids letting a long post-2009 indicator absorb slow structural drift in world trade that may be of substantive interest rather than noise. Finally, because less variation is absorbed in advance by time dummies, Model 1 often yields larger missing trade gaps that serve as a useful upper bound for policy narratives that want to stress under trading while remaining robust.

Political friction has penalised trade between India and Pakistan more severely than trade between India and China. Trade between the two countries has been severely constrained since 2019 (Kathuria, 2024), but this need not be the case. Resuming meaningful bilateral trade would yield large benefits to both countries. The gap of about US$63 billion in India's potential goods exports to Pakistan reflects a significant opportunity, consistent with earlier estimates of high potential for trade with India (Kathuria, 2018). Pakistan's exports could increase many times over, with commensurate gains for GDP and employment, under a normal trading relationship with India (Kathuria, 2023). If the two countries traded as natural partners sharing a common border, their trading costs would be substantially lower than with the rest of the world.

Bangladesh's current frictions with India are more tractable. Despite some tit-for-tat measures that have raised non-tariff barriers and increased trading costs, bilateral trade—the largest in South Asia—remains robust. An urgent de-escalation is needed to restore the economic partnership and realise the win-win trade potential (Kathuria, 2025c).

Table 8: Best-performing Corridors

Destination	Exports (in US$ billion)	Export Overperformance (in US$ billion)
The Netherlands	18.5	10.06
UAE	31.32	8.88
Nepal	8.53	5.98
Togo	5.4	5.26
Belgium	9.69	4.59
South Africa	8.27	3.8
Mozambique	2.3	1.98
Oman	4.72	1.1
Vietnam	5.88	1.06
Sri Lanka	6.33	1.02

Source: Based on authors' model calculations.

According to the gravity model, there are also some corridors where India's exports exceed the predictions of the model (Table 8). The Netherlands stands out for the highest export overperformance: Actual shipments far exceed expected levels. Neighbouring countries, notably Nepal and Sri Lanka, also overperform. India's exports to several African partners, particularly Togo, South Africa, and Mozambique, show similar strength. The UAE poses some interesting questions: With the FTA between India and the UAE coming into force in May 2022, India's exports could grow further despite the existing overperformance. Moreover, countries like the UAE and the Netherlands could be used as hubs/platforms for extending trade in their respective vicinities.

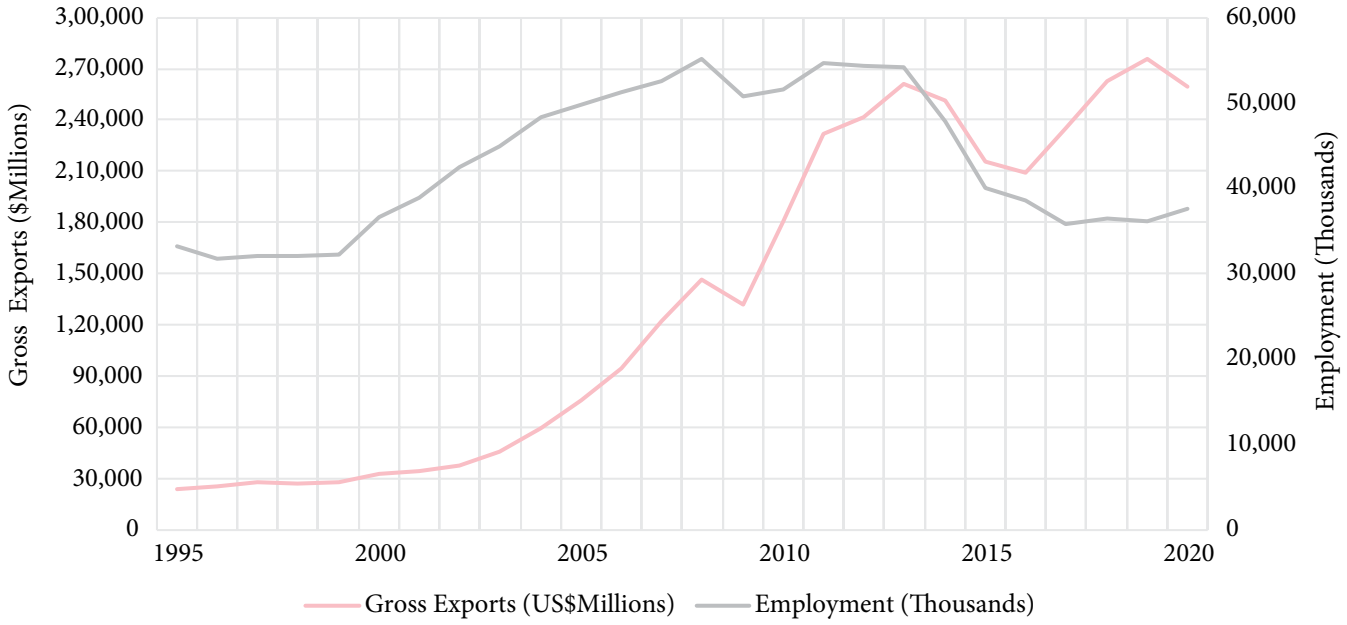
On the whole, overperformance is modest compared with India's underperformance across different export corridors, leaving plenty of room for growth and improvement. The model suggests a clear pathway for market diversification: The greatest potential for trade growth lies in India's neighbourhood, which, if realised, can easily overcome the negative impact of trade frictions with the US (Kathuria & Srinivasan, 2025).

5.2 Employment Potential of India's Missing Export

Since the reforms, increased foreign trade has been acknowledged as playing a vital role in generating employment opportunities in India (Acharyya, 2006). Across seven priority groups (man-made fibres, footwear, apparel, furniture, glass, wood panels, and other electrical), China produces about US$888 billion compared with India's about US$42 billion (Bishnoi et al., 2024). Manufacturing exports also generate significant jobs in upstream, input-supplying sectors (Calì et al., 2016).

To project the employment potential of the "missing" exports, India's past export-boom period is examined to estimate the employment elasticity of exports. India's exports and employment both surged from 1999 to 2012, overlapping with the period of "hyper-globalisation." In the subsequent eight years, export growth slowed, and employment contracted (Figure 7).

Figure 7: Exports and Employment in India



Source: Organisation for Economic Co-operation and Development Trade in Employment database and Trade in Value Added database (2023).
Note: Export of merchandise in current prices; employment is the sum of direct and indirect employment generated by gross exports.

After adjusting for changes in export prices, real exports rose by 12.8% per year during the boom period, while employment increased by 4.1% per year, implying an elasticity of 0.32. This is in line with a recent World Bank econometric study that estimates the employment elasticity of exports at about 0.3, based on a cross-country sample for 1995 to 2013 (Winkler et al., 2023). Employment growth typically lags overall export growth because of productivity gains, deeper participation in GVCs, and shifts in the export basket. As seen in Figure 6, less complex and more labour-intensive products have seen a decline in market share.

If the same enabling factors were present as in the boom period (1999 to 2012), we can estimate the likely impact on employment if India were to realise the additional US$516 billion in goods exports: around 24 million jobs, including both direct and indirect employment generated by export activities. This represents a substantial addition, about 68% of 2020 export-related employment, and could absorb roughly three years of young labour force entrants in India, who face a 12% unemployment rate. Beyond the number of jobs created, export-led jobs tend to pay higher wages and are more likely to be in the formal sector and held by women (Maliszewska & Winkler, 2024).

6. Policy Directions

The current growth model of India, reliant primarily on domestic demand and world-class export of services, is insufficient to absorb the country's young labour force or achieve sustained, export-led development. A critical piece of the solution lies in labour-intensive manufacturing, where India has significantly underperformed (Mohan, 2021). As Indian policymakers grapple with a much more difficult and uncertain international environment, they would benefit from recalling the lessons from India's post-1991 success.

6.1 Past Success Provides Critical Pointers

India's post-1991 trade trajectory demonstrates substantial export success, particularly in services and higher-value goods. But continued progress is undercut by the structural drag from rising import tariffs, weak GVC participation, and real exchange rate appreciation—reflected in significant untapped export potential.

India's trade performance since the 1991 liberalisation reveals a dynamic yet incomplete integration into the global economy, achieving substantial growth in exports, rising steadily from 8.5% of GDP in 1991 to a **peak of 25.4% in 2013;** it was down to 21.2% in 2024. The increased export orientation correlated directly with rising average growth rates, and also

led to a near fourfold increase in India's global export share (in goods and services), to 2.6% by 2024. This success has been driven by the robust services sector, especially after 2010; however, the overall growth model remains domestically focused, leaving India's trade-to-GDP ratio consistently below that of comparable East Asian peers.

Recent trade policies, along with some macroeconomic headwinds, have reduced the growth momentum of India's goods exports. Firstly, over the last decade, and especially since 2018, India's tariff liberalisation was reversed: Average tariffs rose from 13.4% in 2015 to 18.1% in 2022. Although they eased to 16.2% in 2024, they remain considerably higher than in 2010 and well above levels in peers such as China and Vietnam. The gravity model estimates that a 1% tariff hike decreases exports by 1.67%, which implies an 8% export penalty at the 2022 tariff peak, compared with 2015. Since 2019, a surge in QCOs has further suppressed and delayed imports.

Secondly, rising protection has coincided with weaker participation in GVCs, with foreign value added in gross exports declining to 17% by 2020. The reliance on tariffs and the presence of tariff inversion (where tariffs on inputs exceed those on outputs) impede access to efficient global inputs, vital catalysts for export expansion, and penetration into GVCs.

Thirdly, the strong performance of ICT services has exerted appreciation pressure on the REER. Combined with an IMF model estimated misalignment of 4.8% in 2024, this translates into an estimated **9% lower real non-oil export of goods**, particularly squeezing margins on less complex products.

Together, tariff barriers and proliferating QCOs, weak GVC integration, and the exchange rate drag are reflected in a massive **missing export potential of goods worth US$516 billion** in 2022, with the largest gaps observed in India's immediate neighbourhood and in key markets such as China.

6.2 Enabling the Elephant to Dance

With only a 1.8% share of world goods exports, India remains a significant underperformer. This modest share underscores above all the opportunities that exist—opportunities that should not be overlooked despite the current headwinds in global trade.

Unleashing India's export potential requires policymakers to draw lessons from India's past success. One enduring lesson is that imports and exports are two sides of the same coin, as Abba Lerner established in 1936. Imports lower marginal costs, embed technology, and foster productivity spillovers. By limiting firms' ability to tap into efficient global inputs, protectionist policies prevent them from flourishing in export markets.

Over the last decade, India's goods exports in dollar terms grew at an annual average rate of just 3.3%, roughly matching the pace of world goods exports. To unleash its potential and let the Indian elephant dance freely, this study recommends that policymakers address four major external sector issues. Other issues, especially those concerning domestic regulation, are covered in the companion piece to this paper (Prabhakar et al., 2025).

Firstly, tariffs and QCOs should be rationalised. India should publish a white paper on its trade policy, its role in national development, and most importantly, a clear path to tariff rationalisation. Reasonable goals could include aligning tariffs with China and Vietnam, minimising tariff dispersion across sectors, eliminating tariff inversion, and ensuring that QCOs/standards do not become disguised tariffs. The paper should set finite timelines and sunset clauses for protection. It could also set out clearly the rationale for limited, transparent protection exceptions for food security and for core technologies such as semiconductors and artificial intelligence.

Secondly, FTAs with major partners should be signed or deepened. For political–economic reasons, FTAs may be a more palatable path to faster liberalisation than unilateral measures, while also providing additional benefits:

- In the context of a fraying rules-based trading order, FTAs with major partners can create a predictable, rules-based framework that helps compensate for weaknesses in the global trading system. In this context, a major step was taken in January 2026, with India and the EU signing an FTA that had been in the making for nearly twenty years. The logic of this approach further argues for seriously considering participation in mega-regionals such as RCEP and CPTPP.
- FTAs can help address rigidities and protectionism that often arise from standards and QCOs by including instruments such as mutual recognition agreements.
- FTAs strengthen incentives for FDI, given

the close links between trade and investment, particularly in the context of GVCs.

- Finally, India may benefit from defining a set of core strategic partners with whom it is willing to adjust its sensitivities on critical technologies, adopting a partnership approach rather than a protectionist one.

Thirdly, exchange rate misalignment should be addressed. India's considerable success in services exports has contributed to REER appreciation, leading to negative effects concentrated in low-complexity, labour-intensive goods, and costing India millions of better-quality jobs, a heavy price to pay. The policy implications are complex. Interventions could include a more relaxed approach by the RBI to currency depreciation, while maintaining currency stability. Another policy response would be a sharp focus on cutting transaction and import costs for firms, for example, facilitating duty-free imported-input pipelines, with particular attention to small firms and those operating in low-margin sectors such as garments, footwear, and toys.

Fourthly, there is a need to diversify into India's neighbourhood and East Asia:

- The Chinese market is India's biggest challenge, but also its biggest opportunity. China is the world's second-largest importer, with goods imports worth US$2.6 trillion in 2024. China is certainly an opaque market with many non-tariff barriers, but as part of the recent thaw in bilateral relations, the Indian government, as well as the private sector need to invest in a systematic understanding of the market. Information bottlenecks and asymmetries can impose extremely high costs on firms, and the State can help reduce the up-front costs of such information. The Indian State can also launch a concerted effort, in cooperation with the Chinese government, to reduce non-tariff barriers for Indian exporters in China.
- Bangladesh remains South Asia's biggest bilateral partnership, despite recent trade frictions, and trade remains robust. However, the recent imposition of restrictive trade measures on both sides, such as port and airport restrictions, needs to be rolled back, and India should restore a liberal visa regime, so that people-to-people relations are not handicapped.
- The India–Pakistan bilateral could become the region's biggest trade partnership, with potential export gains of US$63 billion for India alone, a number that may surprise many: It reflects Pakistan's own unfulfilled trade potential, as well as India's potential exports to Pakistan. Trade logic dictates that Pakistan's exports to India would also increase by many multiples of its pre-2019 level: India is Pakistan's biggest missing market. Thus, in the interest of their people and economic pragmatism, India and Pakistan should resume trade and simultaneously chart a path towards long-term trade normalisation, with existing blueprints that can be dusted off the shelf to guide the latter objective.
- Looking regionally and applying the Mandeng methodology, India's biggest missed opportunity lies in East Asia: a region that is central to GVCs and increasing its share in world trade. A long-overdue pivot to Asia requires rebooting India's 2019 Act East Policy.

India can more than double its goods exports by shedding its hesitant approach to trade, dismantling self-imposed policy constraints and integrating robustly into the global economy. The elephant is ready to dance—but only if India lets it.

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Appendices

Appendix A: Gravity Model

A1. Data Sources

The dependent variable, merchandise export flows, and data on GDP, population, and bilateral exchange rates were sourced from the United Nations Conference on Trade and Development (UNCTAD). The Centre d'Études Prospectives et d'Informations Internationales (CEPII) is the source for variables like bilateral distance, colonial ties, common language, and geographic contiguity. Data on tariffs were collected from the World Integrated Trade Solution (WITS).

Observations were indexed by both year of trade and year of tariff, which at times generated duplicate records. Therefore, the trade year was kept as the reference period, and the empirical analysis is anchored in observed trade flows. To clean the data set, the missing values were removed, and non-sovereign entities were excluded to maintain consistent country-level coverage and comparability across observations. After consistency checks and cleaning, the final sample consisted of 424,034 observations spanning 1995 to 2022, which was used for estimation.

The descriptive statistics are presented in Table A–1, which indicates extensive divergence in the sample. The inclusion of both small and large economies, as well as diverse trade relationships, led to wide variation in Exports and GDP. It also reflects that a small number of country pairs accounted for a disproportionate share of total trade. The considerable variation in distance indicates meaningful differences in transport and transaction costs across pairs. The adequate cross-sectional and temporal variation in tariffs and in bilateral exchange rates exhibiting a substantial spread in currency regimes and price levels are helpful in obtaining reliable estimates. Gravity dummies indicate that historically linked or geographically proximate pairs form only a limited subset of the sample, allowing identification to extend beyond natural partners to a broader set of bilateral relationships. Overall, the summary statistics indicate a varied pooled cross section time series with substantial variation in economic size and trade frictions, making it well-suited for any regression-based estimation.

Table A–1: Descriptive Statistics

Variable	Observations	Mean	Std. Dev.
Exports (Current US$)	4,24,034	US$597.1 million	US$6.461 billion
GDP Origin Country (Current US$)	4,24,034	US$634.7 billion	US$2.091 trillion
GDP Destination Country (Current US$)	4,24,034	US$453.1 billion	US$1.728 trillion
Distance	4,24,034	7,587.96 km	4,373.2 km
Population Magnitude	4,24,034	2.142 quadrillion	22.55 quadrillion
MFN Tariffs, Simple Average	4,24,034	8.3%	9.481%
National Currency, Bilateral, Current Prices	4,24,034	331.67 currency units	3,454.151 currency units
Common Coloniser (Dummy)	4,24,034	0.085	0.28
Common Language (Dummy)	4,24,034	0.148	0.355
Contiguity (Dummy)	4,24,034	0.02	0.14
Crisis (Dummy)	4,24,034	0.237	0.425

Source: World Integrated Trade Solution; Centre d'Études Prospectives et d'Informations Internationales; United Nations Conference on Trade and Development; authors' calculations.

Note: Std. Dev. = standard deviation; MFN = most favoured nation; GDP = gross domestic product.

A2. Variable Explanations

$$Exp_{ijt} = \exp\{\beta_o + \beta_1 \log(GDP_{it}) + \beta_2 \log(GDP_{jt}) + \beta_3 \log(Dist_{ijt}) + \beta_4 \log(PopMag_{ijt}) + \beta_5 \log(1 + Tariff_{ijt}) + \beta_6 \log(Curr_{ijt}) + \beta_7(comcol_{ij}) + \beta_8(commlangoof f_{ijt}) + \beta_9(contig_{ij}) + \beta_{10}(CrisisDummy_t) + u_{ijt}\} + e_{ijt}$$

Exp_{ijt}: Merchandise exports from origin country i to destination country j (current US$). In PPML, it is modelled in levels with a log link.

$logGDP_{it}$: Log of the exporter's GDP at current prices. Proxy for the origin market's economic mass.

$logGDP_{jt}$: Log of the importer's GDP at current prices. Proxy for destination market size.

$logDist_{ijt}$: Log of great-circle distance between country i and country j in kilometres. Friction variable.

$logPopMag_{ijt}$: Log of Population_i times Population_j, which equals log (Population_i) plus log(Population_j) at time t. Market-size proxy for the combined population of the corridor.

$logTariff_{ijt}$ (exporter-side): Log of 1 plus the simple-average ad valorem tariff rate that country i levies on imports from country j in year t. Example: 10% becomes log(1 + 0.10). Used as a cost-side shifter. Higher $Tariff_{ij}$ raises input costs in i and, by increasing the likelihood of reciprocal measures by j, proxies bilateral frictions that reduce exports from i to j. In line with some other gravity work, a stochastic-frontier gravity identifies India's export shortfall as significant inefficiency and finds partner-country tariffs on Indian exports insignificant (Kelkar & Kalirajan, 2021). This is why only origin-country tariffs are used, as they provide more insights.

$logCurr_{ijt}$: Bilateral nominal exchange rate built from UNCTAD's national-currency-per-US-dollar series. For each pair, construct the importer currency per one exporter currency unit, then take the log. A higher value means a stronger exporter currency or a weaker importer currency. Model 3 drops this variable.

comcol: Indicator equals 1 if the pair has a colonial tie or a shared coloniser, 0 otherwise. Expected positive association with trade.

comlang_off: Indicator equals 1 if the pair shares an official language, 0 otherwise. Expected positive association with trade.

contig: Indicator equals 1 if the countries share a land border, 0 otherwise. Expected positive association with trade.

CrisisDummy (Model 1 & 3): Equals 1 in 2007 to 2009 and 2019 to 2021, corresponding to the Great Recession and the COVID-19 pandemic, and 0 otherwise. Controls for the trade shocks that happened during these periods.

PostRecDum (Model 2 & 3): Equals 1 from 2009 to 2022, covering the post-crisis recovery through to the end of the sample, and 0 otherwise. Captures the persistent post-crisis shortfall relative to pre-2009 years.

CovDum (Model 2 & 3): Equals 1 during the COVID-19 period, and 0 otherwise.

A3. Results and Analysis

In model 1, an increase of 1% in the GDP of the origin economy raises exports by 0.78%, as this value is the coefficient of the exporter's log (GDP). Similarly, a 1% increase in the GDP of the destination economy raises exports by about 0.79%. Distance forms part of the transaction cost. Exports decrease by about 0.63% when the distance rises by 1%. A 1% increase in (1+tariff) lowers the exports by as much as 1.67%, showing how large (1+tariff) elasticity is. The bilateral currency term elasticity is small and negative at -0.02, which says that an exporter currency appreciation or an importer currency depreciation reduces exports. The population elasticity is 0.02. The effects of the dummy variables are substantial.

They are qualitative indicators, and their interpretations are different. Here, all these variables are statistically significant. The coefficient of the common coloniser variable is 0.85, implying ($e^{0.85}$-1) or 133.96% higher exports. Similarly, sharing an official language leads to about 32.58% higher exports, contiguity leads to about 89.65% higher exports, and the crisis dummy leads to a 9.06% lower exports.

Model 2 introduces time controls that distinguish the post-recovery period and the COVID years from the acute crisis phase. The core elasticities remain broadly unchanged. Exporter GDP stands at 0.79, importer GDP at 0.80, distance at -0.626, and the tariff elasticity at -1.56. The currency elasticity remains small and negative at -0.019, while population magnitude stays positive at 0.02. The historical and

geographic dummies continue to be economically large. A common coloniser corresponds to $e^{0.916}$-1, or 149.93% higher exports. A shared official language gives $e^{0.269}$-1, amounting to about 30.87% higher exports, and contiguity implies $e^{0.632}$-1, or 88.14% higher exports compared to those countries that do not share a border. The post-recovery dummy is equal to $e^{-0.282}$-1, which suggests a 24.57% lower level of exports relative to the pre-crisis benchmark, while the COVID dummy corresponds to $e^{-0.101}$-1, implying a 9.61% decline.

Model 3 omits the exchange-rate term but retains the crisis, post-recovery, and COVID controls. The GDP elasticities edge up slightly to 0.79 for the exporter and 0.81 for the importer, while distance remains stable at -0.624. The tariff elasticity moderates to -1.03, though it remains economically large and negative, and population magnitude stays positive at 0.014. The qualitative indicators again point to strong effects. A common coloniser is associated with $e^{0.921}$-1, equivalent to 151.18% higher exports as opposed to two countries that did not share a common coloniser. Sharing an official language yields $e^{0.273}$-1, or about 31.39% higher exports, and contiguity corresponds to $e^{0.632}$-1, again implying 88.14% higher exports. The crisis indicator gives $e^{-0.101}$-1, or a 9.61% fall in exports; the post-recovery indicator implies $e^{-0.283}$-1, a 24.65% decline; and the COVID indicator produces $e^{-0.103}$-1, corresponding to a 9.79% reduction.

Lastly, the bottom panel of Table 6 reports missing exports of US$516 billion and missing imports of US$301 billion in Model 1. The estimated gaps are smaller, and therefore more conservative, in Model 2, with missing exports of US$454 billion and missing imports of US$244 billion. In Model 3, the corresponding figures are US$440 billion for missing exports and US$262 billion for missing imports.

Taken together, the three specifications point to a consistent story. The core gravity fundamentals are stable and precisely estimated, while tariffs have a sizable adverse effect on trade. Historical and geographic ties significantly increase trade, whereas the financial crisis and the pandemic reduced trade even after controlling for size, distance, prices, and population. The minor differences across models arise from how time periods are controlled and whether the currency term is included, while the core patterns remain intact.

The worst corridors for each model are as follows.

Table A–2: Corridor Comparison Across the Three Models

Destination	Exports (US$ Billion)	Gap M1 (US$ Billion)	Gap M2 (US$ Billion)	Gap M3 (US$ Billion)
CHN	15.1	175.3	163.2	160.1
PAK	0.6	63.0	59.7	61.6
BGD	13.8	24.3	22.9	23.4
USA	80.2	18.7	13.0	10.1
JPN	5.7	18.0	16.5	17.4
DEU	10.4	15.7	14.0	12.8
RUS	2.9	15.0	13.6	13.8
GBR	11.2	14.2	12.2	11.0
ISR	7.6	12.7	12.0	11.2
FRA	8.0	9.8	8.6	7.7
QAT	2.0	9.2	8.9	8.5

Source: Based on the authors' gravity model calculations.

Note: CHN = China; PAK = Pakistan; BGD = Bangladesh; USA = United States of America; JPN = Japan; DEU = Germany; RUS = Russia; GBR = United Kingdom; ISR = Israel; FRA = France; QAT = Qatar.

A4. Robustness, Sensitivity, and Diagnostic Checks

This appendix reports a set of robustness and sensitivity exercises designed to assess whether the core results on India's missing export potential are driven by specification choices, error structure, or sample composition. The objective is not causal identification of individual coefficients, but the stability and credibility of the implied export potential rankings and aggregate gaps.

Fixed Effects Structure and Interpretation

We estimate alternative PPML specifications with increasingly demanding fixed effects, including exporter-year and importer-year fixed effects. These specifications absorb all time-varying multilateral resistance terms and country-specific shocks, thereby addressing concerns related to unobserved heterogeneity, global demand shifts, and exporter- or importer-specific macroeconomic dynamics. While such saturated fixed effects are standard in causal gravity work, their inclusion significantly changes the interpretation of fitted values. Exporter-year and importer-year fixed effects absorb most of the systematic variation in bilateral trade flows, so predicted exports are driven largely by residual bilateral frictions. As a result, fitted values from these specifications tend to compress trade gaps mechanically, making them less meaningful for counterfactual exercises that aim to measure export potential rather than relative deviations from country-year means. For this reason, fixed-effects-heavy specifications are treated as diagnostic bounds rather than preferred models. The baseline specifications retain standard structural controls while preserving economically interpretable fitted values suitable for counterfactual aggregation.

Unbalanced Panel, Dyads, and Stationarity

The dataset is an unbalanced bilateral panel, reflecting entry and exit of trading relationships, missing observations, and reporting gaps. As a result, dyad fixed effects are neither feasible nor desirable. In an unbalanced panel, dyad fixed effects would discard a large share of informative variation and severely limit the sample, without materially improving identification for the question at hand.

Concerns related to non-stationarity are mitigated by three features of the estimation strategy. Firstly, the dependent variable is bilateral exports in levels, estimated using PPML, which is robust to zeros and does not rely on log-linear transformations. Secondly, exporter and importer GDP terms capture scale effects directly, reducing spurious trends. Thirdly, the analysis focuses on a single recent year for counterfactual aggregation, avoiding dynamic panel assumptions about long-run convergence or persistence.

Accordingly, unit root or cointegration tests are not relevant for the static export potential exercise undertaken here.

Heteroskedasticity and Error Structure

PPML estimation is explicitly robust to heteroskedasticity in trade data, a well-documented feature of bilateral flows. To further assess inference sensitivity, we estimate standard errors under alternative clustering schemes, including clustering by exporter, by importer, and two-way clustering by exporter and importer. Across all clustering strategies, coefficient signs, magnitudes, and significance levels remain stable. Importantly, the ranking of worst-performing export corridors and the aggregate export gap estimates are unaffected by the choice of clustering, indicating that results are not driven by underestimated standard errors or correlated shocks within country groups.

Sensitivity Across Model Specifications

Three core specifications are reported, differing in the inclusion of crisis dummies, post-recession controls, and currency variables. While absolute magnitudes of the aggregate export gap vary across specifications, the identity of the worst-performing corridors remains highly stable.

Rank correlation analysis supports this stability. Spearman rank correlations of export gaps across the three models are high and statistically significant, indicating that the relative ordering of underperforming destinations remains robust across different specifications. This is particularly important from a policy perspective, as identifying consistently underutilised corridors matters more than relying on point estimates for any single market. France, which ranks just outside the top 10 in two specifications, still remains within the top tier across all models, further indicating that the conclusions are not sensitive to marginal cut-off choices.

Why the Preferred Models are Appropriate

Taken together, these diagnostics support the use of parsimonious PPML gravity specifications without saturated fixed effects as the preferred framework

for measuring export potential. Specifications with extensive fixed effects can serve as robustness checks, but they are not suitable for counterfactual aggregation because they mechanically absorb variation that is central to the concept of unrealised trade. The convergence of results across specifications, clustering schemes, and ranking metrics substantially reduces concerns that the estimated missing exports are artefacts of modelling choices. Instead, the evidence points to a structurally persistent pattern of underperformance across a small but economically meaningful set of corridors, reinforcing the credibility of the main findings.

Appendix B. Mandeng's Classification

Table B–1 reports India's share of world exports for each HS 2-digit product and the corresponding product share in world exports in 1991 and 2023. The table is presented in the same four-quadrant format as Table 3 to provide a robustness view based on global market shares. This is based on the original Mandeng formulation.

Table B–1: India and Product-wise Export Global Shares, 1991 vs 2023; Classification Using Global Market Shares

Rising Stars				
Sector (The First Two Digits are HS Codes)	**India's Share in World Exports 1991**	**India's Share in World Exports 2023**	**World Share 1991**	**World Share 2023**
27. Mineral fuels, oils, and distillation products; bituminous substances and mineral waxes	0.31	3.66	1.49	4
73. Articles of iron or steel	0.81	2.67	1.65	1.7
30. Pharmaceutical products	2.89	2.64	0.81	3.76
85. Electrical machinery and equipment, including parts, sound and TV recorders, and accessories	0.15	1.03	11.98	14.56
76. Aluminium and aluminium products	0.69	3.29	1.03	1.04
39. Plastics and articles thereof	0.16	1.07	2.67	3.08
Falling Stars				
Sector	**India's Share in World Exports 1991**	**India's Share in World Exports 2023**	**World Share 1991**	**World Share 2023**
84. Nuclear reactors, boilers, machinery, mechanical appliances, and parts	0.17	1.20	15.82	11.4
87. Vehicles (excluding railway or tramway rolling stock) and their parts and accessories	0.20	1.17	11.27	8.29
29. Organic chemicals	0.74	4.33	2.35	2.09
72. Iron and steel	0.60	2.83	2.29	1.95
10. Cereals	1.86	7.60	1.04	0.69

Missed Opportunities				
Sector	**India's Share in World Exports 1991**	**India's Share in World Exports 2023**	**World Share 1991**	**World Share 2023**
63. Other made-up textile articles, sets, worn clothing, and rags	7.43	7.47	0.23	0.34
61. Knitted or crocheted apparel and clothing accessories	3.28	3.04	0.86	1.02
26. Ores, slag, and ash	4.72	1.29	0.71	1.44
42. Leather articles, saddlery, harness, travel goods, handbags, and animal gut products (excluding silk-worm gut)	8.77	2.50	0.32	0.45
08. Edible fruit, nuts, and citrus/melon peels	3.00	1.12	0.59	0.63
71. Pearls, precious stones, metals, and jewellery (including imitation); coins.	9.62	3.89	7.17	11.36
23. Food industry residues, waste, and prepared animal feed	4.53	2.79	0.43	0.5
Retreats				
Sector	**India's Share in World Exports 1991**	**India's Share in World Exports 2023**	**World Share 1991**	**World Share 2023**
62. Apparel and clothing accessories, not knitted or crocheted	6.62	3.85	1.31	0.95
64. Footwear, gaiters, and related parts	3.47	1.86	0.71	0.63
41. Raw hides and skins (excluding fur skins) and leather	4.76	2.93	0.32	0.07
52. Cotton	9.10	13.47	0.64	0.22
03. Fish, crustaceans, molluscs, and other aquatic invertebrates	3.36	5.32	0.91	0.55
09. Coffee, tea, maté, and spices	11.30	7.55	0.35	0.27
57. Carpets and textile floor coverings	18.88	11.21	0.14	0.08

Source: World Integrated Trade Solution; United Nations Conference on Trade and Development; United Nations Commodity Trade Statistics Database; and authors' calculations.

About the authors

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His writings have appeared in Foreign Policy, Hindustan Times, The Indian Express, The Wire, Daily FT (Sri Lanka), and Business Standard, among other publications. He is currently working on a new book on The Future of South Asia.

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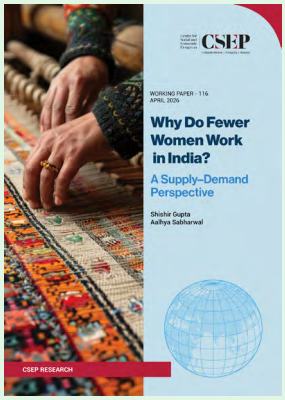
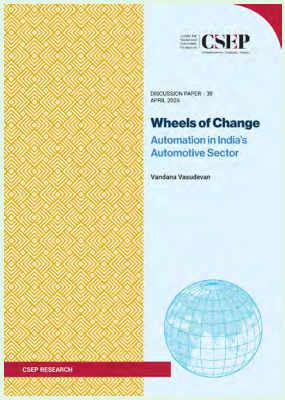
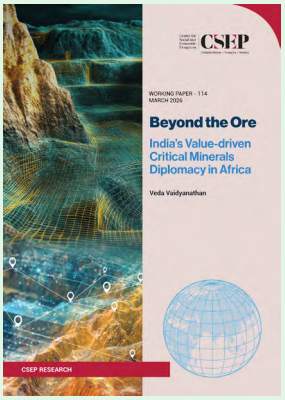
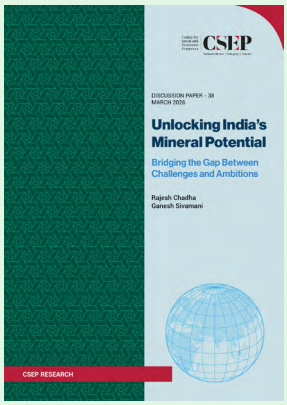
Before joining the Centre, he has made significant contributions to the World Bank as a Senior Economist. During his tenure at the World Bank, he led poverty assessment work for countries like Jordan, Yemen, Nepal, and Bhutan. He also served as the country economist and played a crucial role in coordinating the World Bank's global macroeconometric forecasting models. He worked in the Ministry of Finance in Oman, where he was involved in the development and implementation of the medium-term economic framework.

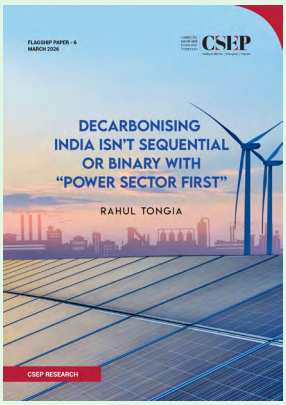
Other publications

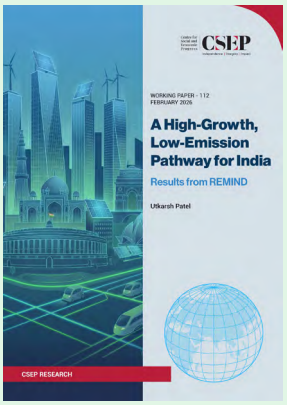


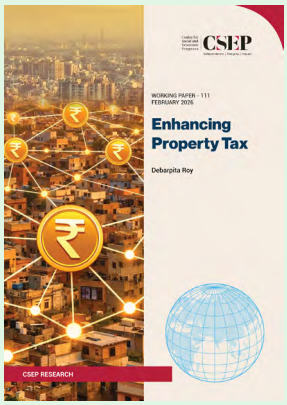


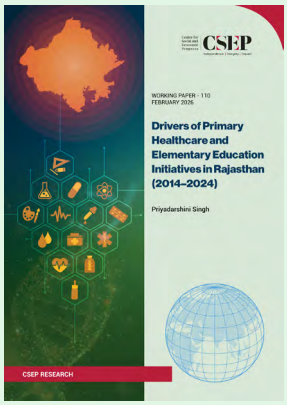


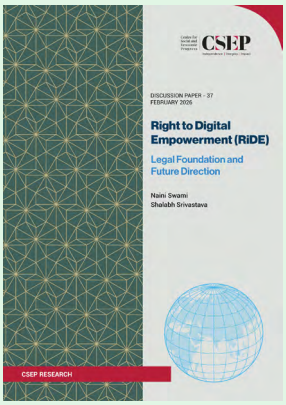


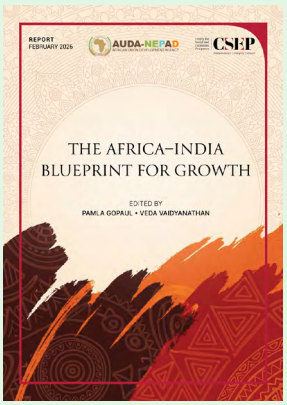


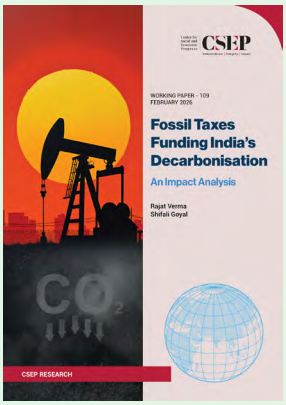


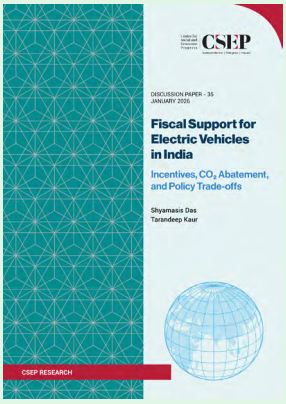












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