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RESEARCH PAPER

ENCLAVES AND ABSORPTION CONSTRAINTS

India's Services-Led Development from a Structural Perspective

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This paper provides a structural assessment of India's services-led development trajectory, and its integration into global value chains (GVCs) between 2012 and 2022. Applying an analytical framework that categorizes services into knowledge (KS), enabling (ES), and local (LS) sectors, the study utilizes sixteen OECD indicators to move beyond the narrative of India as a 'services champion' and reveal a more complex economic reality.

The analysis identifies three central structural patterns, beginning with the 'enclave' nature of the flagship IT export sector (J62–63), which maintains productivity levels comparable to high-income benchmarks, but is shallowly linked to the domestic economy, with a labor-income share that plummeted from 26% to 11% over the decade. Second, a stark absorption arithmetic reveals a productivity-absorption tradeoff in which the most productive sectors employ the fewest workers. Consequently, with an agricultural workforce still near 248 million, IT expansion alone cannot fulfill for India the labor-reallocation function traditionally performed by manufacturing. Finally, the paper identifies a constraint-driven posture in which India's manufacturing share has stalled at post-industrial levels (16% of GDP) despite aggressive policy interventions such as 'Make in India'. This trajectory is framed not as a choice, but as the 'path left available' because of the global capital intensification of manufacturing, which has significantly weakened its labor-absorption capacity.

The paper concludes that while India's services-led path is viable, it requires a 'Big-Push' policy characterized by the public coordination of investments that the market alone will not align. Aggregate convergence depends on scaling knowledge services beyond IT, and upgrading the productivity of 'absorbing' LS through AI-enabled tools. Ultimately, India's convergence challenge is harder than that of comparable manufacturing-led economies because services are more heterogeneous in terms of productivity and employment generation, and the country's immense scale magnifies the difficulty of the absorption arithmetic.

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1. Introduction

This paper applies to India the analytical framework developed in 'A Framework to Assess Services as a Driver for Economic Growth and Structural Transformation' (Dinh, 2026a; hereafter the Framework Paper). That framework classifies services into three categories—knowledge services (KS), enabling services (ES), and local services (LS)—and evaluates them on the basis of 16 quantitative indicators drawn from the OECD Trade in Value Added (TiVA), Trade in Employment (TiM), and input-output databases. Readers are referred to the Framework Paper, and to the companion country studies on Egypt, Morocco, and Tunisia, for full definitions, indicator construction, and the EU15 benchmarks against which country-level evidence is assessed. For convenience, Annex 1 of this paper summarizes the 16 indicators.

India occupies a distinctive position in this series. While Morocco, Egypt, and Tunisia are relatively open economies seeking deeper integration with the European single market, and China has experienced services growth against the backdrop of a vast and well-established manufacturing base, India is the only economy in the dataset for which services have led structural change in their own right. Its computer programming and information services sector has acquired international visibility at a scale no other developing economy has matched, generating substantial foreign-exchange earnings, and establishing India as the leading developing-country supplier of technology services to global markets. Meanwhile, India's domestic market is so large that any services-led strategy must function simultaneously as an export engine and as a domestic employment-creation mechanism—a dual requirement that is central to the analysis that follows.

Two structural features set the stage. First, India's KS sector—and specifically computer programming and information services (J62–63)—is internationally competitive at a level comparable to high-income benchmarks yet remains shallowly embedded in the rest of the domestic economy. This combination defines what we call the 'enclave' character of India's flagship subsector. Second, India's manufacturing sector has not delivered the labor-absorption response that peer developing economies have achieved, despite explicit and well-resourced national policy. The services-led trajectory pursued by India is therefore less a freely chosen strategy than the path left available after the manufacturing-led alternative was tested and proved insufficient at the aggregate level.

The 'enclave' feature and the structural impediment to manufacturing-led development jointly determine the policy agenda developed in this paper. Section 2 establishes the enclave character of India's J62–63 sector in detail. Section 3 examines the absorption question: whether and how the wider services portfolio can take on the labor-reallocation function that manufacturing has not performed. Section 4 presents the cross-country and policy evidence on manufacturing's constraint-driven trajectory. Section 5 synthesizes the findings and derives policy implications, including a direct comparison of India's trajectory with that of China.

2. The J62–63 Enclave: International Competitiveness and Domestic Shallowness

India's computer programming, consultancy, and information services subsector (J62–63) is the anchor of its services-led reputation and the natural starting point for this analysis. The rationale for focusing on J62–63, before turning to the broader services portfolio, is straightforward: it is the subsector in which India has achieved genuine international distinction, and understanding its structural character—what has been accomplished, where the limits lie, and how the subsector relates to the rest of the economy—is the prerequisite for evaluating whether and how the wider services portfolio can deliver aggregate convergence. The enabling and local services subsectors are taken up in section 3; this section establishes the structural benchmark from which that discussion proceeds.

2.1. International Competitiveness

On every measure of international integration, J62–63 reaches levels comparable to or exceeding those of the EU15 high-income benchmark, once differences in income levels are taken into account.

The GDP share is the most readily interpretable entry point. India's J62–63 share rose from approximately 3.1% of GDP in 2012 to approximately 5.2% in 2022, surpassing the EU15's 3.1% in 2022. Among emerging market and developing economies (EMDE) in the dataset, no peer comes close: Tunisia's 1.4% and China's 1.3% are nearest, with Vietnam at 0.5% and Mexico at 0.2%.

Productivity reinforces the picture. Value added per worker in J62–63 rose from approximately $29,000 in 2012 to approximately $84,000 in 2022. The corresponding EU15 figure was about $109,000. The absolute gap is real but narrower than India's overall *per-capita* income gap with the EU15 would suggest. Expressed as a premium over each economy's *per-capita* GDP, India's J62–63 stands at roughly 35 times India's *per-capita* income, against approximately two to three times for the EU15. The within-economy productivity gap between J62–63 and the rest of India's services sector is wider than in any other country in the sample. Among developing economies, Thailand's approximately $44,000 per worker is the next highest; the remaining countries cluster between $12,000 and $25,000.

On GVC participation, the domestic value-added share in gross exports—the proportion of India's J62–63 exports produced with domestic rather than foreign inputs (EXGR_DVA)—sat above 90% throughout the period, among the highest in the dataset. This indicates that India's computer-programming exports are built on domestic capability, not on assembling imported components. The share of domestic value added reaching foreign final consumers (FFD_DVA) reached approximately 65% in India in 2022, exceeded only by Morocco's export-concentrated J62–63 subsector. The EU15 figure was about 26%, reflecting the large volumes of J62–63 output absorbed by domestic demand in mature economies.

The most dramatic indicator on the international-engagement side is upstream embedding in foreign exports—the extent to which India's value added is incorporated into other countries' export production, rather than going directly to final consumers (FEXGR_DVA). India's J62–63 value rose from approximately 40% of value added in 2012 to approximately 188% in 2022, a nearly fivefold increase that is the largest movement on any single indicator in the entire India dataset, and the largest J62–63 value in the country sample. The EU15 value rose from about 15% to about 47% over the same period. Indian software, IT support, and consultancy services have become inputs to other countries' exports at a pace unmatched in the dataset. This is a very positive structural finding that confirms India's position as an embedded technology partner to multinational enterprises across sectors and geographies.

2.2. The Enclave Character: Employment, Domestic Linkages, and Labor Income

The breadth dimension presents the counterweight. The same subsector that reaches high-income productivity employs a strikingly small share of the Indian workforce. Computer programming and information services accounted for approximately 7.5 million workers in 2022, or about 1.4% of a labor force of nearly 550 million. The wider KS aggregate (J58–63, M, and N together) accounted for approximately 4.4% of total employment. Agriculture absorbed some 248 million workers (45%) and manufacturing about 52 million (9.5%). The size mismatch between the productivity tier and the employment tier is the central structural feature of the enclave.

The employment multiplier—the number of additional jobs generated per unit of final demand directed at a sector—declined for J62–63 from 0.047 in 2012 to 0.025 in 2022, the lowest among India's KS subsectors. This is the structural arithmetic of a high-productivity sector: because each worker produces a large amount of value added, each dollar of demand requires few workers to satisfy it. The productivity premium that anchors the international-competitiveness story mathematically guarantees a low employment multiplier; the two facts are two sides of the same coin.

The domestic production linkage indicators tell a parallel story. The Hirschman-Rasmussen forward linkage index, which measures how far a sector functions as an input supplier to other domestic sectors, with a value of 1.0 representing the economy-wide average, stands at approximately 0.73 for J62–63 in India in 2022, well below average. This underscores what Hirschman emphasized as the weakness of domestic "*leading sectors*" that fail to transmit demand impulses to the rest of the economy (Hirschman, 1958). The corresponding EU15 value is approximately 1.23: in the high-income benchmark, computer programming services are a key domestic input supplier, ranking above average among all sectors in providing software, digital infrastructure, and analytic capacity to manufacturing, finance, retail, and other producers. In India, the subsector primarily serves foreign clients, with a substantially smaller share of its output supplying other domestic sectors. The backward linkage index (approximately 0.82) is also below average, though this is not a feature specific to India but rather reflects the sector's global cost structure, which is dominated by labor, electricity, and software licenses, rather than a wide range of domestic intermediate inputs.

The labor income share—the fraction of a sector's value added that flows to workers rather than to capital—declined in J62–63 from approximately 26% in 2012 to approximately 11% in 2022, the largest fall against

this indicator across all of India's services subsectors. The corresponding EU15/U.S. benchmark stood at approximately 64%. The productivity gains realized in India's flagship subsector have been captured disproportionately by capital. Some part of this capital share accrues to Indian firm owners; some part may accrue to foreign capital invested in or contracted by Indian operations; and some part may reflect the contractual structure of offshore services arrangements, in which the Indian operation captures a margin, while the bulk of the value flows to the foreign client. The existing data do not allow these channels to be distinguished, but the direction is clear: India's workforce captures a shrinking share of the value added generated by the country's leading export subsector. The labor income multiplier in Annex 3 Table 16—labor income generated per unit of final demand—tracked the same trajectory, declining from 0.31 in 2012 to 0.21 in 2022.

Taken together—high GDP share and productivity, high GVC participation, low employment multiplier, below-average forward linkage, falling labor income share—the indicators describe a subsector placed in the company of high-income benchmarks by its international engagement, but which is among the more weakly anchored activities in the country dataset in terms of domestic embedding and income distribution to workers. This is the empirical content of the enclave reading.

2.3. China as Comparator

Of the Asian economies in the dataset, China offers the most instructive comparator for India's J62–63. It is the only other economy of comparable scale and its configuration of the subsector differs from India's in structurally revealing ways. A full comparison between the two development trajectories can be found in section 5.4. Here we merely note the difference between India's and China's J62–63 data, to illuminate India's enclave character.

China's J62–63 is worth about 1.3% of GDP, with value added per worker of approximately $21,000, a quarter of India's level. Its domestic value added reaching foreign final consumers (FFD_DVA) was approximately 12% of value added in 2022, roughly one-fifth of India's 65%, indicating that China's computer-programming sector is primarily oriented toward the domestic market rather than global exports. Its labor income share was approximately 55%, or five times India's 11%. The contrast is sharp: China's J62–63 is smaller, less productive, far less internationally engaged, and considerably more labor-friendly in income distribution. India's subsector is the global export champion on the depth side; China's distributes its more modest gains far more broadly to workers. The structural tension between depth and distribution—strong export performance coexisting with a declining labor income share—is specific to India's configuration, not a generic feature of J62–63 in large developing economies.

2.4. The Rising Upstream Story: A Complication, Not a Reversal

The nearly fivefold rise in upstream embedding in foreign exports (FEXGR_DVA) over the decade is an important counterweight to the enclave reading and requires some explanation. It indicates that India's computer-programming services have moved deeper into the upstream tiers of global value chains. Indian software and consultancy are increasingly inputs to other firms' production processes in destination markets, and those firms subsequently export the resulting outputs. The trajectory is structurally positive and important.

Two qualifications temper this enclave-correcting force. First, the upstream embedding is in foreign rather than domestic value chains. The same indicator that captures rising integration into other countries' exports does not register integration into India's own production system. India's J62–63 has become a more important input to foreign production while the subsector's domestic forward linkage has remained substantially below the economy-wide average. The two facts are consistent and describe a structural pull: demand from foreign clients has grown faster than demand from domestic clients, tilting the subsector's orientation further outward over the decade.

Second, the rising upstream embedding has not arrested the decline in the labor income share. Upstream embedding in foreign exports (FEXGR_DVA) rose nearly fivefold while the labor income share fell from 26% to 11% over the same period. If deeper integration into foreign value chains had translated into broadly distributed gains within the Indian workforce, the labor income share should have held steady or risen. The opposite occurred. The most parsimonious reading is that the upstream embedding generated additional value added, but those gains were captured by capital—potentially including foreign capital in the

contractual chain. The trajectory confirms deepening global integration; it does not reverse the enclave reading on the factors that matter most for absorption and convergence.

2.5. What the Enclave Analysis Implies

The enclave analysis clarifies the role that J62–63 can plausibly play in a wider development strategy. The subsector is too small in employment terms, too weakly embedded in the rest of the production system, and too capital-favoring in income distribution to perform, on its own, the absorption and convergence functions that earlier industrializers obtained from manufacturing.

The policy implication is twofold. The aim of further deepening J62–63 through skills investment, digital infrastructure, and support for the firms that have built the country's computer-programming export capacity, remains valid. It is a sound sectoral strategy that will continue to deliver export earnings, productivity gains, upstream GVC integration, and the foreign exchange that India's import bill requires. But it is not, in itself, a services-led development strategy for aggregate convergence. A strategy that would deliver the absorption and employment-creation functions must simultaneously develop the other KS activities, the absorption-effective parts of enabling and local services, and the institutional frameworks that determine how much of the value generated reaches the workforce. Section 3 takes up these components.

3. The Absorption Challenge: Can Services Lift the Agricultural Hinterland?

The absorption question emerges directly from the employment configuration established above. India's labor force grew from about 471 million workers in 2012 to 548 million in 2022, or a net addition of roughly 77 million over the decade, or about 7.7 million per year. Agriculture's share of total employment fell from 51% to 45% over the period; yet because the labor force expanded around it, the absolute number of agricultural workers remained roughly stable at about 248 million in 2022. Manufacturing's share of total employment fell from 10.9% to 9.5%—an outright decline, not a compositional artifact. The dominant employment shift over the decade was from agriculture toward services, with manufacturing as a destination notably absent. Total services employment rose from 30% to 36% of the workforce.

If India is to achieve the structural transformation that earlier industrializers achieved, with agriculture's employment share falling to single digits and released workers absorbed into higher-productivity sectors, the cumulative reallocation requirement runs to some 200 million workers over the next three decades, on top of continuing additions from population growth and rising participation. This is the scale of the challenge. Section 2 established that J62–63 alone cannot carry this load. Even a doubling of J62–63 employment, from about 7.5 million to 15 million workers, would absorb only roughly three years of net additions to the labor force at current participation rates. The question is where, within the wider services portfolio, the absorption can plausibly occur.

3.1. Knowledge Services Beyond J62–63: M, N, J61, J58–60

The KS subsectors other than J62–63—professional and scientific services (M), administrative and support services (N), telecommunications (J61), and publishing and broadcasting (J58–60)—have absorption-relevant profiles that differ from J62–63 in significant ways.

The professional and scientific services (M) subsector displays the highest employment multiplier among India's KS subsectors, of approximately 0.30 in 2022, twelve times the value for J62–63. Thus, each additional million dollars of final demand directed at M generates approximately 300 jobs, compared with only 25 for J62–63 (Annex 3, Table 11). The labor income share for M is 43%, more than four times J62–63's 11% (Table 15), and the labor income multiplier is 0.39, nearly double J62–63's 0.21. On every absorption-relevant indicator, M substantially outperforms J62–63. The reason is the productivity differential: M's value added per worker was about $2,500 in 2022, against J62–63's $84,000. The subsector can absorb labor, but into relatively low-productivity work; its constraint is the inverse of J62–63's.

The administrative and support services (N) subsector records an employment multiplier of 0.15 and a value-added multiplier above 0.85, with a forward linkage index well above 1.0. This indicates that N is among the strongest domestic input suppliers in the Indian production system. The labor income share for N is, however, exceptionally low at about 5% of value added. This combination—substantial labor absorption under contractual structures that compress labor's share—reflects how the subsector is organized in India. N covers

security and cleaning services, employment placement, business support, and a wide range of contract-based outsourcing, in which a substantial portion of what end-clients pay flows to capital and to staffing agencies and intermediaries, rather than to the workers performing the labor. N's absorption contribution is real, but the income gains from that absorption depend critically on whether the regulatory and contractual frameworks can be reformed to allow a larger share of value added to reach the workforce.

Telecommunications (J61) and publishing and broadcasting (J58–60) record higher labor income shares (0.84 and 0.67 respectively) and value-added multipliers above 0.80. Their employment multipliers are among the lowest in the dataset (J61 at 0.04, J58–60 at 0.05), reflecting capital-intensive production technologies. These subsectors play supporting roles in a services-led strategy through productivity gains and infrastructure provision, but their direct absorption contribution is limited.

Across the four non-J62–63 KS subsectors, the composite picture is one of collective absorption of more labor per unit of demand than J62–63, distribution (in the case of M, J61, and J58–60) of larger shares of value added to labor, and deeper embedding (in the case of N) in the domestic production system. The KS strategy for India cannot be confined to deepening J62–63; it must include simultaneous expansion of M and N, alongside the development of the supporting subsectors.

3.2. Enabling Services: Transport, Logistics, and Finance

Enabling services accounted for about 11% of India's GDP across the decade, close to the EU15 share of about 10%. Within the group, land transport (H49) is the largest employer, and finance (K) the largest by added value.

Land transport (H49) records an employment multiplier of 0.10, a labor income share of 0.32, and a value-added multiplier of 0.78. The combination is moderately favorable for absorption: each unit of demand generates a meaningful number of jobs at a moderate income share, and the subsector's growth is tied to the broader expansion of trade, manufacturing, and consumption, so other sectors pull employment into H49 by induced effect. The absorption capacity of land transport is, however, materially constrained by the underlying physical infrastructure: road density and quality, rural-to-urban connectivity, freight corridors, and interstate logistics standardization. Infrastructure investment is therefore not a separate policy track from the absorption strategy; it is a precondition for that capacity to be realized.

Postal and courier services (H53), which in contemporary India principally covers e-commerce-driven and platform-mediated last-mile delivery, record a moderate employment multiplier (0.10) and the highest labor income share among ES (0.57 in 2022). Warehousing (H52) records an employment multiplier between 0.05 and 0.10 and a labor income share of 0.31. The indicator profile suggests that, conditional on the supporting infrastructure—urban road density, last-mile addressability, payment and identity systems, and data infrastructure for platform-mediated services—expansion of H52 and H53 would generate broad-based labor income gains.

Financial and insurance services (K) record an employment multiplier of 0.04, the lowest among enabling services, with a labor income share of 0.34 and a value-added multiplier—domestic value added generated per unit of final demand—of 0.90. Finance is a high-productivity subsector that makes a limited direct absorption contribution per unit of demand; its role in the wider strategy is as productivity-supporting infrastructure that raises the productivity of firms using formal credit, insurance, and capital-market services, and improves allocative efficiency of investment.

The composite picture for ES is that this group contributes moderate induced labor demand and meaningful productivity support but cannot on its own absorb the scale of labor that the agricultural reallocation requires. ES contributes to a services-led strategy as productivity-multipliers and as moderate absorbers, but they are not the primary absorption vector.

3.3. Local Services as the Residual Absorber

Local services account for some 32% of India's GDP and the bulk of services employment. They are non-tradable, weakly integrated into GVCs, and historically subject to Baumol's cost-disease constraints on productivity growth (Baumol, 1967). Yet the arithmetic of agricultural reallocation cannot make sense without major contributions from this group.

The LS sub-sectors fall into two groups by indicator profile. The first group, with high labor income shares and structurally favorable absorption profiles, includes education (P), human health and social work (Q), public administration (O), accommodation and food services (I), and arts, entertainment, and recreation (R). Education records a labor income share of 0.80, an employment multiplier of 0.14, and a value-added multiplier of 0.97 (Annex 3, Tables 15, 11, and 14 respectively). Health records a labor income share of 0.59, an employment multiplier of 0.17, and a value-added multiplier of 0.90. Public administration records the highest labor income share in the India services dataset at 0.91, and a value-added multiplier at 0.94. Accommodation and food services record an employment multiplier of 0.21 and a labor income share of 0.35. Arts, entertainment, and recreation record the highest employment multiplier in the LS group at 0.34. These subsectors absorb labor with structurally favorable income profiles. Their expansion is constrained principally by domestic demand—public expenditure for education, health, and administration; rising household incomes for accommodation, food services, and arts—and by the available stock of educated and trained workers.

The second group, with substantial absorption capacities but less-favorable income profiles, includes wholesale and retail trade (G) and real estate (L). Wholesale and retail trade is the largest LS employer, with a labor income share of 0.15 and an employment multiplier of 0.15. Trade absorbs substantial labor but distributes a relatively small share of its value added to that labor; its expansion follows household consumption rather than driving income growth in its own right. Real estate records a labor income share of about 2% and an employment multiplier of 0.01 per $1000 of additional final demand. This is the lowest absorption profile in the entire Indian economy, reflecting the small denominator of registered employment in formal real estate, and the high capital intensity of the subsector.

A development that warrants explicit consideration is the prospect that contemporary AI-enabled productivity tools may permit productivity gains in social-sector LS that the historical Baumol cost-disease analysis assumed could not be achieved. AI applications in education (adaptive learning systems, automated tutoring, content generation, and assessment), in health (diagnostic imaging support, clinical decision support, administrative automation, and remote patient monitoring), and in public administration (document processing, citizen-facing service automation, fraud detection, and case-management workflows) have the potential to raise the productivity ceiling of these subsectors in ways that earlier technologies could not. The framework data we study this paper do not yet show such effects because the period covered ends in 2022, before the most consequential AI productivity tools were deployed at scale. But if these tools deliver gains at even a fraction of the magnitudes seen in some early studies, the Baumol constraint on services-led convergence may be partially overcome.

3.4. The Productivity-Absorption Trade-off and Convergence

A pattern emerges from the cross-sectoral evidence that warrants explanation: across India's services subsectors, employment multipliers and labor income shares correlate negatively with value added per worker. The high-productivity subsectors absorb little labor per unit of demand and, in the case of J62–63 specifically, distribute a small share to labor. The low-productivity subsectors absorb large amounts of labor per unit of demand but at low individual productivity. The trade-off is not absolute. Education, health, public administration, and professional services occupy intermediate positions that combine moderate productivity, moderate absorption, and high labor income shares. But the general pattern constrains what any single subsector can deliver.

The implication for aggregate productivity is that the employment-weighted average of sectoral productivity in India will rise faster the more labor moves to the higher-productivity subsectors. Movement to J62–63 raises aggregate productivity directly because the subsector's productivity is high; the limitation is that the destination is small and absorbs few additional workers per dollar of expansion. Movement to professional services or administrative services raises aggregate productivity less per worker reallocated, because the destinations are themselves modestly productive, but the destinations can absorb substantially more workers per dollar of demand. Movement to education and health raises aggregate productivity in proportion to the differential between productivity in those subsectors and that of agriculture, with the additional benefit of building human capital that, with a lag, supports productivity convergence in other subsectors (as pointed out by the Framework Paper). The dual-economy decomposition presented in Annex 3 formalizes the structural arithmetic of these alternative pathways and identifies the third pathway—raising the productivity of the absorbing sectors directly, the diffusion path—as the lever with an aggregate impact that is multiplied by the (large) employment share of those absorbing sectors.

The dual-economy productivity model presented in Annex 2 formalizes the structural arithmetic. Expressing aggregate productivity as the employment-weighted average of a leading sector and an absorbing sector, the model identifies three pathways for raising aggregate productivity: structural change (raising the leading sector's employment share), leading-sector growth (raising the productivity of J62–63), and intra-sectoral upgrading (raising the productivity of the absorbing sectors—the diffusion path). Because the absorbing sectors employ the overwhelming majority of India's workforce, the diffusion path is multiplied by a large weight and constitutes the dominant lever for aggregate convergence. Raising the productivity ceilings of the sectors that absorb most of India's workforce—for example, through digital and AI tools, skills investment, and institutional improvement—is the highest-leverage action available for aggregate convergence.

The cumulative arithmetic favors combined expansion of subsectors, rather than maximizing any single one. Continued deepening of J62–63 supports the productivity ceiling and generates foreign exchange. Expansion of professional and administrative services absorbs labor at intermediate productivity. Expansion of social-sector LS absorbs labor at intermediate productivity with broad income distribution, with the productivity ceiling potentially raised by AI-enabled diffusion. Expansion of consumption-driven LS follows from rising household incomes. Each component contributes to the absorption arithmetic; no component suffices by itself.

The implication for convergence is more demanding for India than for comparable economies that have pursued manufacturing-led development. Manufacturing tends to display a relatively narrow productivity range, and a more uniform employment-generation profile across subsectors, so labor reallocation from agriculture into manufacturing reliably raises aggregate productivity, regardless of the specific destination. Services, by contrast, are intrinsically heterogeneous: India's service subsectors range from highly productive segments such as IT and finance—where output per worker can be 50 to 100 times higher—down to low-productivity informal work such as street retail and domestic services. The employment multipliers and labor income profiles vary accordingly. Labor reallocation within services delivers aggregate productivity gains only when it goes to the right destinations, which are precisely the destinations in which absorption capacity is most constrained. India's development strategy must therefore steer reallocation more deliberately than a 'standard' manufacturing-led strategy, distinguishing between services subsectors, rather than treating services as a category. The task for Indian policymakers is therefore more complicated than that for their Chinese counterparts.

Aggregate productivity convergence requires the employment-weighted average of sectoral productivity to rise fast enough and consistently enough to close the *per-capita* income gap with high-income economies. The arithmetic favors compositions in which more labor sits in higher-productivity subsectors. India's most productive subsectors are constrained in their absorption capacity, so the convergence rate India can plausibly achieve is bounded by the capacity of the intermediate-productivity subsectors—M, the favorable parts of ES, the social-sector LS—to expand at scale, and to increase their own productivity over time. The expansion-at-scale question is a matter of demand and supply for these subsectors' outputs and workers. The question of raising productivity is harder and connects to the broader questions of how technical change diffuses across services subsectors, and how policy can support that diffusion.

4. Premature Deindustrialization and the Constraint-Driven Case for Services-Led Development

The absorption challenge examined in section 3 would be less problematic if manufacturing could perform the labor-absorption function it has historically performed in successful industrializers. Section 4 examines the evidence that indicates that, in India, it is not, through three components: the comparative manufacturing trajectory, the policy test, and the structural mechanism. Together they support the diagnosis that India's services-led trajectory is the path left available, rather than the path freely chosen.

4.1. India in the Cross-Country Manufacturing Trajectory

India's manufacturing trajectory over the observation period was unusual within its peer group. Its manufacturing share of GDP fell modestly from approximately 18% in 2012 to 16% in 2022. Over the same period, other developing economies either expanded or maintained their manufacturing shares: Vietnam's rose from about 32% to 40%; Thailand's stayed in the upper twenties; Mexico remained above 22% throughout. China's share declined from about 32% toward 29%, reflecting deliberate rebalancing toward services from a high starting point, rather than failure of manufacturing absorption. The EU15 share remained close to 15.5%, the post-industrial benchmark. India's 16% in 2022 was essentially identical to the EU15,

despite India being a lower-middle-income economy at a stage of development at which manufacturing-led labor absorption has historically been the operative mechanism of structural transformation.

The manufacturing employment data tell a sharper story. India's manufacturing employment share fell from 10.9% in 2012 to 9.5% in 2022—a 1.4 percentage point decline. Vietnam's rose from 13.8% to 21.3%, a 7.5 percentage point gain. Mexico's rose from 13.9% to about 20%. Thailand's rose from 13.4% to 16%. Egypt's rose modestly from 11.1% to 12.6%. The cross-country picture emphatically does not show a uniform global decline in manufacturing labor absorption among developing economies. Most developing economies in the dataset increased their manufacturing employment shares, and the increases were substantial where they occurred. India and Peru are the developing-economy outliers, in which the manufacturing employment share contracted over the period.

The peer evidence qualifies but does not undermine the structural-impediment argument. The impediment is not that manufacturing-led development is universally unavailable to contemporary developing economies; it is that, compared to the era of the East Asian industrializers, the manufacturing-led path is now conditional on specific circumstances, including GVC integration, infrastructure, labor-market institutions, and incentives policies. Countries that meet the conditions can still achieve substantial manufacturing-led labor absorption; countries that do not meet the conditions cannot. The reasons appear to be a combination of factors: rigidities in labor regulation only partially addressed; infrastructure gaps in power, transport, and ports relative to the demands of competitive manufacturing GVCs; complications in land acquisition for industrial use; and institutional factors that have made it more difficult for India to attract and absorb the scale of foreign manufacturing investment that Mexico and East Asian economies have absorbed. The data analyzed in this paper do not permit a definitive attribution of weights across these factors; they only establish the outcome.

4.2. The Policy Test: Make in India and the PLI Schemes

India has not been a passive participant in this trajectory. The Make in India initiative, launched in September 2014, was the most explicit national manufacturing push undertaken by any developing economy during the observation period. It set a target of raising the manufacturing share of GDP to 25% by 2022, a level that would have placed India in the class of Mexico and the upper end of the Asian peer cluster. The Production Linked Incentive (PLI) schemes, introduced beginning in 2020 across thirteen sectors, including electronics, pharmaceuticals, automotive, textiles, and food processing, committed roughly ₹2 trillion (approximately $26 billion) in incentives designed precisely to close the cost gap between Indian production and Chinese and East Asian competitors.

The aggregate trajectory—a manufacturing share of GDP that ended the period at 16%, below where it started, and a manufacturing employment share that fell outright—provides the simplest test of the macroeconomic effects of these initiatives. The result is that, over the observation period, the aggregate trajectory did not reverse. Subsectoral effects are real: mobile-phone production and assembly have grown substantially; pharmaceutical and automotive subsectors have shown firm-level investment responses. These developments generate value added, employment, and learning effects that do not show up cleanly in the aggregate share data. The aggregate level finding is therefore conditional: the policies have produced subsectoral wins but did not, in the first half-decade of implementation, deliver the macroeconomic shift in manufacturing share that the initiatives were designed to achieve.

The policy evidence is consistent with a structural impediment that is partly offset through targeted intervention but largely binding at the aggregate level over the period covered by this paper. The implication for strategic posture is not that manufacturing-supportive policy should be abandoned; subsectoral wins indicate that targeted intervention generates real returns. The implication is that manufacturing-supportive policy alone cannot, in India's circumstances, perform the labor-absorption and convergence function that earlier industrializers obtained from manufacturing.

4.3. The Structural Mechanism: Capital Intensification of Manufacturing

The third component of the constraint argument is structural. It applies, in different degrees, to all contemporary developing economies. Manufacturing as a global production activity has become more skill- and capital-intensive than in the era of the early East Asian industrializers. The share of value added in manufacturing flowing to capital rather than labor has risen across most major manufacturing economies, a trend documented by Rodrik (2016, 2018) over a multi-decade horizon. The cross-country evidence from the

OECD Input-Output tables is consistent and striking. In the EU15, the labor income share of manufacturing value added fell from about 60% in 2012 to 55% in 2022, driven by capital deepening in Germany, France, Italy, and the other major manufacturing economies of the group. China showed the same pattern: its manufacturing labor income share declined from 40% in 2012 to 37% in 2022, even as manufacturing output expanded substantially, confirming that automation is decoupling manufacturing employment from manufacturing production in the economy that currently sets the competitive terms for global manufacturing.

India's manufacturing labor income share over the same period remained broadly flat at approximately 25%. This low absolute level reflects the continuing role of low-wage labor in India's manufacturing mix and indicates that the capital-deepening process visible in the EU15 and China has not yet advanced to the same degree in India. It also shows that India's manufacturing sector has not generated the productivity-led wage gains that a successful labor-absorption strategy would require. The trajectory is set across the global economy: robotization, computer-numerical-control machine tools, programmable assembly systems, and AI-enabled production processes are collectively reducing the labor requirement per unit of manufactured output. India will industrialize into an environment in which this process is further advanced than it was in the 1960s through the 1980s, when the East Asian economies built their manufacturing employment shares.

The implication is not that manufacturing has ceased to absorb labor: data from Vietnam and Mexico, where manufacturing employment shares rose by 7.5 and 6 percentage points respectively over the same decade, show that substantial absorption remains achievable in economies that meet the GVC integration and infrastructure conditions. However, the rate of labor absorption per unit of manufacturing-share expansion is lower in the current technological environment than in the 1960s, 1970s, or 1980s. For Vietnam, the 7.5 percentage point rise in manufacturing employment share accompanied an 8-percentage point rise in manufacturing's GDP share. This ratio reflects today's more capital-intensive manufacturing, not the labor-intensive factory model that South Korea, Taiwan, and early-period China deployed. A given share of GDP devoted to manufacturing yields fewer manufacturing jobs today than the same share yielded forty years ago.

A factor that compounds this for India is the country's scale. Mexico's labor force comprises about 55 million workers; Vietnam's is 50 million; Thailand's is 40 million. Each of these economies could materially shift its manufacturing employment share over a decade through expansion in the single-digit millions of jobs. India's labor force exceeds 500 million workers. To raise India's manufacturing employment share by even one percentage point requires net creation of about 5 million manufacturing jobs. To replicate Vietnam's 7.5 percentage point gain would require about 40 million net new manufacturing jobs, several times more than any developing economy has achieved over a comparable period in the contemporary technological environment. The size factor cuts in two directions: the absolute manufacturing expansion required to register share gains is much larger for India than for smaller peer economies; on the other hand, India's domestic market can support manufacturing-led development without exclusive reliance on export demand, an advantage smaller peers do not have. The composite implication is that India's manufacturing-share trajectory is structurally more difficult to shift, and that the manufacturing strategy plausibly available to India is qualitatively different from the export-led GVC integration strategy pursued by smaller peers.

The structural impediment applies with particular force for two further reasons:

1. India is industrializing late: the East Asian industrializers built their manufacturing employment shares when the global capital-labor ratio in manufacturing was substantially lower than today; their industrial bases stabilized at high employment shares before the capital-intensification trend accelerated.

2. India is industrializing when leading manufacturing economies are themselves automating domestic production; the migration of manufacturing employment from high-income to low-income economies that occurred over recent decades has slowed as automation has reduced the cost-savings rationale for offshoring lower-skilled production stages.

The combination of late industrializers encountering a more capital-intensive global manufacturing system within which offshoring incentives are weakening is the structural basis of the constraint.

4.4. What Manufacturing Could Still Do

While manufacturing cannot perform the central absorption and convergence function in India's structural transformation, manufacturing can still contribute. First, the productivity of India's manufacturing workforce rose over the observation period, even as its employment share fell; manufacturing's contribution to aggregate productivity has continued through the productivity channel. The PLI-supported subsectoral wins in electronics, pharmaceuticals, and automotive reinforce this channel. Second, manufacturing remains strategically essential for foreign-exchange earnings outside J62–63, and for the technological learning effects that diffuse into other sectors; J62–63 alone cannot finance India's import bill at India's scale. Third, manufacturing is the sector through which India will participate in any global structural shifts in the coming decades, including through reshoring, friend-shoring, the energy transition, and the rebalancing of supply chains away from China. This may rebuild some of the manufacturing-led absorption capacity that has been lost.

The strategic implication is that India should continue to pursue manufacturing-supportive policies but alter its expectations. The notion that aggressive manufacturing policy can return India's manufacturing employment share to the East Asian peak ranges within a single generation is not consistent with the evidence. The reasonable expectation is that manufacturing-supportive policy can contribute productivity gains, foreign-exchange earnings, technological learning effects, and a moderate continuing absorption contribution, but not the dominant absorption function, which must be discharged elsewhere.

4.5. The Constraint-Driven Thesis

The three components of the argument—the comparative evidence that India has underperformed its peers in manufacturing labor absorption, the policy evidence that targeted intervention has not arrested the underperformance at the aggregate level, and the structural evidence that contemporary manufacturing absorbs labor less efficiently than in earlier industrializing eras—jointly support the thesis that India's services-led trajectory is constraint-driven rather than chosen. India did not, as a matter of revealed preference, prefer services over manufacturing. India attempted manufacturing-led development through both market responses and deliberate national policy, and the manufacturing-led path did not deliver labor absorption at the required scale. The services-led trajectory is the trajectory now left available.

This reading reframes the policy agenda. A services-led strategy would emphasize the relative merits of services over manufacturing and treat the choice between the two as the central strategic question. On the constraint-driven thesis, the agenda emphasizes simultaneous engagement on multiple fronts: deepening J62–63, scaling the wider KS portfolio, expanding the absorption-capable parts of enabling and local services, and continuing to support manufacturing for its productivity and foreign-exchange contributions, even where absorption contribution is limited. The framing becomes complementary rather than competitive. Manufacturing-supportive policy is not a rival of services-led policy; both are necessary components of a strategy that, given the structural impediments, has no single dominant lever to pull.

5. Synthesis: The Big-Push Policy Agenda

The three preceding sections yield an evidence-based policy agenda that is more demanding than the prevailing account of India as an unambiguous services champion would suggest. Sections 2, 3, and 4 have established the structural conditions; this section identifies what those conditions imply for strategy and coordination and closes with the India-China comparison that places India's structural diagnosis in comparative perspective.

5.1. The Policy Approach

The approach begins with continued deepening of J62–63. Deepening the computer-programming and information services sector through skills investment, digital infrastructure, and policy support for the firms that have built the country's export capacity, remains valid and important. The principal contributions are foreign exchange, technological capability, upstream GVC integration, and a meaningful economy-wide income base. But this is a sectoral strategy, not an aggregate-convergence strategy.

The approach continues with the deliberate scaling of the KS activities beyond J62–63—professional services (M), administrative services (N), and the supporting telecommunications and publishing activities. These activities absorb labor at scale, and the institutional and contractual frameworks under which the absorption occurs determine how much of the value generated reaches the absorbed workforce. In the case of N, this means reforming the staffing and intermediary arrangements that currently compress the labor income share to about 5% of value added. In the case of M, it means investing in tertiary education and professional certification infrastructure, which will expand the supply of workers who can enter these activities at higher-productivity levels.

The approach extends to the absorption-effective parts of enabling and local services. Social-sector activities—education, health, and public administration—account for the largest share of this opportunity: they offer the highest labor income shares and employment multipliers in the dataset, and their expansion depends on sustained public expenditure and human capital deepening, which simultaneously raises supply and sector productivity. The productivity-enhancing potential of contemporary AI in these subsectors may permit output and quality to rise alongside employment, partially overcoming the Baumol constraint in ways historical experience would not have suggested.

Financial and insurance services, at roughly 5% of GDP, represent a different profile: high value-added but capital- and skill-intensive, with a more limited employment multiplier; the absorption agenda here lies less in direct job creation than in deepening access, broadening the base of firms and households that can productively use financial services, which in turn supports labor absorption across other sectors. Enabling services, such as postal and courier logistics, reshaped by e-commerce, offer modest additional employment at the last mile, but their GDP weight is too small to be a primary lever.

The plan should include infrastructure investment as an integral component rather than a separate track. The absorption capacity of transport, logistics, and the social-sector activities depends on physical and digital infrastructure in which India has historically underinvested. Infrastructure investment is the precondition for realizing the absorption capacity of land transport, e-commerce logistics, and the platform-mediated services that have become the fastest-growing employment vector in contemporary India.

The approach should include manufacturing-supportive policy, calibrated to the realistic expectation that manufacturing's contribution will be supplemental rather than primary. The PLI-supported subsectoral wins in electronics, pharmaceuticals, and automotive are real and should be extended. The foreign exchange and technological-learning contributions of a stronger manufacturing base are valuable and should be supported. But the absorption expectation placed on manufacturing policy should reflect the contribution it can plausibly make, given the structural impediments reviewed in section 4.

5.2. The Big-Push Logic

When manufacturing capability accumulation is constrained by structural factors of the kind examined in section 4, the coordination problem of services-led development becomes central. The services subsectors that can absorb labor at scale (M, N, and the social-sector local services) cannot reach productivity levels that generate convergence without spillovers from the high-productivity sub-sectors (J62–63, J61, financial services). The high-productivity sub-sectors that could generate those spillovers cannot expand on a scale without the demand-side support from a broader services-using economy that the absorbing subsectors create.

The big-push logic (Rosenstein-Rodan, 1943) implies that India's services-led strategy requires deliberate, coordinated investment across the multiple components of the services portfolio, with the public sector taking responsibility for the coordination function that the market cannot supply. The big-push logic identifies as the binding requirement the coordination of these components, not the existence of any single one—a point that the Murphy *et al* (1989) formalization makes explicit in a modern growth-theoretic setting. The components must move together: skills investment to support the expansion of higher-productivity KS; physical and digital infrastructure to support productivity gains in the absorbing subsectors; institutional investment in the regulatory and contractual frameworks that allow the embedding of higher-productivity activities in the wider production system; and demand-side support for the social-sector local services that absorb labor at favorable income shares. The institutional capacity required to coordinate is substantial, and the political economy of coordination is at least as demanding as technical economics. The strategy implied by structural evidence is not a list of sectoral interventions to be pursued in sequence, but a portfolio of complementary investments to be pursued in parallel.

5.3. The China-India Comparison: Two Development Routes, One Policy Coordination Need

India's structural position is most sharply illuminated by comparison with China—the only other economy in the country dataset of comparable scale, and the most instructive alternative development route. The two economies entered the observation window from opposite structural positions. China stood at 32% of GDP in manufacturing—more than twice the EU15 post-industrial benchmark—with a services sector that was small relative to its income level, state-directed credit and investment, and a global identity defined by its role as the factory hub of electronics, machinery, and consumer goods (Dinh, 2026b). India stood at 50% of GDP in services and 18% in manufacturing, with an internationally competitive computer-programming export sector unmatched in terms of absolute scale among developing economies, and a political economy of reform that was more fragmented and more contested than China's.

The decade from 2012 to 2022 tested what each configuration could deliver, and the outcomes on both sides are more complicated than they first appear. China's manufacturing output share was stabilized at approximately 29%—a policy success on the output dimension—but manufacturing employment declined as automation decoupled output from jobs, and the released labor flowed almost entirely into local services: wholesale trade, hospitality, and personal services at productivity levels well below those of the subsectors that shrank. Knowledge services grew rapidly in headcount, but from a small base and at productivity levels that remain a fraction of advanced-economy benchmarks. China approaches the high-income threshold while experiencing a structural tension between the local-services composition of its labor absorption and the knowledge-services composition that productivity-led growth requires. India, meanwhile, deepened J62–63 considerably. Value added per worker approximately tripled, and upstream embedding in foreign exports rose fivefold. But the leading subsector's enclave characteristics intensified as it grew: its labor income share fell from 26% to 11%, its domestic forward linkage remained below average, and the manufacturing sector failed to deliver the labor-absorption response that would have complemented the services export success.

Two lessons arise from this comparison and are of direct relevance to India's policy agenda:

1. China faces the local-services trap. Labor displaced from manufacturing flows into low-productivity services unless deliberate skills and geographic distribution policies redirect it toward knowledge and enabling subsectors. India, meanwhile, faces enclave isolation: a high-productivity export sector deepens and scales without strengthening its linkages to the rest of the domestic economy, and without distributing its income gains broadly to the workforce. Both outcomes are avoidable, but only if they are monitored and addressed with the coordinated public investment that markets alone will not supply.

2. The comparison confirms that the big-push coordination logic applies to both routes. China required state capacity to sustain manufacturing's output share, manage the transition of displaced workers into services, and invest in the enabling-services infrastructure that manufacturing competitiveness demands. India requires state capacity to deepen J62–63, widen the knowledge-services portfolio, improve enabling-services infrastructure, steer the absorption-effective parts of local services, and raise agricultural productivity so that labor released from farming can be productively absorbed. Neither agendum is modest; neither is available at low institutional cost. The shared structural finding of the China and India decades is that successful development, whether manufacturing-led or services-led, requires the coordination of investments that the market will not spontaneously align.

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Annex 1

Indicator Definitions

The 16 indicators used in this paper are derived from the OECD Trade in Value Added (TiVA), Trade in Employment (TiM), and input–output (ICIO) databases. They are organized into four blocks following the Framework Paper.

Block A: Sectoral Composition of GDP and Productivity

Table 1: Services shares of GDP. The share of each services subsector in total GDP. Source: OECD TiVA FDVA.

Table 4: Value added per worker ($000 per worker). Computed as value added (from TiVA) divided by employment (from TiM). Captures sectoral productivity.

Block B: GVC Participation

Table 5: Domestic value-added share in gross exports (EXGR_DVA, %). The share of a country's exports produced with domestic rather than foreign inputs. Source: OECD TiVA.

Table 6: Domestic value added reaching foreign final consumers (FFD_DVA, %). Captures the extent to which a sector's output ultimately satisfies foreign demand. Source: OECD TiVA.

Table 12: Foreign value-added share in gross exports (EXGR_FVA, %). The complement of EXGR_DVA; the share of a country's exports produced with imported inputs. Source: OECD TiVA.

Table 13: Upstream embedding in foreign exports (FEXGR_DVA). The extent to which a country's value added is incorporated into other countries' export production. Source: OECD TiVA.

Block C: Domestic Production Linkages and Multipliers

Tables 9 and 14: Hirschman–Rasmussen Backward Linkage Index (BL). Both follow the classic inter-industry linkage formulation of Hirschman (1958) and Rasmussen (1956). The normalized column sum of the Leontief inverse. Economy-wide average is 1.0. A value above 1.0 identifies a sector as a key upstream-demand-pull sector. Source: computed from OECD ICIO 2025.

Tables 10 and 15: Hirschman–Rasmussen Forward Linkage Index (FL). The normalized row sum of the Leontief inverse. Economy-wide average is 1.0. A value above 1.0 identifies a sector as a key domestic input supplier. Source: computed from OECD ICIO 2025.

Table 11: Employment multiplier. The number of jobs generated per unit of final demand, computed as the product of the Leontief inverse and the employment-output ratio.

Table 14: Value-added multiplier. Domestic value added generated per unit of final demand.

Table 15: Labor income share. Labor income as a share of value added; captures the distribution of value added between workers and capital.

Table 16: Labor income multiplier. Labor income generated per unit of final demand.

Block D: Employment Structure and External Demand Linkages

Tables 2 and 3: Employment by broad sector and within services (% of total). Source: OECD TiM.

Tables 7 and 8: Employment embodied in gross exports (EXGR_DEM) and in foreign final demand (FFD_DEM). Captures how much labor is used to produce the goods and services that satisfy foreign demand. Source: OECD TiM.

Sectoral Classification

Knowledge Services (KS): J58–60 (publishing, motion picture, video, television, broadcasting); J61 (telecommunications); J62–63 (computer programming, consultancy, and information services); M (professional, scientific, and technical activities); N (administrative and support services).

Enabling Services (ES): H49 (land transport and transport via pipelines); H50 (water transport); H51 (air transport); H52 (warehousing and support activities for transportation); H53 (postal and courier activities); K (financial and insurance activities).

Local Services (LS): G (wholesale and retail trade; repair of motor vehicles); I (accommodation and food services); L (real estate activities); O (public administration and defense); P (education); Q (human health and social work); R (arts, entertainment, and recreation); S (other service activities); T (activities of households as employers).

Aggregation weights: within each category, sub-sector GDP shares are used as weights, normalized to sum to 1 within the category.

Annex 2

Dual-Economy Productivity Model

In section 3.4, we discussed the structural challenge of aggregate productivity convergence when high-productivity subsectors fail to absorb a significant share of the workforce. The following model makes explicit this issue.

1. The Aggregate Productivity Equation

Aggregate productivity (P) is defined as the employment-weighted average of the leading sector (L) and the absorbing sector (A):

$$P = \varphi P_L + (1 - \varphi) P_A$$

Where:

- P_L : Productivity level of the leading sector.
- P_A : Productivity level of the absorbing sector.
- φ : The share of the total workforce employed in the leading sector ($0 \leq \varphi \leq 1$).
- $1 - \varphi$: The share of the workforce in the absorbing sector.

2. The Productivity Gap

In a dual economy with high divergence, we define the productivity gap as a factor λ :

$$P_L = \lambda P_A, \text{ where } \lambda \gg 1$$

Substituting this into the aggregate equation yields:

$$P = P_A[1 + \varphi(\lambda - 1)]$$

This expression clarifies that aggregate productivity growth is constrained by φ. If the employment share of the leading sector is minimal, even infinite gains in λ (leading sector productivity) will not significantly shift P.

3. The Explicit Trade-off

The 'absorption question' asks how to maximize P. The trade-off between expanding the leading sector versus upgrading the absorbing sector is found by taking the total derivative of P :

$$dP = (P_L - P_A)d\varphi + \varphi dP_L + (1 - \varphi)dP_A$$

This reveals three distinct pathways for development strategy:

- Structural Change (The Absorption Path): Increasing φ. The gain depends on the productivity premium ($P_L - P_A$).
- Leading Sector Growth: Increasing P_L. This has a high local impact but its aggregate effect is scaled down by a small φ.
- Intra-sectoral Upgrading (The Diffusion Path): Increasing P_A. While the individual gains might be smaller than the leading sector, the impact is multiplied by the large workforce share $(1 - \varphi)$.

Conclusion: If labor mobility is low (fixed φ) and productivity does not diffuse (fixed P_A), aggregate productivity remains stagnant regardless of the performance of the leading subsectors.

ANNEX 3

Table 1
India: Services Shares (%) of GDP, 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services	**7.3**	**8.0**	**8.3**	**8.8**	**9.1**	**8.7**	**8.9**	**9.3**	**9.7**	**9.9**	**9.7**
Information and communication (J)	4.6	5.0	5.3	5.7	6.0	5.6	5.8	6.2	6.7	6.9	6.8
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4
Telecommunications (J61)	1.1	1.2	1.3	1.3	1.2	0.9	0.9	1.0	1.1	1.1	1.1
Computer programming, consultancy, and information service activities (J62-63)	3.1	3.4	3.6	4.0	4.3	4.2	4.4	4.7	5.2	5.3	5.2
Professional, scientific and technical activities (M)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Administrative and support service activities (N)	2.4	2.7	2.7	2.7	2.8	2.7	2.8	2.7	2.7	2.7	2.6
Enabling Services	**11.2**	**11.1**	**11.3**	**11.1**	**11.0**	**10.7**	**10.7**	**10.7**	**10.0**	**10.2**	**10.8**
Transportation and storage (H)	5.4	5.5	5.6	5.5	5.7	5.2	5.1	5.1	4.2	4.9	5.6
Land transport and transport via pipelines (H49)	4.2	4.3	4.4	4.3	4.4	4.0	4.0	4.0	3.2	3.9	4.4
Water transport (H50)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Air transport (H51)	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Warehousing and support activities for transportation (H52)	0.9	0.8	0.9	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.7
Postal and courier activities (H53)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Financial and insurance activities (K)	5.8	5.7	5.7	5.7	5.3	5.5	5.5	5.6	5.8	5.3	5.2
Local Services	**30.5**	**30.4**	**31.0**	**31.0**	**31.3**	**31.7**	**32.2**	**32.7**	**32.1**	**31.8**	**32.4**
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	10.0	10.0	10.2	10.2	10.3	10.4	10.6	10.6	10.3	10.3	10.2
Accommodation and food service activities (I)	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0
Real estate activities (L)	7.4	7.4	7.5	7.2	7.1	6.9	6.9	6.8	6.6	6.7	6.6
Public administration and defence; compulsory social security (O)	5.8	5.6	5.7	5.6	5.7	6.0	6.0	6.2	6.4	6.0	6.6
Education (P)	3.3	3.3	3.4	3.6	3.8	4.0	4.3	4.6	4.4	4.4	4.8
Human health and social work activities (Q)	1.4	1.3	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5
Arts, entertainment and recreation (R); Other service activities (S); Activities of households as employers (T)	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.7	1.7	1.7
Total Services	**49.0**	**49.5**	**50.5**	**50.9**	**51.3**	**51.0**	**51.7**	**52.7**	**51.8**	**51.9**	**53.0**
For memorandum: Manufacturing Share of GDP	**17.9**	**17.4**	**17.3**	**18.2**	**17.8**	**17.7**	**17.4**	**16.0**	**16.3**	**16.9**	**15.7**

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 2
India: Employment by Broad Sectors, 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
In thousands											
Total - all activities	**470711.6**	**468330.5**	**466546.1**	**465347.8**	**464730.5**	**464692.8**	**475874.0**	**488499.6**	**524623.9**	**532431.2**	**547619.2**
Agriculture, forestry and fishing	239916.8	234683.2	229549.3	224614.6	219079.4	207757.4	215205.4	215160.3	242483.2	242700.3	247636.1
Mining and quarrying	2643.3	2513.9	2399.5	2290.1	2190.7	2415.9	2492.3	2542.6	2038.4	2180.6	2216.5
Manufacturing	51115.9	50517.5	50107.3	49798.5	49820.3	49610.3	45973.5	46148.1	46371.8	49892.6	51908.8
Utilities and other activities	2501.0	2608.6	2729.3	2857.7	2980.2	3111.5	2952.9	2815.0	3228.3	3204.9	3074.3
Construction	34182.2	34603.6	35087.6	35597.2	36379.9	36524.2	37467.9	39655.5	42116.1	44244.8	47066.4
Services of the business economy - sections G to N	75343.2	77270.2	79339.2	81597.4	84126.8	89685.9	91611.7	95827.4	104199.8	105863.2	109373.3
Public admin, educ. & health; soc. & pers. serv.	65009.2	66133.7	67333.9	68592.3	70153.3	75587.6	80170.3	86350.7	84186.4	84344.8	86343.8
% of total											
Total - all activities	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Agriculture, forestry and fishing	51.0	50.1	49.2	48.3	47.1	44.7	45.2	44.0	46.2	45.6	45.2
Mining and quarrying	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Manufacturing	10.9	10.8	10.7	10.7	10.7	10.7	9.7	9.4	8.8	9.4	9.5
Utilities and other activities	0.5	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6
Construction	7.3	7.4	7.5	7.6	7.8	7.9	7.9	8.1	8.0	8.3	8.6
Services of the business economy - sections G to N	16.0	16.5	17.0	17.5	18.1	19.3	19.3	19.6	19.9	19.9	20.0
Public admin, educ. & health; soc. & pers. serv.	13.8	14.1	14.4	14.7	15.1	16.3	16.8	17.7	16.0	15.8	15.8
Total services	**29.8**	**30.6**	**31.4**	**32.3**	**33.2**	**35.6**	**36.1**	**37.3**	**35.9**	**35.7**	**35.7**

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 3
India: Employment Shares (% of Total Employment) by Services Sector, 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services	**3.0**	**3.3**	**3.5**	**3.6**	**3.8**	**4.1**	**4.0**	**4.0**	**3.7**	**4.1**	**4.2**
Information and communication (J)	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.5
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Telecommunications (J61)	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Computer programming, consultancy, and information service activities (J62-63)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Professional, scientific and technical activities (M)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Administrative and support service activities (N)	1.6	2.0	2.2	2.2	2.4	2.7	2.6	2.6	2.5	2.8	2.9
Enabling Services	**4.6**	**4.6**	**4.6**	**4.8**	**4.9**	**5.3**	**5.4**	**5.4**	**5.3**	**5.2**	**5.1**
Transportation and storage (H)	3.8	3.9	3.9	4.0	4.1	4.6	4.6	4.5	4.4	4.3	4.2
Land transport and transport via pipelines (H49)	3.2	3.3	3.3	3.4	3.5	3.9	3.8	3.8	3.7	3.6	3.5
Water transport (H50)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Air transport (H51)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Warehousing and support activities for transportation (H52)	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Postal and courier activities (H53)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Financial and insurance activities (K)	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.8	0.9	0.8
Local Services	**22.2**	**22.7**	**23.3**	**23.9**	**24.6**	**26.2**	**26.7**	**27.9**	**26.9**	**26.5**	**26.5**
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	7.3	7.5	7.7	7.9	8.2	8.6	8.7	9.0	9.7	9.4	9.5
Accommodation and food service activities (I)	1.0	1.0	1.0	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.2
Real estate activities (L)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Public administration and defence; compulsory social security (O)	2.5	2.5	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.6	2.6
Education (P)	3.0	3.1	3.3	3.4	3.6	3.9	4.1	4.2	4.0	3.7	3.9
Human health and social work activities (Q)	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9	1.8	1.8	1.8
Arts, entertainment and recreation (R)	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.8	0.8	0.8
Other service activities (S)	5.0	5.1	5.3	5.4	5.5	6.0	6.3	6.7	5.8	5.9	5.8
Activities of households as employers; undiff. goods- and services- (T)	1.3	1.3	1.2	1.2	1.2	1.1	1.2	1.2	1.1	1.1	1.1
Total Services	**29.8**	**30.6**	**31.4**	**32.3**	**33.2**	**35.6**	**36.1**	**37.3**	**35.9**	**35.7**	**35.7**

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 4
India: Value Added per Worker ($000), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	25.5	30.4	33.7	35.9	41.0	45.0	48.6	55.0	63.2	64.6	75.4
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	15.1	16.0	16.5	18.0	21.9	25.3	26.9	29.0	29.3	29.3	34.2
Telecommunications (J61)	24.4	30.7	35.0	39.5	45.2	44.4	44.1	52.0	62.4	63.3	73.9
Computer programming, consultancy, and information service activities (J62-63)	28.5	33.8	37.4	38.5	43.8	49.3	54.2	61.1	70.4	72.3	84.4
Professional, scientific and technical activities (M)	1.7	1.9	2.0	2.0	2.1	2.4	2.6	2.6	2.3	2.4	2.4
Administrative and support service activities (N)	5.4	5.2	5.1	5.2	5.3	5.3	5.6	5.6	5.1	5.2	5.3
Enabling Services											
Transportation and storage (H)	5.2	5.4	5.9	6.0	6.3	5.9	6.0	6.1	4.6	6.1	7.6
Land transport and transport via pipelines (H49)	4.8	5.0	5.4	5.4	5.7	5.3	5.6	5.7	4.1	5.8	7.2
Water transport (H50)	7.7	7.1	8.5	7.5	10.6	12.8	11.9	11.5	11.1	13.8	17.4
Air transport (H51)	11.2	11.3	14.7	24.1	23.4	23.5	12.8	20.8	13.2	11.4	13.6
Warehousing and support activities for transportation (H52)	8.5	8.2	9.3	9.2	10.8	8.1	7.9	7.6	6.2	7.3	9.1
Postal and courier activities (H53)	5.6	5.9	6.2	6.2	6.5	6.5	6.8	7.0	6.4	7.6	8.1
Financial and insurance activities (K)	26.7	29.1	31.5	30.8	31.7	38.0	36.6	35.2	33.7	33.7	36.7
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	5.0	5.2	5.4	5.5	5.7	6.3	6.5	6.4	5.1	5.9	6.2
Accommodation and food service activities (I)	4.0	3.8	3.8	3.9	4.1	4.4	4.9	5.1	4.6	5.1	4.9
Real estate activities (L)	239.8	273.6	310.6	318.6	361.4	401.8	417.9	395.9	393.4	423.3	421.0
Public administration and defence; compulsory social security (O)	8.4	8.5	9.3	9.6	10.3	11.7	11.8	12.3	11.8	12.5	14.9
Education (P)	4.0	4.1	4.3	4.6	4.9	5.3	5.6	6.0	5.4	6.4	7.2
Human health and social work activities (Q)	3.9	3.8	4.2	4.4	4.6	4.7	4.8	4.6	4.3	4.8	5.1
Arts, entertainment and recreation (R)	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.7	1.7	1.9	2.0
Other service activities (S)	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.3
Activities of households as employers; undiff. goods- and services- (T)	0.6	0.6	0.6	0.6	0.7	0.8	0.7	0.7	0.7	0.7	0.8

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 5
India: Domestic VA share in Gross Exports (EXGR_DVA; % of gross exports), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	91.7	92.7	92.9	93.4	93.2	92.0	94.0	93.6	93.1	92.1	90.9
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	83.3	85.5	84.3	86.2	85.3	86.6	85.9	86.5	87.8	86.4	84.3
Telecommunications (J61)	77.1	80.0	78.9	83.3	84.8	79.3	84.0	88.2	86.7	86.0	84.8
Computer programming, consultancy, and information service activities (J62-63)	93.0	93.7	94.0	94.3	94.1	92.7	94.8	94.3	93.7	92.8	91.6
Professional, scientific and technical activities (M)	87.5	88.9	88.7	91.0	90.5	89.8	89.3	91.2	90.8	90.2	88.9
Administrative and support service activities (N)	88.0	86.5	87.6	90.4	89.8	89.8	88.3	90.2	90.2	89.5	88.2
Enabling Services											
Transportation and storage (H)	76.1	78.2	78.9	81.9	78.4	80.2	75.9	80.3	77.9	73.1	73.0
Land transport and transport via pipelines (H49)	79.1	80.4	81.2	85.7	83.3	83.0	82.7	85.6	82.8	80.7	81.8
Water transport (H50)	57.9	59.8	46.2	38.6	50.1	60.4	57.0	59.8	62.1	57.1	58.9
Air transport (H51)	64.4	68.3	70.8	76.4	70.2	73.7	56.4	67.0	68.6	58.5	54.4
Warehousing and support activities for transportation (H52)	81.3	82.2	84.6	85.3	79.0	82.5	79.8	83.7	80.5	76.1	76.3
Postal and courier activities (H53)	86.0	88.2	87.2	89.9	89.4	87.3	84.3	87.4	86.9	85.4	84.2
Financial and insurance activities (K)	86.6	88.6	89.2	90.5	89.3	88.1	90.2	90.3	94.1	93.0	91.6
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	92.3	93.2	93.3	94.8	95.6	93.6	92.8	92.8	95.6	95.3	94.0
Accommodation and food service activities (I)	90.9	91.5	93.8	94.4	92.5	91.8	92.1	92.6	91.1	89.5	87.9
Real estate activities (L)	94.8	94.9	95.7	96.4	96.0	96.9	96.6	96.3	97.8	97.5	97.1
Public administration and defence; compulsory social security (O)	92.1	92.9	93.5	94.4	94.9	96.3	95.8	96.4	95.1	93.9	95.0
Education (P)	93.2	94.2	94.7	94.5	95.1	95.5	95.3	96.4	96.3	96.0	97.4
Human health and social work activities (Q)	90.8	90.4	91.2	93.2	94.1	94.8	94.5	91.5	92.9	92.3	91.3
Arts, entertainment and recreation (R)	87.5	89.3	90.0	91.2	89.4	89.9	89.6	89.9	90.5	89.8	88.4
Other service activities (S)	85.6	88.0	87.8	89.1	91.8	92.9	93.4	92.5	91.4	90.8	89.4
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 6
India: Domestic VA Share in Foreign Final Demand (FFD_DVA; % of value added), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	65.0	63.6	61.1	53.4	50.7	57.1	57.6	46.6	51.1	53.0	55.3
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	44.3	43.7	38.0	38.4	33.1	32.6	33.4	30.9	38.6	41.7	44.4
Telecommunications (J61)	13.6	14.0	13.9	13.1	12.6	11.6	12.5	12.5	11.4	12.2	13.4
Computer programming, consultancy, and information service activities (J62-63)	86.7	84.0	80.7	68.2	63.3	69.8	69.1	55.2	60.9	62.7	65.2
Professional, scientific and technical activities (M)	72.6	73.5	78.6	81.1	87.6	88.4	87.9	80.6	82.8	82.8	83.2
Administrative and support service activities (N)	54.2	44.1	39.7	37.9	31.5	23.3	26.5	26.6	33.2	35.4	37.5
Enabling Services											
Transportation and storage (H)	22.5	22.9	21.9	20.2	20.6	20.9	21.2	21.0	21.1	21.6	22.4
Land transport and transport via pipelines (H49)	18.6	19.6	18.5	16.6	17.3	17.3	17.9	17.0	16.0	17.6	18.3
Water transport (H50)	49.0	47.7	45.6	44.1	42.4	44.9	46.4	49.2	45.6	44.7	48.0
Air transport (H51)	56.3	50.3	49.0	46.9	43.6	41.1	50.1	49.6	79.7	81.5	80.7
Warehousing and support activities for transportation (H52)	37.1	36.4	34.4	33.0	33.0	33.9	34.2	36.1	36.0	37.4	38.5
Postal and courier activities (H53)	17.7	18.8	18.3	17.7	17.3	16.3	18.0	17.6	17.4	17.9	19.0
Financial and insurance activities (K)	19.2	20.5	20.5	18.8	16.9	14.7	17.1	17.5	15.5	17.0	18.3
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	23.1	24.5	23.0	21.2	19.7	19.6	19.6	19.6	20.2	21.9	22.8
Accommodation and food service activities (I)	15.4	15.7	16.0	15.8	16.5	17.0	16.8	16.6	10.4	7.7	8.0
Real estate activities (L)	1.8	1.9	1.6	1.8	2.3	2.1	2.6	2.4	1.9	1.8	2.0
Public administration and defence; compulsory social security (O)	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.5	0.6	0.8
Education (P)	0.9	1.2	2.1	1.7	3.1	3.2	3.8	4.3	3.4	3.3	3.8
Human health and social work activities (Q)	0.8	0.8	0.7	0.7	0.8	1.2	1.4	1.3	0.5	0.4	0.5
Arts, entertainment and recreation (R)	10.1	9.5	9.2	8.8	9.2	10.2	10.0	9.9	6.1	4.4	4.6
Other service activities (S)	2.6	2.7	2.9	2.6	1.9	3.4	3.9	3.3	2.4	2.3	2.4
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 7
India: Domestic Employment Embodied in Gross Exports (EXGR_DEM; % of sector employment), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	116.2	122.6	122.9	134.0	125.8	124.1	142.4	122.6	117.2	119.7	145.8
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	135.4	111.3	112.5	111.7	95.9	96.5	93.7	91.0	125.2	123.4	145.8
Telecommunications (J61)	14.3	15.3	14.0	15.0	17.5	27.8	38.2	39.1	28.8	27.0	32.5
Computer programming, consultancy, and information service activities (J62-63)	155.5	168.4	167.7	177.0	161.5	153.5	178.1	149.8	137.3	141.8	173.6
Professional, scientific and technical activities (M)	77.7	77.6	85.3	87.5	96.4	97.2	98.1	89.5	90.0	88.5	89.3
Administrative and support service activities (N)	48.6	33.3	26.4	19.2	18.4	19.5	20.4	21.5	24.8	26.0	27.5
Enabling Services											
Transportation and storage (H)	17.5	17.9	16.4	16.0	13.0	14.7	15.0	15.6	14.2	15.4	14.9
Land transport and transport via pipelines (H49)	12.0	12.5	11.2	11.1	8.9	9.7	9.9	10.0	8.9	9.5	9.2
Water transport (H50)	58.5	58.4	44.5	38.0	34.6	47.2	48.3	54.5	52.2	47.9	45.8
Air transport (H51)	276.4	270.2	282.7	288.0	220.1	209.5	197.9	207.8	208.3	265.3	244.1
Warehousing and support activities for transportation (H52)	45.1	45.4	42.9	42.2	37.5	40.9	42.3	45.7	40.8	43.5	42.6
Postal and courier activities (H53)	4.5	5.1	4.5	4.7	4.2	4.5	4.7	4.8	4.7	4.9	5.3
Financial and insurance activities (K)	8.9	8.2	9.5	10.2	11.2	12.9	11.9	11.6	9.9	11.4	13.1
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	14.4	15.0	14.1	13.0	11.9	11.9	11.7	11.6	11.9	12.7	13.5
Accommodation and food service activities (I)	56.2	52.4	62.5	63.3	47.1	44.8	50.8	47.1	21.3	11.6	11.0
Real estate activities (L)	6.3	6.5	6.5	6.9	8.9	8.7	9.1	7.5	6.0	5.1	5.2
Public administration and defence; compulsory social security (O)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.4
Education (P)	0.6	0.6	0.6	0.5	2.3	2.8	2.6	3.1	2.7	2.5	2.4
Human health and social work activities (Q)	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.4	0.2	0.2
Arts, entertainment and recreation (R)	11.4	10.3	10.1	9.6	9.7	10.2	10.0	9.8	5.7	3.6	3.7
Other service activities (S)	1.1	1.1	1.0	1.1	1.1	1.2	1.1	1.1	0.6	0.3	0.3
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 8
India: Domestic Employment Embodied in Foreign Final Demand (FFD_DEM; % of sector employment), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	61.7	60.9	58.4	52.5	49.7	54.6	54.4	44.5	49.3	51.2	53.5
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	44.3	43.7	38.0	38.4	33.1	32.6	33.4	30.9	38.6	41.7	44.4
Telecommunications (J61)	13.6	14.0	13.9	13.1	12.6	11.6	12.5	12.5	11.4	12.2	13.4
Computer programming, consultancy, and information service activities (J62-63)	86.7	84.0	80.7	68.2	63.3	69.8	69.1	55.2	60.9	62.7	65.2
Professional, scientific and technical activities (M)	72.6	73.5	78.6	81.1	87.6	88.4	88.0	80.6	82.8	82.8	83.2
Administrative and support service activities (N)	54.2	44.1	39.7	37.9	31.5	23.3	26.5	26.6	33.2	35.4	37.5
Enabling Services											
Transportation and storage (H)	20.9	21.7	20.5	18.6	19.0	19.4	20.2	19.7	19.0	20.5	21.3
Land transport and transport via pipelines (H49)	18.6	19.6	18.5	16.6	17.3	17.3	17.9	17.1	16.0	17.6	18.3
Water transport (H50)	49.0	47.7	45.6	44.1	42.4	44.9	46.4	49.2	45.6	44.7	48.0
Air transport (H51)	56.3	50.3	49.0	46.9	43.6	41.1	50.1	49.6	79.8	81.5	80.7
Warehousing and support activities for transportation (H52)	37.0	36.5	34.4	33.0	33.0	33.9	34.2	36.1	36.0	37.4	38.5
Postal and courier activities (H53)	17.7	18.8	18.3	17.7	17.3	16.3	18.0	17.6	17.4	17.9	19.0
Financial and insurance activities (K)	19.2	20.5	20.5	18.8	16.9	14.7	17.1	17.5	15.5	17.0	18.3
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	23.1	24.5	23.0	21.2	19.6	19.6	19.6	19.6	20.2	21.9	22.8
Accommodation and food service activities (I)	15.4	15.7	16.0	15.8	16.5	17.0	16.8	16.6	10.4	7.7	8.1
Real estate activities (L)	1.8	1.9	1.6	1.8	2.3	2.1	2.6	2.4	1.9	1.8	2.0
Public administration and defence; compulsory social security (O)	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.5	0.6	0.8
Education (P)	0.9	1.1	2.1	1.7	3.1	3.2	3.8	4.3	3.5	3.3	3.8
Human health and social work activities (Q)	0.8	0.8	0.7	0.7	0.8	1.2	1.4	1.3	0.5	0.4	0.5
Arts, entertainment and recreation (R)	10.1	9.5	9.2	8.8	9.2	10.2	10.0	9.9	6.1	4.4	4.5
Other service activities (S)	2.6	2.7	2.9	2.6	1.9	3.4	3.9	3.3	2.4	2.3	2.4
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 9
India: HR Backward Linkage Index (normalized), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	1.0814	1.0352	1.0987	1.1120	1.0850	1.0712	1.0557	1.0555	1.0499	1.0407	1.0502
Telecommunications (J61)	1.1602	1.1158	1.0960	1.0912	1.1079	1.0931	1.1008	1.0944	1.0721	1.0454	1.0579
Computer programming, consultancy, and information service activities (J62-63)	0.8358	0.8216	0.8351	0.8716	0.8746	0.8166	0.8446	0.8432	0.7876	0.8000	0.8170
Professional, scientific and technical activities (M)	0.9020	0.8928	0.9318	0.9325	0.9089	0.8793	0.8667	0.8815	0.8686	0.8568	0.8715
Administrative and support service activities (N)	0.8637	0.9345	0.9285	0.9336	0.9166	0.9013	0.8818	0.8978	0.8964	0.8825	0.8948
Enabling Services											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	1.0207	1.0002	0.9851	1.0154	0.9785	1.0199	1.0079	1.0171	0.9988	0.9891	0.9129
Water transport (H50)	0.9196	0.9242	0.7133	0.6613	0.6735	0.7319	0.7532	0.7735	0.7809	0.7673	0.7165
Air transport (H51)	1.3281	1.3545	1.3277	1.2484	1.2311	1.2312	1.2154	1.1715	1.0699	1.1332	1.0615
Warehousing and support activities for transportation (H52)	1.0216	1.0359	1.0238	1.0639	0.9855	1.0056	1.0141	1.0071	0.9749	0.9859	0.9154
Postal and courier activities (H53)	0.8560	0.8249	0.8361	0.8700	0.8209	0.9175	0.9268	0.9611	0.9801	1.0132	1.0184
Financial and insurance activities (K)	0.9463	0.9209	0.9278	0.9604	0.9877	0.9693	0.9614	0.9585	0.9783	0.9797	0.9911
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.7860	0.7765	0.7875	0.7953	0.7698	0.7199	0.7169	0.7207	0.7454	0.7309	0.7443
Accommodation and food service activities (I)	1.1784	1.1691	1.1310	1.1487	1.2558	1.1337	1.1042	1.0946	1.1893	1.1815	1.1872
Real estate activities (L)	0.7458	0.7512	0.7404	0.7639	0.7773	0.7402	0.7421	0.7273	0.7356	0.7321	0.7364
Public administration and defence; compulsory social security (O)	0.7721	0.7739	0.7880	0.8219	0.8149	0.7804	0.7575	0.7623	0.7715	0.7924	0.7363
Education (P)	0.7464	0.7430	0.7436	0.7766	0.8000	0.7773	0.7618	0.7413	0.7376	0.7279	0.6718
Human health and social work activities (Q)	0.9037	0.9171	0.9092	0.8988	0.8655	0.8491	0.8468	0.8219	0.8534	0.8378	0.8593
Arts, entertainment and recreation (R)	0.9694	0.9647	0.9763	0.9849	0.9583	0.9505	0.9558	0.9541	0.9470	0.9328	0.9442
Other service activities (S)	0.9206	0.8996	0.9047	0.9127	0.8922	0.8904	0.8781	0.8749	0.8742	0.8606	0.8756
Activities of households as employers; undiff. goods- and services- (T)	0.5906	0.5891	0.5865	0.6008	0.6136	0.5956	0.5932	0.5867	0.5897	0.5871	0.5898

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 10
India: HR Forward Linkage Index (normalized), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.6570	0.6713	0.6928	0.6857	0.7024	0.7773	0.7874	0.7993	0.7544	0.7428	0.7403
Telecommunications (J61)	1.0551	1.0669	1.0921	1.0569	0.9983	0.9648	0.9189	0.9393	0.9424	0.9293	0.9365
Computer programming, consultancy, and information service activities (J62-63)	0.6294	0.6238	0.6344	0.7126	0.6808	0.6779	0.6688	0.7669	0.7760	0.7659	0.7317
Professional, scientific and technical activities (M)	0.6237	0.6754	0.6523	0.6363	0.6029	0.5988	0.6004	0.6252	0.6299	0.6307	0.6255
Administrative and support service activities (N)	1.0381	1.2216	1.2386	1.2660	1.1998	1.2027	1.2572	1.2708	1.2210	1.2010	1.1981
Enabling Services											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	1.0671	1.0707	1.0623	1.0344	1.0347	1.0627	1.0921	1.0594	1.0336	1.0743	1.0841
Water transport (H50)	1.1919	1.1058	1.0920	1.1181	1.1111	1.1345	1.1532	1.1268	1.0146	1.0768	1.0893
Air transport (H51)	1.1548	1.1423	1.1227	1.0651	1.1088	1.1340	1.0649	1.0570	0.8444	0.8319	0.8485
Warehousing and support activities for transportation (H52)	1.0714	1.0375	1.0530	1.0541	1.0802	1.0557	1.0553	1.0261	1.0409	1.0598	1.0587
Postal and courier activities (H53)	1.2992	1.2924	1.3077	1.2929	1.2739	1.3234	1.2838	1.3089	1.3280	1.3592	1.3918
Financial and insurance activities (K)	1.2556	1.2696	1.2595	1.2347	1.1965	1.1456	1.2063	1.2368	1.2813	1.2632	1.2698
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	1.0380	1.0508	1.0383	1.0229	1.0012	0.9899	0.9942	0.9883	1.0003	1.0135	1.0136
Accommodation and food service activities (I)	0.7325	0.7264	0.7225	0.7154	0.7171	0.7040	0.6891	0.7140	0.7058	0.7148	0.7217
Real estate activities (L)	0.6358	0.6629	0.6378	0.6455	0.6255	0.6037	0.6022	0.5955	0.6017	0.5998	0.6035
Public administration and defence; compulsory social security (O)	0.5857	0.5915	0.5817	0.5763	0.5768	0.5699	0.5687	0.5649	0.5667	0.5666	0.5755
Education (P)	0.5940	0.6028	0.6308	0.6147	0.6071	0.5941	0.6262	0.6305	0.6063	0.6059	0.6174
Human health and social work activities (Q)	0.5790	0.5814	0.5732	0.5648	0.5625	0.5780	0.5861	0.5781	0.5693	0.5691	0.5754
Arts, entertainment and recreation (R)	0.5927	0.5955	0.5847	0.5769	0.5963	0.6170	0.6256	0.6209	0.6083	0.6087	0.6145
Other service activities (S)	0.6332	0.6688	0.6721	0.6614	0.6238	0.6554	0.6791	0.6461	0.6515	0.6517	0.6572
Activities of households as employers; undiff. goods- and services- (T)	0.5740	0.5753	0.5629	0.5573	0.5555	0.5542	0.5533	0.5486	0.5513	0.5501	0.5517

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 11
India: Employment Multipliers, 2012-2022

Unit: jobs per $1,000 of additional final demand

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.0990	0.0756	0.0816	0.0740	0.0664	0.0632	0.0568	0.0558	0.0637	0.0584	0.0544
Telecommunications (J61)	0.0621	0.0581	0.0529	0.0519	0.0494	0.0596	0.0757	0.0704	0.0476	0.0428	0.0407
Computer programming, consultancy, and information service activities (J62-63)	0.0472	0.0448	0.0420	0.0489	0.0434	0.0347	0.0368	0.0357	0.0275	0.0263	0.0254
Professional, scientific and technical activities (M)	0.4052	0.3727	0.3431	0.3438	0.3412	0.3087	0.2899	0.2872	0.3133	0.3059	0.2958
Administrative and support service activities (N)	0.1514	0.1492	0.1496	0.1491	0.1516	0.1522	0.1484	0.1470	0.1623	0.1551	0.1499
Enabling Services											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.1459	0.1462	0.1362	0.1436	0.1240	0.1309	0.1262	0.1268	0.1614	0.1193	0.1039
Water transport (H50)	0.0795	0.0851	0.0563	0.0508	0.0470	0.0542	0.0517	0.0561	0.0602	0.0458	0.0383
Air transport (H51)	0.0817	0.0880	0.0833	0.0815	0.0679	0.0668	0.0588	0.0577	0.0657	0.0554	0.0478
Warehousing and support activities for transportation (H52)	0.1033	0.1046	0.0983	0.0964	0.0776	0.0992	0.0981	0.1045	0.1204	0.0987	0.0847
Postal and courier activities (H53)	0.1453	0.1426	0.1342	0.1374	0.1306	0.1330	0.1270	0.1270	0.1274	0.1086	0.1008
Financial and insurance activities (K)	0.0505	0.0491	0.0492	0.0535	0.0557	0.0534	0.0489	0.0502	0.0417	0.0412	0.0398
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.1759	0.1735	0.1638	0.1644	0.1593	0.1460	0.1391	0.1397	0.1799	0.1553	0.1464
Accommodation and food service activities (I)	0.3937	0.3779	0.4271	0.4178	0.3073	0.2599	0.2736	0.2477	0.2411	0.2155	0.2091
Real estate activities (L)	0.0191	0.0192	0.0182	0.0182	0.0190	0.0165	0.0161	0.0143	0.0147	0.0138	0.0133
Public administration and defence; compulsory social security (O)	0.1456	0.1441	0.1466	0.1561	0.1495	0.1239	0.1191	0.1177	0.0889	0.0824	0.0697
Education (P)	0.2152	0.2158	0.2047	0.1920	0.1815	0.1661	0.1607	0.1552	0.1757	0.1479	0.1354
Human health and social work activities (Q)	0.2044	0.2086	0.1880	0.1808	0.1783	0.1765	0.1816	0.1836	0.2010	0.1806	0.1686
Arts, entertainment and recreation (R)	0.4893	0.4702	0.4222	0.4069	0.3934	0.3768	0.3756	0.3873	0.4080	0.3690	0.3403
Other service activities (S)	0.7924	0.7755	0.7019	0.6618	0.6672	0.6460	0.6447	0.6561	0.6570	0.5944	0.5497
Activities of households as employers; undiff. goods- and services- (T)	1.7644	1.7642	1.6068	1.5603	1.5244	1.3282	1.3999	1.4785	1.4698	1.3838	1.3015

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 12
India: Foreign value added in gross exports (EXGR_FVA; % of gross exports), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	8.3	7.3	7.1	6.6	6.8	8.0	6.0	6.4	6.9	7.9	9.1
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	16.7	14.5	15.7	13.8	14.7	13.4	14.1	13.5	12.2	13.6	15.7
Telecommunications (J61)	22.9	20.1	21.1	16.7	15.2	20.7	16.0	11.8	13.3	14.0	15.2
Computer programming, consultancy, and information service activities (J62-63)	7.0	6.3	6.0	5.7	5.9	7.3	5.2	5.7	6.3	7.2	8.4
Professional, scientific and technical activities (M)	12.5	11.1	11.3	9.0	9.5	10.2	10.7	8.8	9.2	9.8	11.1
Administrative and support service activities (N)	12.0	13.5	12.4	9.6	10.2	10.2	11.7	9.8	9.8	10.5	11.8
Enabling Services											
Transportation and storage (H)	23.9	21.8	21.1	18.1	21.6	19.8	24.1	19.7	22.1	26.9	27.0
Land transport and transport via pipelines (H49)	20.9	19.6	18.8	14.3	16.7	17.0	17.3	14.4	17.2	19.3	18.2
Water transport (H50)	42.1	40.2	53.8	61.4	49.9	39.6	43.0	40.2	37.9	42.9	41.1
Air transport (H51)	35.6	31.7	29.2	23.6	29.8	26.3	43.6	33.0	31.4	41.5	45.6
Warehousing and support activities for transportation (H52)	18.7	17.8	15.4	14.7	21.0	17.5	20.2	16.3	19.5	23.9	23.7
Postal and courier activities (H53)	14.0	11.8	12.8	10.1	10.6	12.7	15.7	12.6	13.1	14.6	15.8
Financial and insurance activities (K)	13.4	11.4	10.8	9.5	10.7	11.9	9.8	9.7	5.9	7.0	8.4
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	7.7	6.8	6.7	5.2	4.4	6.4	7.2	7.2	4.4	4.7	6.0
Accommodation and food service activities (I)	9.1	8.5	6.2	5.6	7.5	8.2	7.9	7.4	8.9	10.5	12.1
Real estate activities (L)	5.2	5.1	4.3	3.6	4.0	3.1	3.4	3.7	2.2	2.5	2.9
Public administration and defence; compulsory social security (O)	7.9	7.1	6.5	5.6	5.1	3.7	4.2	3.6	4.9	6.1	5.0
Education (P)	6.8	5.8	5.3	5.5	4.9	4.5	4.7	3.6	3.7	4.0	2.6
Human health and social work activities (Q)	9.2	9.6	8.8	6.8	5.9	5.2	5.5	8.5	7.1	7.7	8.7
Arts, entertainment and recreation (R)	12.5	10.7	10.0	8.8	10.6	10.1	10.4	10.1	9.5	10.2	11.6
Other service activities (S)	14.4	12.0	12.2	10.9	8.2	7.1	6.6	7.5	8.6	9.2	10.6
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 13
India: Domestic value added in foreign gross exports (FEXGR_DVA; % of value-added), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)	71.2	75.4	92.5	104.1	116.6	133.0	158.9	171.7	218.1	224.5	230.5
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	19.5	19.7	22.5	23.0	22.8	22.2	22.1	23.3	30.0	30.8	28.4
Telecommunications (J61)	11.6	11.1	11.6	13.7	12.7	11.8	13.1	11.8	13.5	12.1	14.4
Computer programming, consultancy, and information service activities (J62-63)	40.0	44.6	58.5	67.3	81.1	99.0	123.7	136.6	174.6	181.6	187.7
Professional, scientific and technical activities (M)	37.7	41.0	45.9	53.3	56.7	54.9	55.3	59.8	67.0	60.8	62.0
Administrative and support service activities (N)	22.7	23.4	24.7	26.0	26.7	27.6	28.4	30.4	32.0	31.2	33.6
Enabling Services											
Transportation and storage (H)	133.4	131.6	130.3	144.3	144.8	157.2	154.6	171.4	157.3	157.2	167.9
Land transport and transport via pipelines (H49)	23.2	24.8	23.6	25.1	24.3	25.5	25.4	26.2	22.2	23.5	29.4
Water transport (H50)	56.4	54.5	53.5	59.6	61.3	67.2	65.3	79.3	73.9	71.9	68.3
Air transport (H51)	38.6	36.9	37.7	40.3	39.5	43.8	42.0	43.1	35.0	35.5	43.4
Warehousing and support activities for transportation (H52)	12.9	13.1	13.1	17.0	17.5	18.3	18.8	19.7	22.5	23.1	23.4
Postal and courier activities (H53)	2.3	2.3	2.4	2.3	2.3	2.4	3.1	3.0	3.7	3.2	3.4
Financial and insurance activities (K)	57.2	58.7	64.0	73.3	73.5	81.1	83.4	84.4	86.8	84.5	78.8
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	106.5	103.7	103.9	117.5	116.7	119.9	125.2	121.5	132.3	130.1	135.2
Accommodation and food service activities (I)	20.6	22.2	21.8	25.2	25.0	26.4	27.4	30.5	15.9	18.1	29.0
Real estate activities (L)	2.4	2.3	2.3	3.0	3.1	3.2	3.3	3.6	2.7	2.9	3.6
Public administration and defence; compulsory social security (O)	1.2	1.1	1.0	1.2	1.2	1.3	1.3	1.1	1.2	1.2	1.2
Education (P)	2.8	3.0	3.1	3.4	3.5	3.5	3.2	3.3	2.1	1.9	2.8
Human health and social work activities (Q)	1.4	1.3	1.4	1.5	1.5	1.7	1.6	1.7	0.9	0.7	1.0
Arts, entertainment and recreation (R)	4.5	4.8	4.9	6.3	6.6	6.9	7.9	8.2	7.2	6.3	7.3
Other service activities (S)	1.6	1.7	1.6	1.9	1.8	2.0	1.9	1.9	0.8	0.8	1.2
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 14
India: Value-Added Multipliers, 2012-2022

Unit: dollars of value added per dollar of additional final demand

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.7965	0.8094	0.8128	0.8292	0.7903	0.8228	0.8187	0.8239	0.8477	0.8347	0.8134
Telecommunications (J61)	0.7316	0.7462	0.7366	0.7899	0.7824	0.7480	0.7880	0.8395	0.8369	0.8313	0.8184
Computer programming, consultancy, and information service activities (J62-63)	0.9211	0.9147	0.9281	0.9291	0.9238	0.9079	0.9304	0.9268	0.9285	0.9190	0.9055
Professional, scientific and technical activities (M)	0.8510	0.8583	0.8530	0.8813	0.8663	0.8698	0.8638	0.8869	0.8869	0.8815	0.8674
Administrative and support service activities (N)	0.8563	0.8259	0.8358	0.8676	0.8443	0.8657	0.8522	0.8756	0.8823	0.8747	0.8598
Enabling Services											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.7461	0.7350	0.7401	0.7863	0.7338	0.7934	0.7855	0.8193	0.7863	0.7652	0.7788
Water transport (H50)	0.5607	0.5592	0.4499	0.3747	0.4650	0.5693	0.5462	0.5766	0.5977	0.5499	0.5701
Air transport (H51)	0.6105	0.6147	0.6703	0.7294	0.6541	0.6838	0.5215	0.6270	0.6593	0.5568	0.5107
Warehousing and support activities for transportation (H52)	0.7784	0.7707	0.8032	0.8008	0.7199	0.7813	0.7517	0.7987	0.7723	0.7247	0.7307
Postal and courier activities (H53)	0.8301	0.8433	0.8257	0.8542	0.8368	0.8399	0.8021	0.8365	0.8389	0.8212	0.8081
Financial and insurance activities (K)	0.8447	0.8622	0.8665	0.8834	0.8562	0.8475	0.8730	0.8818	0.9269	0.9149	0.9005
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.9072	0.9077	0.9112	0.9276	0.9341	0.9217	0.9130	0.9140	0.9444	0.9412	0.9270
Accommodation and food service activities (I)	0.8946	0.8971	0.9262	0.9340	0.9014	0.8937	0.9009	0.9062	0.8894	0.8723	0.8526
Real estate activities (L)	0.9371	0.9331	0.9423	0.9517	0.9392	0.9585	0.9533	0.9512	0.9707	0.9671	0.9632
Public administration and defence; compulsory social security (O)	0.9124	0.9135	0.9250	0.9327	0.9359	0.9548	0.9503	0.9581	0.9389	0.9243	0.9385
Education (P)	0.9228	0.9281	0.9353	0.9323	0.9333	0.9432	0.9387	0.9517	0.9540	0.9514	0.9690
Human health and social work activities (Q)	0.8861	0.8817	0.8822	0.9031	0.9170	0.9252	0.9206	0.8933	0.9124	0.9074	0.8951
Arts, entertainment and recreation (R)	0.8537	0.8581	0.8746	0.8880	0.8484	0.8694	0.8643	0.8678	0.8834	0.8760	0.8608
Other service activities (S)	0.8275	0.8441	0.8409	0.8514	0.8723	0.9096	0.9153	0.9073	0.8963	0.8905	0.8754
Activities of households as employers; undiff. goods- and services- (T)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 15
India: Labor Income Share (% of value added), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	68.1	67.5	67.1	67.3	67.2	66.2	66.6	67.1	67.9	66.6	67.3
Telecommunications (J61)	82.3	82.9	83.3	83.5	83.7	83.7	83.2	83.4	82.7	83.5	83.8
Computer programming, consultancy, and information service activities (J62-63)	25.5	23.3	21.1	18.9	16.6	14.4	12.2	10.0	10.1	10.2	10.5
Professional, scientific and technical activities (M)	45.5	45.9	42.8	49.8	37.8	37.6	38.9	42.8	43.5	42.7	42.8
Administrative and support service activities (N)	4.9	4.5	4.2	4.4	4.2	5.3	5.2	5.2	4.9	4.8	4.6
Enabling Services											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	30.1	30.4	30.6	30.9	33.9	33.2	32.2	32.6	35.8	32.0	31.9
Water transport (H50)	28.3	32.6	27.7	31.8	26.0	25.9	28.0	25.8	23.5	21.2	19.1
Air transport (H51)	38.8	38.1	40.8	35.9	42.1	39.1	40.0	42.8	34.6	45.1	45.5
Warehousing and support activities for transportation (H52)	28.5	30.8	28.6	30.3	29.0	32.6	35.1	32.4	31.6	32.8	30.6
Postal and courier activities (H53)	48.8	50.0	49.7	52.1	54.3	54.1	54.9	53.9	55.1	55.4	57.1
Financial and insurance activities (K)	32.1	33.7	33.8	32.6	35.2	32.7	33.0	34.8	34.1	36.4	34.5
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	14.7	14.7	14.7	14.5	14.6	15.0	15.1	14.7	15.0	15.7	15.4
Accommodation and food service activities (I)	31.3	31.7	31.6	31.3	32.0	32.8	33.1	33.8	37.4	35.2	34.9
Real estate activities (L)	2.1	2.1	2.1	2.1	2.2	1.6	1.8	1.9	1.7	1.7	1.7
Public administration and defence; compulsory social security (O)	85.7	86.0	86.6	87.1	88.4	89.3	89.5	89.2	87.4	91.5	91.4
Education (P)	84.5	83.3	82.0	81.2	80.8	80.0	79.4	77.1	80.4	80.4	80.2
Human health and social work activities (Q)	63.0	62.9	61.7	62.1	61.6	61.8	61.1	58.8	58.9	58.8	58.5
Arts, entertainment and recreation (R)	32.3	32.1	32.7	32.3	32.6	33.2	33.2	33.1	38.8	37.1	35.1
Other service activities (S)	25.0	24.1	24.5	24.2	24.2	19.6	21.8	20.3	22.2	21.5	21.9
Activities of households as employers; undiff. goods- and services- (T)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

Table 16
India: Labor Income Multipliers, 2012-2022

Unit: dollars of labor income per dollar of additional final demand

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Knowledge Services											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.3616	0.3624	0.3537	0.3605	0.3495	0.3806	0.3818	0.3936	0.4072	0.4052	0.3963
Telecommunications (J61)	0.2960	0.3085	0.3147	0.3372	0.3341	0.3257	0.3179	0.3499	0.3775	0.3900	0.3777
Computer programming, consultancy, and information service activities (J62-63)	0.3088	0.2898	0.2803	0.2723	0.2527	0.2501	0.2350	0.2051	0.1979	0.1930	0.2128
Professional, scientific and technical activities (M)	0.3687	0.3721	0.3669	0.3990	0.3592	0.3660	0.3659	0.4055	0.4007	0.3900	0.3861
Administrative and support service activities (N)	0.1154	0.1193	0.1232	0.1384	0.1272	0.1497	0.1422	0.1507	0.1444	0.1325	0.1363
Enabling Services											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.2524	0.2432	0.2494	0.2700	0.2730	0.3034	0.2994	0.3093	0.3103	0.2808	0.2888
Water transport (H50)	0.1770	0.1734	0.1341	0.1263	0.1365	0.1780	0.1868	0.1824	0.1856	0.1527	0.1399
Air transport (H51)	0.2088	0.1976	0.2389	0.2647	0.2522	0.2475	0.1836	0.2236	0.2313	0.1997	0.1880
Warehousing and support activities for transportation (H52)	0.2547	0.2577	0.2664	0.2705	0.2516	0.2892	0.2816	0.2898	0.2937	0.2654	0.2546
Postal and courier activities (H53)	0.5010	0.5137	0.4742	0.5059	0.5175	0.5026	0.4539	0.4762	0.4892	0.4798	0.4794
Financial and insurance activities (K)	0.2832	0.2998	0.3019	0.3059	0.3102	0.3015	0.3166	0.3377	0.3487	0.3480	0.3271
Local Services											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.2001	0.2010	0.2076	0.2189	0.2214	0.2232	0.2213	0.2170	0.2329	0.2209	0.2294
Accommodation and food service activities (I)	0.2517	0.2557	0.2549	0.2489	0.2676	0.2873	0.2811	0.2878	0.3104	0.2833	0.2795
Real estate activities (L)	0.0526	0.0544	0.0560	0.0606	0.0582	0.0522	0.0546	0.0540	0.0604	0.0591	0.0588
Public administration and defence; compulsory social security (O)	0.6070	0.6140	0.6113	0.6066	0.6110	0.6403	0.6486	0.6518	0.6575	0.6478	0.6614
Education (P)	0.6777	0.6827	0.6965	0.6841	0.6860	0.7012	0.6999	0.7179	0.7355	0.7469	0.7741
Human health and social work activities (Q)	0.5026	0.4965	0.4967	0.5139	0.5388	0.5776	0.5756	0.5581	0.5705	0.5669	0.5650
Arts, entertainment and recreation (R)	0.2761	0.2749	0.2927	0.3038	0.3109	0.3272	0.3341	0.3321	0.3692	0.3628	0.3483
Other service activities (S)	0.2736	0.2675	0.2720	0.2761	0.2900	0.2770	0.3004	0.2771	0.2999	0.2821	0.2965
Activities of households as employers; undiff. goods- and services- (T)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9997	0.9999	0.9999

Source: Author's calculations from OECD (2025), "Trade in Value Added (TiVA)", https://stats.oecd.org (accessed April 12, 2026).

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