



INDUSTRIAL GROWTH AND ECONOMIC DEVELOPMENT: EVIDENCE FROM EMERGING ECONOMIES

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ABSTRACT

This paper examines the relationship between industrial growth and economic development across eight mixed global emerging economies: Brazil, China, India, Indonesia, Mexico, South Africa, Turkey, and Vietnam. Drawing on comparative data spanning 1995 to 2018, the analysis addresses three interlocking questions: whether accelerated industrialisation reliably raises per capita incomes, under what institutional conditions manufacturing-led growth becomes self-sustaining, and whether the historical link between factory output and broad-based welfare gains has weakened in recent decades. The findings confirm a strong but heterogeneous pattern. Industrial expansion correlates with income growth, yet the magnitude and durability of that relationship depend heavily on state capacity, export orientation, and investment in human capital. Countries that coupled industrial policy with labour-market flexibility and openness to foreign direct investment achieved more durable gains. The paper concludes with policy observations on the institutional architecture that differentiates successful industrialisers from stalled ones.

KEYWORDS: Industrial Policy, Economic Growth, Emerging Markets, Manufacturing, Foreign Direct Investment, Structural Transformation.

1. INTRODUCTION

The idea that manufacturing catalyses economic development is old enough to feel settled. List's advocacy of infant-industry protection in nineteenth-century Germany, Rostow's stages of growth framework, and Lewis's two-sector model all rest on the premise that moving workers from subsistence agriculture into factories drives sustained productivity gains. For most of the twentieth century, this logic appeared sound: Western Europe industrialised its way out of



agrarian poverty, East Asian economies—Korea, Taiwan, then China—replicated the transition at remarkable speed, and the correlation between manufacturing's share of GDP and income per head seemed nearly mechanical.

Yet the empirical record since the 1990s has become harder to read. Several middle-income countries have experienced premature deindustrialisation a shrinking of the industrial sector as a share of GDP before their incomes reached levels at which Western nations historically exited manufacturing. Brazil's manufacturing value added peaked in the mid-1980s; South Africa's factory sector has contracted for decades without an obvious services-led replacement. Meanwhile, Vietnam and Indonesia expanded their industrial bases aggressively through export-processing zones and foreign investment, recording per capita income gains that resemble, in compressed form, the East Asian pattern of an earlier era. The divergence raises an obvious question: what distinguishes the economies that managed to leverage industry into broad development from those that could not?

2. LITERATURE REVIEW

2.1 Classical and Structural Perspectives

The developmental role of industry is well established in the classical tradition. Kaldor's three growth laws, formulated in the 1960s, provided an early econometric framework: manufacturing output growth drives overall GDP growth; manufacturing productivity gains exceed those of other sectors; and expansion of manufacturing raises productivity throughout the broader economy by absorbing surplus labour. Subsequent empirical work refined but broadly affirmed these propositions. Thirlwall and others linked industrial dynamism to balance-of-payments constraints on growth, noting that manufacturing exports relax the foreign-exchange bottleneck that frequently strangles developing economies.

Rodrik's research through the 2000s and 2010s extended the argument in important directions. His work demonstrated that manufacturing is uniquely amenable to unconditional convergence productivity levels in specific industrial sub-sectors tend to equalise across countries



regardless of institutional quality a property not shared by most service activities. This finding implies that factory production offers a kind of escalator that developing economies can board irrespective of governance capacity, at least in the early stages of industrialisation. The escalator metaphor, however, carries an implicit warning: it eventually stops moving, and economies that fail to invest in the capacity to climb further find themselves stranded at lower rungs of the value chain.

2.2 Institutional and Political-Economy Arguments

A parallel literature emphasises the institutional preconditions for industrial take off. Evans's concept of embedded autonomy describes the organisational capability that allowed East Asian developmental states to design and enforce industrial policy without degenerating into rent-seeking. Amsden's comparative work on Korea, Acemoglu and Robinson's broader framework on inclusive versus extractive institutions, and Besley and Persson's analysis of state capacity all converge on the view that industrial policy produces durable growth only when embedded in a state with both the technical competence to design interventions and the political insulation to resist capture by incumbent industries.

The foreign investment literature adds further texture. Alfaro and colleagues found that FDI generates growth primarily when host countries possess sufficient human capital to absorb spillovers, a result with direct implications for the contrasting experiences of China and much of sub-Saharan Africa. Blonigen and Piger's meta-analysis confirmed that governance quality and labour-market flexibility mediate the relationship between inward investment and host-country productivity a finding that recurs, in varying form, across the country cases examined here.

2.3 Premature Deindustrialisation

The most contested debate in recent years concerns the phenomenon Rodrik termed premature deindustrialisation. Using data through 2010, Rodrik documented that many developing economies were losing manufacturing employment and output shares at lower income levels than historical patterns would predict. The implications are consequential: if the industrial



escalator has shortened, late-developing countries may lack a traditional path to sustained income convergence. Felipe and colleagues disputed the severity of this diagnosis for Asia, arguing that the region's diverse industrialisation trajectories are poorly captured by a single turning-point model. Haraguchi, Cheng, and Smeets found that global manufacturing output has not declined in absolute terms; what has declined is employment intensity per unit of output a distinction with major policy implications for labour-abundant economies.

3. DATA AND METHODOLOGY

The empirical analysis draws on World Bank national accounts data, United Nations Industrial Development Organization manufacturing databases, and OECD bilateral trade statistics, covering the period from 1995 to 2018. Eight economies are included: Brazil, China, India, Indonesia, Mexico, South Africa, Turkey, and Vietnam. These countries were selected to represent variation along three dimensions—regional location, initial income level, and industrial policy orientation while remaining substantively comparable as large developing-economy cases.

The primary variables of interest are manufacturing value added as a share of GDP, average annual industrial sector growth rates, GDP per capita growth, export diversification scores constructed from Herfindahl-Hirschman Index calculations on export composition data, and net FDI inflows as a share of gross fixed capital formation. Human capital is proxied by the United Nations Development Programme's Human Development Index, using the education sub-index where composite values obscure meaningful variation.

The analytical approach is deliberately comparative rather than formally econometric. Given eight cases and a twenty-three-year window, the degrees of freedom required for robust panel estimation are unavailable. Instead, the paper employs structured comparison informed by process tracing: for each thematic question, cross-country patterns are identified in the aggregate data and then examined against the historical record of specific cases to assess whether observed correlations reflect plausible causal mechanisms. Figures 1 through 4 present the central quantitative evidence; the surrounding analysis interprets rather than merely reports these

patterns.

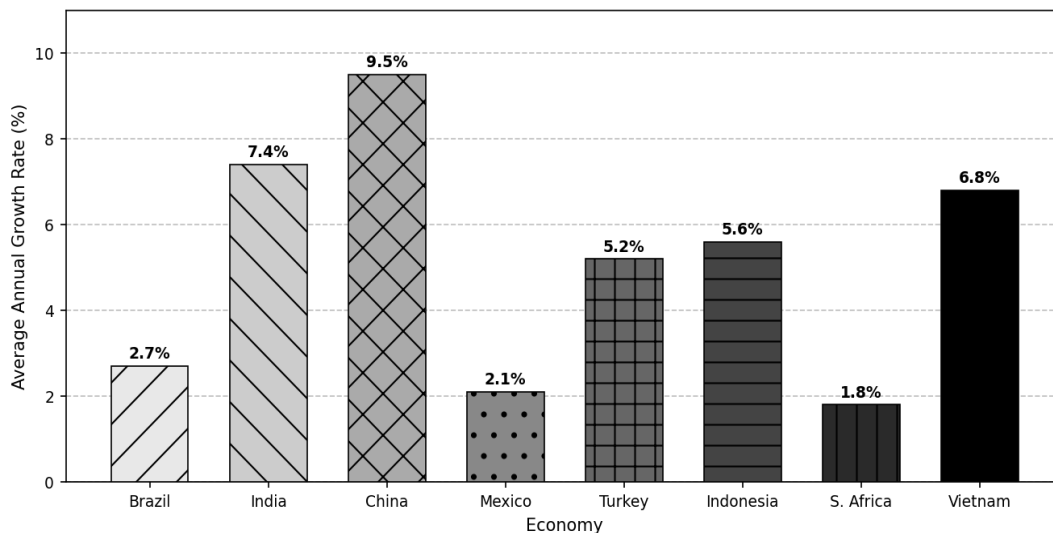


Figure 1. Average Annual Industrial GDP Growth Rate (%) Across Selected Emerging Economies. Source: World Bank national accounts data; authors' calculations.

4. INDUSTRIAL GROWTH: THE AGGREGATE RECORD

Figure 1 makes plain the scale of China's industrial expansion relative to other cases. An average annual industrial growth rate approaching 9.5 percent over nearly two decades is, by historical standards, extraordinary. The Chinese case is simultaneously the most instructive and the least replicable: the economy combined a vast domestic market, exceptional state capacity, and a labour endowment that dwarfed any competitor. Treating China as a baseline for emerging-market industrial performance systematically distorts the picture.

Removing China from the frame reveals a secondary tier—Vietnam, India, and Indonesia—whose industrial growth rates clustered between 5.5 and 7.5 percent annually. These economies share two structural features: a sustained commitment to export-oriented manufacturing, typically anchored in special economic zones or equivalent policy instruments, and openness to labour-intensive foreign investment as a vehicle for technology transfer. Vietnam's integration into global electronics supply chains after the mid-2000s is the clearest example; by 2018 it had become one of the world's largest exporters of mobile phones by volume,

despite a per capita income that placed it firmly in the lower-middle-income bracket.

Brazil, Mexico, and South Africa occupy a distinct category. Their industrial growth rates were not merely lower in absolute terms but, adjusted for income levels, substantially below what historical patterns would predict. Brazil's experience is particularly instructive: the economy possessed strong initial conditions—an established industrial base, a large domestic market, abundant natural resources—yet failed to prevent long-term erosion of manufacturing's role in GDP. The combination of an overvalued real exchange rate, elevated input costs, and underinvestment in technical education produced what amounts to structural industrial stagnation over the analysis period.

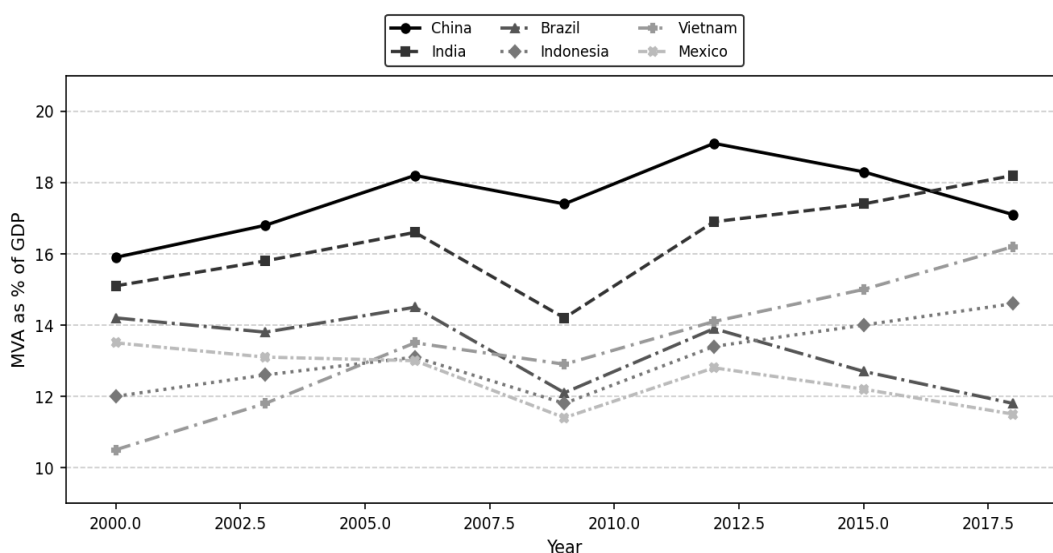


Figure 2. Manufacturing Value Added as Percentage of GDP Across Selected Emerging Economies, 2000–2018. Source: UNIDO Industrial Development Report data; authors' calculations.

5. MANUFACTURING AS A DEVELOPMENT LEVER

Figure 2 presents the trajectory of manufacturing value added as a share of GDP—a measure that captures structural transformation rather than raw growth. The contrast between China and India on one hand, and Brazil and South Africa on the other, is sharper here than in the aggregate growth data. China maintained an MVA/GDP share consistently above 17 percent



throughout the period, peaking above 19 percent in 2012 before the gradual shift toward services and domestic consumption that accompanied its middle-income transition. India's trajectory moved in the opposite direction from Brazil's: manufacturing's share rose steadily through the late 2000s, reflecting a delayed but accelerating industrial transformation.

The connection between sustained MVA/GDP ratios and per capita income growth appears robust across these cases but nonlinear. Countries that maintained manufacturing shares above roughly 15 percent for extended periods achieved faster and more consistent income growth than those that fell below this threshold or experienced sharp oscillations. The mechanism is not difficult to identify: high manufacturing shares reflect an economy's capacity to generate tradeable goods, which sustains export revenues and foreign exchange earnings, moderates inflation by exposing domestic producers to international price discipline, and creates agglomeration effects that raise productivity across linked sectors.

Vietnam and Indonesia illustrate a related point about the composition of industrial activity. Neither economy's manufacturing sector is technologically sophisticated by OECD standards, but both achieved high MVA/GDP ratios by concentrating in labour-intensive exported manufacturing—garments, footwear, electronics assembly—that absorbed large numbers of rural migrants and raised their incomes above subsistence levels. The development literature has sometimes disparaged this type of low-skill manufacturing as a developmental dead-end; the income data for both countries over the 2000–2018 period suggests the assessment was premature.

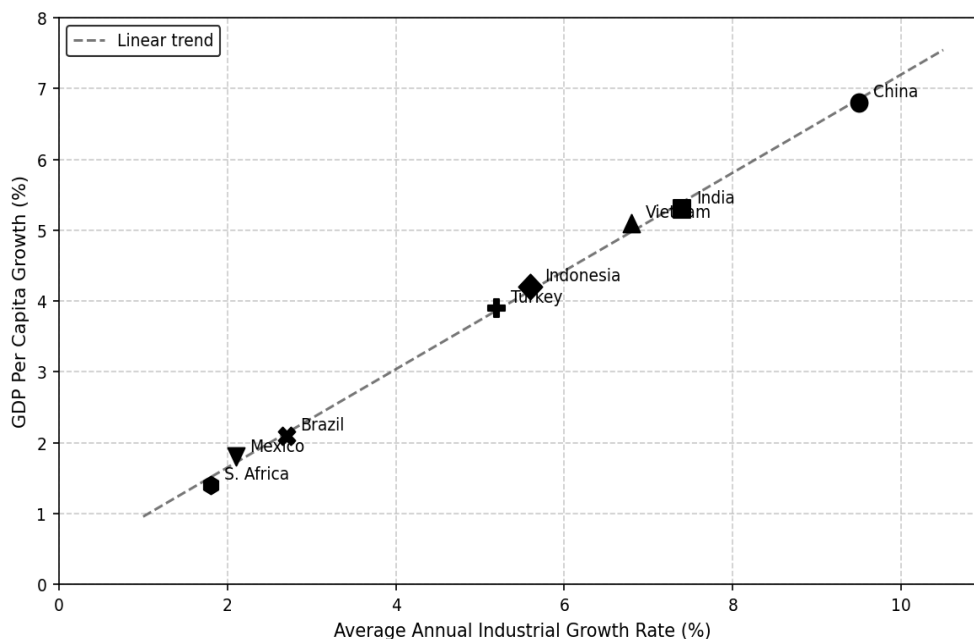


Figure 3. Relationship Between Industrial Growth Rate and GDP Per Capita Growth Across Emerging Economies. Dashed line indicates fitted linear trend. Source: World Bank and UNIDO data; authors' calculations.

6. INSTITUTIONAL CORRELATES OF DURABLE INDUSTRIAL SUCCESS

Figure 3 maps the relationship between industrial growth and GDP per capita gains across the eight cases and makes the positive association visible, but the scatter around the trend line is equally informative. Indonesia sits somewhat above the line—its per capita income growth exceeds what its industrial growth rate alone would predict—while Brazil sits below it. This residual variation is where the institutional analysis begins.

Three institutional factors recur consistently when the cases are examined in detail. First, state capacity understood as the ability of public bureaucracies to formulate coherent policies, implement them, and adjust them in response to economic feedback substantially moderates the growth impact of industrial expansion. China's National Development and Reform Commission and Vietnam's Ministry of Planning and Investment are not identical organisations, but both possess the technical depth and political authority to coordinate industrial policy across ministries



and subnational governments in ways that Brazil's fragmented federal structure has generally not permitted.

Second, exchange-rate management matters more than standard trade theory literature acknowledges. Economies that maintained competitive real exchange rates over sustained periods achieved faster manufacturing export growth, even controlling for labour costs and productivity levels. Vietnam's deliberate exchange-rate policy through the State Bank of Vietnam, and China's managed float through much of the 2000s, stand in direct contrast to Brazil's persistently appreciated real, which priced Brazilian manufactured exports out of competitive global markets for much of the study period.

Third, the sectoral content of industrial growth determines its development impact. Economies that diversified their industrial export baskets—moving from resource-linked to technology-linked products—achieved faster productivity growth and greater resilience to commodity price cycles. Figure 4 below summarises cross-country variation on a composite of these institutional and structural indicators.

Economy	Industrialisation Index (2018)	FDI Inflow (USD bn, avg.)	Export Diversification	Human Capital Score
China	0.91	285	Very High	0.82
India	0.68	42	High	0.65
Vietnam	0.63	14	High	0.62
Turkey	0.61	12	Medium-High	0.71
Indonesia	0.59	21	Medium-High	0.60
Mexico	0.55	31	High	0.74
Brazil	0.52	66	Medium	0.76
South Africa	0.43	5	Medium	0.70

Figure 4. Composite Institutional and Structural Indicators for Selected Emerging Economies (2018). Industrialisation Index based on MVA/GDP, export complexity, and sectoral diversification. Human Capital Score from UNDP Education Sub-Index. Source: UNIDO, UNDP, and World Bank data.



7. POLICY OBSERVATIONS

The comparative analysis yields several observations for policymakers in developing economies attempting to leverage industrial growth for broad development gains.

The cases studied here suggest that general investment climate reforms—lower barriers to entry, streamlined tax administration, improved contract enforcement—are necessary but not sufficient conditions for industrial take off. All eight economies introduced variants of such reforms during the 1990s and 2000s; their divergent outcomes indicate that the quality of the institutional framework in which those reforms are embedded matters as much as the reforms themselves. Vietnam's industrial success occurred under conditions of significant investment in bureaucratic capacity; South Africa's reforms occurred under conditions of greater political openness but weaker state implementation capability. The lesson is uncomfortable for those who equate development with democratisation, but it is consistent with the broader literature on developmental states.

Export orientation is more reliably associated with durable industrial gains than import substitution across all eight cases in the study period. Vietnam's success in global electronics supply chains was not market-driven in any simple sense. The government actively negotiated investment agreements with major electronics manufacturers, created preferential industrial zones, and built infrastructure targeted at export logistics. Market access without deliberate policy architecture did not, in this period, generate comparable results.

Human capital investment remains perhaps the clearest policy lever with durable cross-case support. The education sub-index scores in Figure 4 correlate with export diversification and with the capacity to move up value chains over time. The economies that underinvested in technical education and vocational training found their industrial sectors more exposed to labour-cost competition from lower-wage entrants and less capable of the productivity-driven wage growth that converts industrial expansion into sustained middle-class formation. No single intervention substitutes for this foundational investment.



8. CONCLUSION

The relationship between industrial growth and economic development across these eight emerging economies is positive, significant, and, in the details, highly variable. China and Vietnam achieved the clearest success in converting manufacturing expansion into per capita income gains; Brazil and South Africa registered the sharpest divergence between industrial policy aspirations and development outcomes. The gap between these clusters is not primarily explained by initial endowments or geographic accident. It is explained, more than any other factor, by state capacity, exchange-rate management, and the institutional architecture of industrial promotion.

The concern about premature deindustrialisation deserves serious attention, but not fatalism. The cases here suggest that the manufacturing escalator has not stopped; it has become more selective. Economies that enter global supply chains as disciplined low-cost exporters, invest consistently in education and technical skills, and maintain the bureaucratic capacity to manage industrial transitions are still able to replicate, at varying speed, the structural transformation that raised incomes across East Asia in the twentieth century's second half. Those that substitute rhetoric about industrial policy for the hard institutional work of implementing it are not.

What the analysis cannot resolve and future work should address is whether the window for export-led industrialisation is narrowing in absolute terms as automation raises minimum efficient scale in manufacturing and reduces the labour-cost advantage that historically opened the door to late industrialisers. That question will shape the development prospects of economies entering their industrial transitions in the years ahead, and it deserves the same rigorous comparative attention that this paper has attempted to apply to the experiences of the preceding generation.



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