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Why Indian manufacturing's productivity growth is falling

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Why in News: India's manufacturing sector has not only been a top concern for generations of Indian policymakers but also been a keen area of academic research. Every new government hopes to boost the share of India's manufacturing sector in the country's GDP.

Basis of Economy

Conventional economic wisdom is that manufacturing (as against the services sector) is more capable of soaking up excess labour that is involved in agriculture.

To be sure, every economy can basically be divided into these three sectors — agriculture, manufacturing and services.

In India's case, this need to soak up excess labour is quite high. Agriculture contributes only about 20% of India's Gross Value Added (GVA, which, like GDP, is another way to measure national income) but still employs close to 55% of India's workforce.

The fact that agriculture is not as remunerative as manufacturing or services is made worse by the fact in India there are just too many people dependent on agriculture.

Raising farm incomes is not easy — and this may explain why no one ever hears of the government's promise of doubling farmers' income.

The better solution is to pull people out of farms and get them employed in other sectors. Here manufacturing is more conducive because it requires fewer "soft" skills. Just compare the skill set needed to sell a car in the showroom as against the skills needed to efficiently weld two pieces of metal in the factory.

Having more people in manufacturing was a great strategy not just for making India the preferred factory of the world but also to pull millions out of poverty.

But this required a rapidly growing manufacturing sector and it was the kind of "structural transformation" that an economy like India needed.

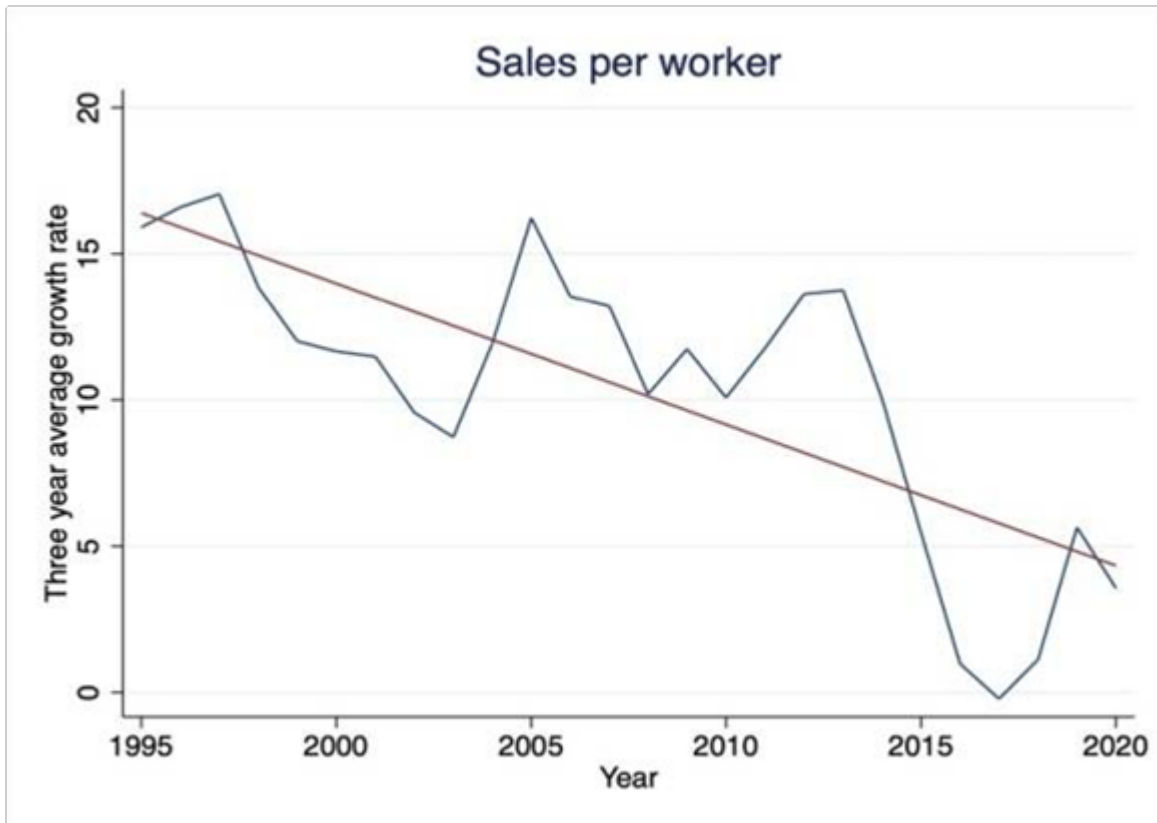
As things turned out, this did not happen in India. The share of manufacturing both in India's GDP or overall employment has largely stayed stagnant. Most of India's GDP now comes from the services sector while millions continue to languish in the agriculture sector.

Key takeaways about productivity of Indian manufacturing Productivity growth in Indian manufacturing is slowing

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The authors have used the data from India's Annual Survey of Industries (ASI) and looked at revenue (sales) per worker to measure productivity.

Figure 1 below shows the trend in the three-year moving average of aggregate (pan-India) annual productivity growth in manufacturing from 1990 to 2020.

The figure reveals a general downward trend in productivity growth since the 1990s, accelerating in the mid-2010s and in the years leading up to the Covid-19 pandemic.

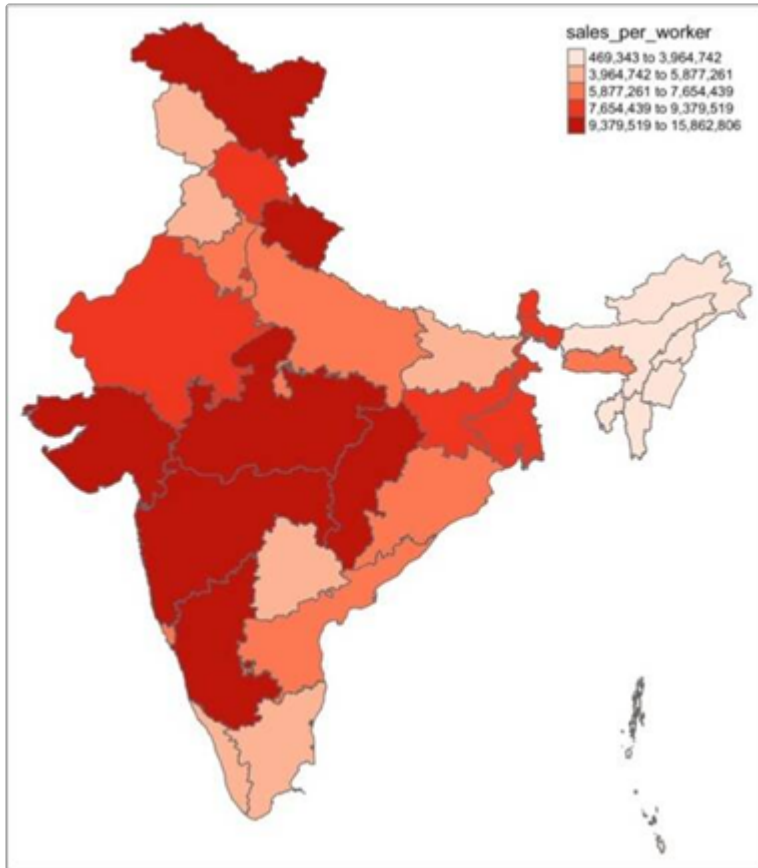
The growth rate of productivity fluctuated between 10 to 15 percent in the 1990s and 2000s; productivity growth began to stagnate after 2015, and this negative trend accelerated into the several years preceding the pandemic

Indian manufacturing productivity is several times lower than that of the United States

In 2020, the level of manufacturing productivity per worker in India was \$94,249 — that's close to a fifth of manufacturing productivity in the United States (\$484,862).

Even if one makes adjustments for purchasing power (because Rs 80 buys more of the same commodity in India than what a dollar buys in the US), Indian productivity rises to \$296,000 per worker — still only three-fifths of the figure in the US.

There are wide differences in manufacturing productivity across Indian states



One might say, this is not new: everything in India has differences across states. But that is where this finding was surprising.

Look at the India map (Figure 2); the darker the region the higher the manufacturing productivity.

The data shows that the manufacturing productivity in Madhya Pradesh (a state few would associate with manufacturing success) is much higher than that of Tamil Nadu (a state that is the preferred destination of most companies).

Western and Central Indian states tend to have the highest average productivity in manufacturing, while the Southern and Eastern states have the lowest.

This is in contrast to the GDP per capita ranking of states, in which Southern states tend to have higher incomes than their Western and Central counterparts.

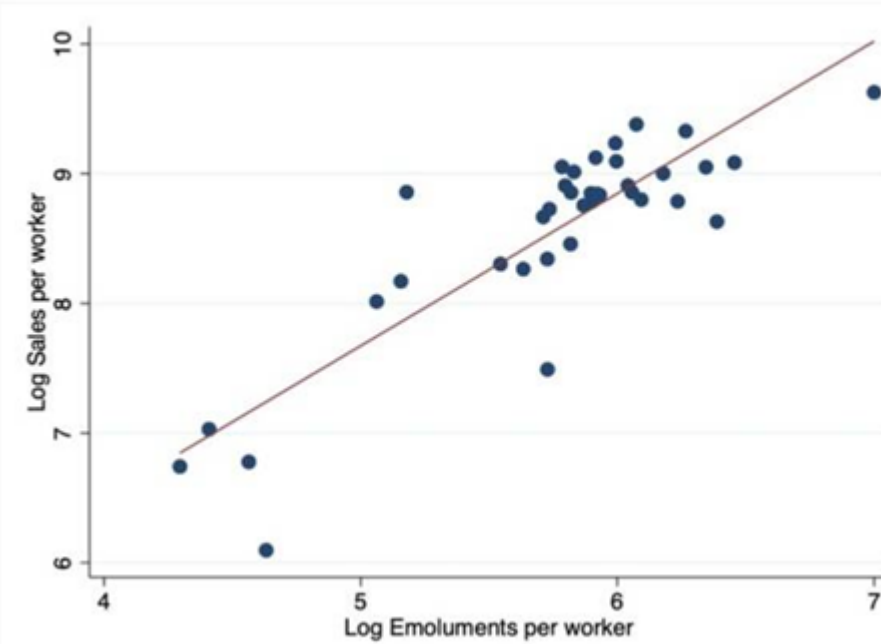
Productivity is strongly correlated with firms' investments in their workers

Simply put, data shows that investing in workers pays rich dividends for firms. This investment could either be through higher salary and/or better benefits (e.g. medical facilities, recreation, festival bonuses etc.)

As Figure 3 shows, there is a tight positive association between the investments in workers and productivity across states.

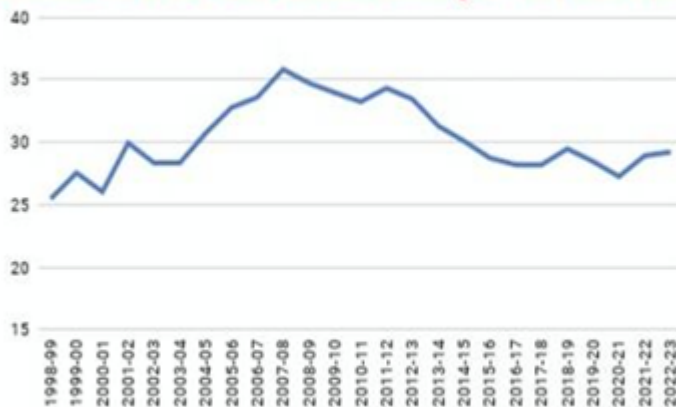
Of course, correlation is not causation but the remaining part of the paper is essentially about establishing causation — and there's a lot of India-specific evidence to that effect.

Figure 3: Association between log productivity and log emoluments, aggregated data at state level for 2019-2020



Investment to GDP Ratio (in %)

The investment to GDP ratio has been declining for more than a decade



Source: Centre for Monitoring Indian Economy.

Source: Kaul (2023)

Employment in Manufacturing

Formal sector manufacturing employment share has been stagnant

Year	Manufacturing (% of total employment)	Informal Employment (%) in Manufacturing	Informal Manufacturing Employment (%) in Total Employed	Formal Manufacturing Employment (%) in Total Employed
2005	11.8	66.3	7.8	4.0
2010	11.3	63.9	7.2	4.1
2012	12.9	61.7	7.9	4.9
2018	12.5	59.0	7.4	5.1
2019	12.3	58.4	7.2	5.1
2020	11.3	58.4	6.6	4.7
2021	11.5	57.4	6.6	4.9

Source: ILO stats using NSO Employment Survey and PLFS

Source: Ghatak and Kumar (2023)

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Falling employment in Indian Manufacturing

Notwithstanding the overall population growth, the total number of people employed in the Indian manufacturing sector has fallen by over 30% between 2016-17 (51.3 million) and 2022-23 (35.7 million)

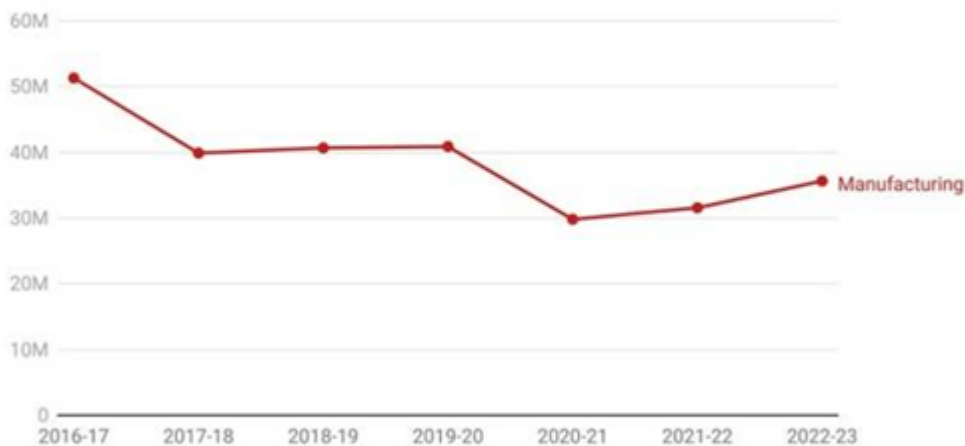


Chart: Udit Misra • Source: CMIE • Created with Datawrapper

The growth of manufacturing productivity in India declined over the past decade

This may be explained by Figure 4, which uses official data to show that the manufacturing sector's growth rate itself has been nosediving since 2015.

Figure 5, which shows that investments-to-GDP ratio has been faltering in the economy and has become particularly weak since 2015.

Figure 6, which uses government data to show that formal employment in manufacturing has been largely stagnant while informal employment (which was the bigger contributor) has declined.

Figure 7, which maps the total number of people employed in India's manufacturing sector since 2016.

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This data from CMIE shows that employment in India's manufacturing sector has fallen from over 51 million in 2016 to less 36 million in 2023 — a fall of over 30% even as the country's working-age population continued to grow by millions every year.