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Comparing Sectoral Productivity Levels in India and China

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The global economy has witnessed substantial changes since the 2000s, as the fragmentation of global production accelerated, and international trade, particularly that of intermediate goods, enhanced. The acceleration in the global value chain was, in part, facilitated by the onset and diffusion of information and communication technologies, particularly since the 1990s, and the joining of major emerging markets such as China in the World Trade Organization (WTO). Two dominant Asian economies which benefitted substantially from these dynamics along with several domestic policy changes, are China and India. The surge in economic growth in these countries has been subject to several analyses, looking into the factors that contributed to their faster economic growth during the last two decades.

However, a less researched aspect of the growth dynamics in these countries is how they compare in the levels of productivity. While analyzing the dynamics of economic growth and its sources per se have vital importance in the literature and policymaking, the ultimate objective of achieving higher growth is to achieve a higher level of development. A comparison of productivity levels by industries in India and China would help us understand the relative positions of various sectors, and to identify the scope for further improvement. There is a conspicuous absence of a comparable understanding of income and productivity levels between China and India, relative to the advanced world.

This paper is perhaps a first attempt to compare productivity levels - both labor productivity and TFP levels - in India with that of China at a detailed industry level. Using detailed sectoral purchasing power parities (PPPs) and sectoral data on factor inputs- capital and labor (including skill and asset compositional differences)- and value-added for China and India, we decompose the gap in labor productivity levels between the two countries into contributions in capital deepening, labor quality and total factor productivity (TFP). Furthermore, we compare the industry productivity levels in these two economies with the global productivity frontier by taking the United States as a benchmark economy. We find that China has improved its productivity and income levels compared to India substantially since the 1990s, and particularly so since the early 2000s. India, which maintained an edge over China in the pre-1990 period, lost the momentum as China moved ahead much faster, climbing up the productivity ladder. In sectors where India maintains a productivity edge over China, that is primarily due to high capital deepening. At the same time, in sectors where India's productivity levels are worse than China, levels of both capital deepening, as well as TFP, are weak. Chemicals sector in India turns out to be the best performing sector in terms of both labor productivity and TFP compared to China.