EVOLUTION OF INDIA'S CAPITAL GOODS SECTOR FROM THE PERSPECTIVE OF ROLE OF STATE

ABSTRACT

India followed a planned industrialization strategy with a particular focus on the development of the capital goods sector. As is well known, the capital goods sector is considered the backbone of the industrialization process given its vital role in driving manufacturing growth through intersectoral linkages and productivity growth. Capital goods as carriers of embodied technological change play a significant role in enhancing the productivity of user industries. The presence of a viable and competitive capital goods sector is a reflection of domestic technological competence and ability to learn and innovate, both at the firm and sectoral level. Since the reforms (1992-93) Indian capital goods sector has grown in size and has become significantly more integrated with the world economy. However, India has emerged as a net importer of capital goods with a widening trade deficit and a meagre share in world exports. In this context, this thesis explores the evolution of India's capital goods sector since the 1980s from the standpoint of drivers of demand and supply capabilities, the nature and pattern of international integration on the one hand and the changing role of the state on the other in shaping this trajectory. The thesis is divided into six chapters, including the introduction and conclusion.

In the second chapter of the thesis, we examine the growth and structural change within India's capital goods sector and the nature of international integration of the sector since the 1980s. There has been a drastic change in the industry structure of the capital goods sector since the reforms. Among the three major subsectors of capital goods, namely, non-electrical, electrical and optical equipment and transport equipment, India had built a reasonably fair level of technological capabilities in the non-electrical machinery sector. However, the sector saw a

continuous decline in its share in capital goods value-added since the reforms. In contrast, the transport equipment sector led by motor vehicles with a steady increase in its share in capital goods value-added has emerged as the leading capital goods subsector. Despite being the fastest-growing sector in the 1980s, the electrical and optical equipment sector emerged as the sector with the lowest share in capital goods value-added due to a very sharp deceleration in growth after the reforms of 1992/93.

We argue that the difference in sub-sectoral performances is linked to the nature and pattern of international integration and its differential impact on supply-side capabilities of each sector, given the evolution of demand. We observe that the greater integration of capital goods subsectors with the global economy is associated with a substantial increase in trade deficit in all subsectors except motor vehicles.

In the context of increasing import penetration, we analyze the domestic production status of capital goods, i.e., the contribution of domestic production in domestic consumption/use of capital goods. We find that domestic production status is strong in the transport equipment sector, weak in electrical and optical equipment, and marginally weak in the non-electrical machinery sector. The weak and marginally weak domestic production status explains the significant contribution of electrical and optical equipment and non-electrical machinery sector to the overall capital goods trade deficit. In contrast, motor vehicles, a subsector of transport equipment, is the only sector in which India has a positive trade balance. Though India had built a reasonably robust and efficient non-electrical machinery sector, the rising import dependence in the sector despite the growth in domestic production and consumption demand indicates import competition-led pressures on profitability and capacity growth. The increasing import penetration in the electrical and optical equipment sector despite the increase in consumption demand reflects the lack of domestic technological capabilities and consequent weak domestic production structure.

The evaluation of domestic value addition reveals the extent to which a country adds value to the goods and services it produces. The level of domestic value-added content in value of output/exports is an indicator of domestic technological capabilities and the country's resultant capability to derive gains from production, whether geared towards domestic production or to integrate globally using global value chains (GVCs). In the third chapter, we evaluate the domestic value addition performance of the Indian capital goods sector from 1980 to 2016. We find a declining trend in the domestic value-added per unit of output across all capital goods sub-sectors. However, the decline in value-added plays out unevenly across subsectors. In the electrical and optical equipment sector, declining and low domestic value-addition per unit of output alongside a growing trade deficit is an anticipated result, given the lack of domestic production capabilities to internalize technological spillovers of robust demand growth. However, the non-electrical machinery sector with an increasing trade deficit and a declining share in both capital goods value-added and output has the smallest decline in the domestic value-added per unit of output. The sharpest decline in gross value-added per unit of output is in the transport equipment sector, the largest and fastest-growing capital goods subsector with an export surplus in one of its subsectors: motor vehicles.

An analysis of the nature and pattern of integration of the Indian capital goods sector into GVCs shows that the domestic value-added content of capital goods exports has decreased over time while foreign value-added content has risen. All subsectors of capital goods saw a decline in net value-added gains from integrating into the global value chain. We argue that motor vehicles sector is a unique case of integration showcasing impaired domestic value addition but positive trade balance in gross terms. The declining domestic value-added per unit of output and ratio of forward to backward linkage alongside an export surplus indicates that integration of the sector into GVCs is primarily through backward integration and perhaps also has terms-of-trade implications.

Contrary to the Indian capital goods sector's experience, the foreign value-added content in China's capital goods exports has been declining, and post-2007 onwards, the domestic value-added content has increased. The declining domestic value addition per unit of output and the rising backward linkage led integration suggests the lack of focus on value-added processes in domestic production structure development in India while integrating to GVCs. We argue that India's capital goods sector needs to focus on value-added processes and keep pace with technological change to increase domestic value addition and thereby derive gains from global value chain participation.

Given the sub-sectoral variations in the performance of India's capital goods sector at the macro-level, we explore the firm-level dynamics across different growth regimes of India in the fourth chapter to see whether it will throw any light on the variations in performance. We observe that capital goods and its subsectors see reasonably robust sales growth, driven by the motor vehicles sector. However, despite this, the sector and its subsectors remain under sustained profitability pressures with contractions in profitability. In general, large-sized firms perform better than medium-sized firms in sales growth and during the high growth phase of the Indian economy, large-sized firms recorded positive profit growth. However, outside of the high growth phase, irrespective of firm size, the annual average growth rate of profitability has been negative across the board.

The global integration levels of the capital goods firms have risen, driven by growing import integration. The examination of technology characteristics shows that Indian capital goods firms depend more on imported embodied technology and invest least in in-house R&D. We empirically investigate the role technology characteristics play in determining the performance of Indian capital goods firms. We find that import of embodied technology has a positive influence on firm performance. The examination of possible interaction between technology strategies reveals that in-house R&D expenditure enables capital goods firms to utilize

imported embodied technology more effectively. There is a positive relationship between firm size and profitability, whereas the relationship between age and profitability is negative.

There is a renewed interest in industrial policy and the role of the state in economic growth and development. However, a review of the literature shows that there have been debates on how the role of the state and the nature of industrial policies have to change with the pervasiveness of GVCs. In the fifth chapter of the thesis, we examine the effect of the changing role of the state on the growth and development of India's capital goods sector. We observe that there has been no shortage of policies in India aiming to boost the growth and competitiveness of the sector. However, despite the institutional focus, India has emerged as a net importer of capital goods with a negligible share in world export markets, indicating the failure of policies in turning around the industry.

A critical review of these policies shows that these policies are more or less a repetition of issues affecting the sector and measures to address them. More importantly, these policies lack an understanding of how GVCs have affected the capability development process of firms and value-addition processes. We argue that the current status of the Indian capital goods sector is the cumulative outcome of abandonment/withdrawal of the state shaping the domestic capability building process as well as the return of the state to try and shape industrial outcomes with insufficient understanding of how GVCs function. Therefore with no concrete measures to engage with GVCs strategically, to develop domestic linkages crucial for learning and building capabilities to create, compete and capture a higher share of value-added in the era of GVCs, the state’s intervention has made little difference in helping firms becoming technologically dynamic and effective competitors.