



Make in India: State of Manufacturing in India

Introduction

There has been considerable disquiet among Indian policymakers and analysts at the poor performance of the manufacturing sector. The share of manufacturing in GDP is much lower in India than in China and has been almost constant over the past decade or so. The lack of dynamism of the manufacturing sector is held responsible for the slow growth of employment and also of exports as a result of which the trade deficit has ballooned. The current Indian government seeks to give a significant push to this sector and has coined the phrase “Make in India” to attract foreign entrepreneurs to the manufacturing sector.

This *Policy Brief* analyses the Indian manufacturing sector in the context of the performance of the sector in developing countries in general and in BRICS countries in particular. It then seeks to identify a strategy for raising the growth rate of the sector.

The period 2001-07, before the onset of the financial crisis, was a golden period for growth in developing countries as they were catching up with the high-income countries because their rate of growth accelerated while growth in high-income countries significantly slowed. This is in contrast to the previous “golden age” of capitalism¹ when developing countries had grown rapidly, but the developed countries had grown even faster.² This rapid growth in developing countries in the face of the slowdown in

developed countries raised hopes that the growth process in developing countries had developed its own momentum.³ However, the subsequent slowdown in growth in most groups of developing countries shows their continuing vulnerability for the state of the world economy.

Growth rates in the BRICS countries also accelerated in the period 2001-07, though growth rates continued to be modest in Brazil and South Africa. Growth rates have declined across the BRICS countries since the financial crisis falling to low levels particularly in Brazil, Russia and South Africa.

Manufacturing in the Developing World and in BRICS

Share of Manufacturing in GDP

Despite rapid overall growth, the performance of the manufacturing sector has been poor. The share of manufacturing in GDP had stagnated in the low-income countries in the years from 1974 to 2000 but increased thereafter (Table 1).

The share in the middle-income countries had increased before the 1990s but has tended to decline since.⁴ The exact timing of the reversal from an increasing share of manufacturing in GDP to a decreasing share varies between the regions. In East Asia Pacific (EAP) and Sub-Saharan Africa (SSA), it started decreasing after the period 1974-82, whereas in the Latin America and the Caribbean (LAC) the

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¹ Marglin, Stephen A. and Juliet Schor (eds.) (1990). *The Golden Age of Capitalism: Reinterpreting the Postwar Experience*. Oxford: Clarendon Press.

² Agarwal, Manmohan (2008). "Changing Economic Power in the World Economy." *RIS Discussion Paper No. 143*. Research and Information System for Developing Countries (RIS), New Delhi.

³ The growth in South-South trade and in FDI flows among developing countries provided a basis for this hope. See Agarwal, Manmohan (2015). "Reconfiguring International Financial Institutions: The BRICS Initiative." *RIS Discussion Paper No. 196*. Research and Information System for Developing Countries (RIS), New Delhi.

⁴ The share of the upper middle-income countries declined from 23.9 per cent in the period 1991-2000 to 23.1 per cent in 2008-13.

⁵ A longer series of data is available for the share of industry, which includes manufacturing, in GDP. The share drops from 49.3 per cent in 1989-90 to 40.6 per cent in 1991-2000 to 35.6 per cent in 2001-07 and 35.8 per cent in 2008-13.

decline has been particularly sharp since the 1983-90 period. There is a further difference in the performance of the sector in more recent years. Its share has declined continuously in LAC and Sub-Saharan Africa (SSA) whereas in East Asia and Pacific (EAP) it is almost constant and in South Asia (SA) there is an overall increase though with fluctuations.

The BRICS countries exhibit a pattern similar to that of their regions (Table 1). The share of manufacturing in GDP had been rising in Brazil and South Africa till the period 1983-90 and has fallen precipitously since then. In Brazil, it is now less than half and in South Africa slightly more than half. The share in Russia also has been declining over the more limited period for which data is available. In China, the share increased till the 1974-82 period and since then has declined though it has been relatively constant since the 1991-2000 period. In India, the share has fluctuated though overall

the share has increased.

Labour Productivity and Use of Intermediates

The changes in labour productivity show a common pattern among the regions. The pace of productivity increase speeded up in the 1990s compared to the 1980s except in SSA, then further accelerated in the period 2001-07, before slowing after the crisis. Productivity per worker has grown the fastest in China followed by India.

The percentage of value added in the gross value of output has declined in four of the BRICS countries, namely, Brazil, China, India and Russia, during the period 1995-2011. China and Brazil used the least amount of intermediate goods whereas India and Russia used the most. Furthermore, Russia which had a low value added to gross value ratio in 1995 saw the ratio fall further in this period. India uses more imported inputs than other countries and also experienced the greatest increase in their use. This reflects the effect of the liberalisation of the earlier

Table 1: Share of Manufacturing (% of GDP)

Countries	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-13
EAP	27.5	33.4	31.1	30.9	31.2	30.6
LAC	24.3	25.5	25.9	19.5	17.9	16.0
SA	13.4	15.6	15.8	15.7	15.4	16.2
SSA		16.7	15.6	13.9	12.5	11.1
Low Income Countries		11.3	11.3	11.3	12.5	12.5
Lower middle Income	13.6	15.3	16.5	17.6	17.5	17.1
Brazil	28.3	31.5	32.3	20.3	17.7	15.0
China	31.8	38.5	34.7	32.9	32.4	32.2
India	13.7	16.0	16.0	15.7	15.3	16.4
Russia					17.4	15.4 ⁵
S.Africa	22.2	22.2	22.8	20.6	19.1	14.2

Source: World Bank, World Development Indicators.

Note: EAP – East Asia and Pacific; LAC – Latin America and Caribbean; SA – South Asia; and SSA – Sub-Saharan Africa.

import policy under which imports were not allowed if domestic substitutes were available, even if of poor quality. Except for China, the changes in the use of domestic inputs are in the opposite direction to that for imported inputs so that imported and domestic inputs are substituted.

Structure of Manufacturing

We calculated the share of the different sectors in total value added for the manufacturing sector for the years 1995, 2000, 2005 and 2011.⁶ We next calculated the correlation between the structures for the different years.

Exports of Manufactures

The very high and significant correlation coefficients⁷ suggest that there is little change in the structure of the manufacturing sector in these countries over a decade and a half which includes a period of very rapid growth and another period of adjustment to the financial crisis and a slowdown of the world economy. The share of the manufacturing sector that has been exported has increased for all the countries except Russia where it has steadily declined from its peak in 1999 (Figure 1). The increase has been the greatest and the steadiest for India; India exports a larger share of its output than the

other three. The peak export share for China was in 2005 and for Brazil in 2004.

The correlations between the shares of manufactures exported in the years 1995 to 2011 are very high among Brazil, China and India despite the differences between the behaviour of the manufacturing sector among these countries suggesting that the changes in shares exported are similar and governed more by common international factors than individual country policies.

We next examine changes in the structure of manufacturing exports. We examine two aspects of this. First, we examine the variation over time in the share of the output of each sector that is exported. Second, how does each sector's contribution to the total exports of manufactures vary over time, viz., how the export basket of manufactures is varying over time.

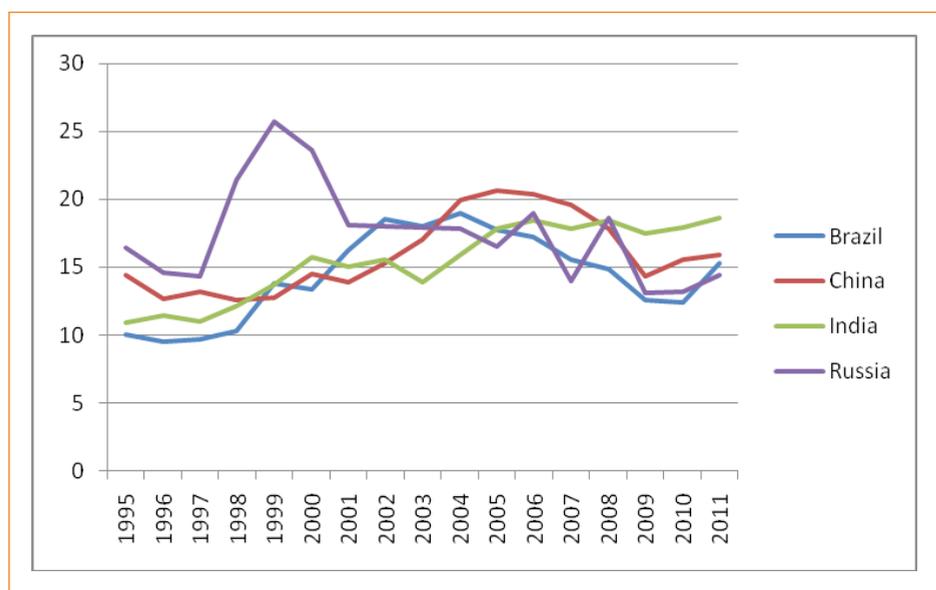
The share of the different sectors in the total exports of manufactures has not changed significantly over the years in Brazil, China and Russia. The correlation coefficients for the sector contributions for different years are all at least 0.73.⁸ The conclusion is that the export basket has not changed very much. We had seen earlier that the structure of the manufacturing sector has remained relatively

⁶ There are 14 different sectors, viz. (i) food and beverages, (ii) textiles, (iii) leather, (iv) Wood, (v) pulp, (vi) coke, petroleum, etc., (vii) chemical, (viii) rubber, (ix) other non-metallic minerals, (x) basic metals, (xi) machinery, (xii) electrical machinery, (xiii) transport equipment, and (xiv) manufacturing n.e.c.

⁷ We have 14 sectors and so 12 degrees of freedom; the 1 per cent significant value for the correlation coefficient is 0.661 and the 5 per cent significance level is 0.532.

⁸ For 12 degrees of freedom the 1 per cent significant value for the correlation coefficient is 0.661 and the 5 per cent significance level is 0.532.

Figure 1: Share of Manufactures Exported, 1995-2011



⁹ Gerschenkron, Alexander (1962). *Economic Backwardness in Historical Perspective*. New York: Praeger.

¹⁰ Allen, G. C (1946). *A Short Economic History of Modern Japan*. London: Allen & Unwin.

constant in these countries. The constancy of the export shares suggests that the export markets have not been a force for changes in the structure of the manufacturing sector.

India is the only country among the four where the share of output exported by the different sectors export has changed significantly. The correlation between the shares of the output of the different sectors that are exported in 1995 and 2011 is only 0.32 which is not significant. So the share of the output of a sector that is exported in 2011 is not similar to the share of that sector's output that was exported in 1995. The structure of the share of output of different sectors exported seems to have changed after 2005.

India is also the only country for which the export basket has changed significantly. The correlation coefficient for the export structure in 1995 and 2011 is 0.32 and for the export structure between 2000 and 2011 is 0.46, both of which are not significant at usual levels. This suggests that there has been a significant shift in the sector composition of India's exports of manufactures.

When we compared the export basket of the four countries, we found that they are very different so they are not competing with each other. Furthermore, the differences in the export baskets have grown over time. But Chinese and Indian manufactures compete as there is a similarity in their export baskets and this similarity has grown over time.

Structure of Exports

Exports and Use of Imported Inputs

We examined the pattern of use of imported inputs by calculating the value of imported inputs in gross value of output for the different sectors. This pattern has changed significantly in India. The correlation between the shares of imported inputs

sector-wise between 1995 and 2005 is 0.95 but drops to merely 0.35 for the sector-wise use of imported inputs between 1995 and 2011.

We do not find any significant correlation between the share of imported inputs in gross value of the output and the share of the output that is exported. Again the only exception is India where there is a significant positive relation between the use of imported inputs and export success at the sector level in 2005 and 2011.

We also did not find that labour intensive sectors were export intensive either for India or for the other countries. In brief, the structure of the manufacturing sector and that of manufacturing exports shows remarkable stability despite very contrasting performances of the sector in the individual countries. India is the only country where there has been a major structural shift. Considerably more of the output of the sector is being exported and this success seems to be tied to the use of imported inputs whose use has increased considerably. There is a strong correlation at the sector level between export success and use of imported inputs in India.

Manufacturing and Availability of Finance

Availability of long-term finance is very important for the growth of the manufacturing sector. Different countries have adopted different policies to provide long-term finance to the manufacturing sector. In Germany, in the absence of a share market, banks stepped in to provide long-term finance and were represented on the boards of companies to protect their investments.⁹ The state provided long-term finance in Russia before the revolution. In the case of Japan, the state set up the first factories and when they were running successfully sold them cheaply to private entrepreneurs.¹⁰ Innovative methods have

been adopted to finance industrialisation.

When developing countries attempted to industrialise their economies after the Second World War, a major challenge they faced was to provide finance for investment in manufacturing. Stock markets then were almost non-existent in developing countries. Even now they have only limited capacity to mobilise resources for investment. A report on the Brazilian stock market noted that even in Brazil, the stock market played a very limited, almost no role as there were hardly any initial public offerings by Brazilian companies, companies were delisting and preferring to raise money in New York and trading volume was declining.¹¹

Governments established domestic finance companies (DFCs) to provide finance mainly for manufacturing companies. These DFCs raised money through deposits from the public and through loans from the government and bilateral and multilateral aid-giving institutions. DFCs, particularly in Latin America, have not been successful as they have been reluctant to lend long-term loans because of the uncertainty created by high rates of inflation, balance of payments deficits and macro instability.¹²

Challenges to Accelerated Growth of Manufacturing in India

India had developed a complex system consisting of the share market, development finance banks, other government institutions such as life insurance companies and mutual funds to provide finance to the manufacturing sector. India's capital market was relatively underdeveloped at the time of independence in 1947. In this situation, the government established the Industrial

Finance Corporation of India (IFCI) on 1 July 1948. IFCI was the first DFC that could provide loans to corporate borrowers at concessional rates because of its access to low-cost funds through the central bank's statutory liquidity ratio. Later in 1954, the Industrial Development Bank of India (IDBI) was established by an Act of Parliament to provide credit and other financial facilities to the fledgling Indian industry. Then in 1955, the Industrial Credit and Investment Corporation of India Limited (ICICI) was incorporated at the initiative of the World Bank, the Government of India and representatives of Indian industry, to provide medium- and long-term project financing to Indian businesses.

The pattern of allocation of household financial savings completely changed in the 1980s as they preferred shares. Consequently, large companies could raise vast sums of money from the share market. Almost 20 per cent of the financial savings were invested in shares either directly or indirectly through the Unit Trust of India (UTI), a government mutual fund. Somewhat smaller enterprises had access to the DFCs and to the Life Insurance Corporation of India for long term funds.

Subsequent to the liberalisation, started in 1991, a number of scams hit the stock market hurting the small investors who did not have access to privileged information nor could protect themselves. Later at the turn of the century, the asset value of the UTI fell and the burden of this was disproportionately borne by the small investors. As a consequence, investments in shares and in the UTI have lost favour and bank deposits have become more attractive

Meanwhile, the DFCs that had been established in India were converted into banks so they also dried up as a source of long-term capital. However, a positive development has been the establishment of a number of private venture capital

¹¹ This is from a case prepared by Aaron Mihaly under the supervision of Professors Roger Leeds and Francis Fukuyama of Johns Hopkins School of Advance International Studies for a class discussion. For further discussion of the operations of Brazilian Development Bank (BNDES) see Lazzarini, Musacchio, Bandeira-de-Mello, and Marcon (2011).

¹² "Over the decades, particularly during Brazil's period of runaway inflation in the 1970s and 1980s, long-term finance was not available from the market, so BNDES stepped into the breach." *Financial Times* online edition for 11 January 2015.

funds. Either these venture funds will fill the gap left by the withdrawal of small savers from investing in stocks and the changeover of the DFCs or new channels for intermediation will have to be developed.

Demand

Any sector that seeks to grow rapidly must have a source of demand so that firms find it profitable to invest in the sector. This demand can be domestic or foreign. Given the sluggish current and projected growth of the world economy, policymakers might deem it preferable to base their policy for more rapid growth of manufacturing on domestic demand. But this would be unwise. The domestic absorption of the increased output would require increased purchasing power in the hands of the people. There are limits to which the employment guarantee scheme can transfer purchasing power. Raising agricultural productivity to levels that would sustain the demand for rapid manufacturing growth may be beyond the capacity of the system at least in the short-term. Increasing urban purchasing power would mean higher wages. There are a number of obstacles to following this path. Higher wages may set off a cost-push inflationary spiral. Also, while the increased demand would provide an incentive for investment, higher wages might eat into profitability and discourage investment. Higher wages also might lead to capital flight as the income distribution in most countries is tilting towards

capital. In these circumstances, depending on foreign demand may be more appropriate. Furthermore, higher wages would make it more difficult to penetrate foreign markets. These difficulties had earlier resulted in the failure of the import substitution strategy that many developing countries had adopted.

Breaking into foreign markets will be challenging as many countries are following this path even as world demand remains depressed. The Reserve Bank will need to intervene in the foreign exchange market to ensure an appropriate exchange rate.

Productivity Increase

Furthermore, productivity must increase rapidly in order for the goods to compete in international markets while simultaneously providing the necessary profits and increasing wages. To achieve such a productivity increase, industry will require more skilled workers and closer ties between industry and Indian research organisations. Currently, Indian enterprises more often than not hire US universities to undertake the necessary research.

Conclusions

Accelerating growth of manufacturing would require action across a number of areas apart from streamlining the approval process. It would require developing innovative means of providing finance to companies, following an exchange rate policy that makes exporting attractive, raising skill levels of the work force and strengthening links between industry and research. The government has started action in some areas but more is needed. On its part,

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