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The Manufacturing Sector in India

Manmohan Agarwal*

Abstract: Considerable concern has been expressed by Indian policy makers about the low share of manufacturing in GDP and the stagnation in this share. Growth of the manufacturing sector is also considered essential to provide employment necessary to bring down the high rates of unemployment particularly among the young. This paper analyses the performance of the manufacturing sector in India against its performance in developing countries, particularly, the BRICS countries. Trends in India are in line with what has been happening to the manufacturing sector in developing countries generally. The share of the sector in GDP has declined sharply in the other BRICS countries, except China. The performance of large companies is critical. This paper finds that investment by these companies has been declining because of both supply and demand factors, declining growth in sales and a declining rate of profit.

Keywords: Manufacturing Sector, India, BRICS.

Introduction

Considerable concern has been expressed by Indian policy makers about the low share of manufacturing in GDP and the stagnation in this share. Growth of the manufacturing sector is also considered essential to provide employment necessary to bring down the high rates of unemployment particularly among the young. We analyses the performance of the manufacturing sector in India against the background of overall growth and the sector growth rates among developing countries. In particular, we examine the performance of some large developing countries, the BRICS countries.

Section 1: Economic Performance in Developing Countries Regions

The period 2001-07 before the onset of the financial crisis was a golden

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period for growth in developing countries. Developing countries grew faster than the developed countries over the period 1965 to 2015, except for the period 1983-90, so that there has been broad catch-up (Table 1).

Table 1 Growth of Per capita GDP (annual average %)

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15
World	3.3	0.9	1.9	1.3	2.2	0.3	1.5
Low and Middle Income	3.7	2.0	1.4	1.5	5.0	3.8	3.4
Low Income			-0.4	-0.8	1.9	2.8	2.3
Lower Middle Income	1.8	1.9	1.7	1.4	4.6	4.1	3.5
Upper Middle Income	4.5	2.4	1.5	1.9	5.6	4.3	3.7
EAP	4.4	4.6	6.1	6.9	8.4	7.8	6.5
LAC	3.8	1.8	-0.2	1.3	2.2	1.5	0.9
MNA	6.6	-0.3	-0.4	1.4	3.1	2.3	-0.7
SA	0.5	1.8	3.2	3.2	5.1	5.3	5.0
SSA	2.2	-0.2	-1.3	-0.6	3.4	1.7	1.3

Note: The regions are as defined by the World Bank. EAP is East Asia and Pacific, ECA is Europe and Central Asia, LAC is Latin America and Caribbean, MNA is Middle East and North Africa, SA is South Asia and SSA is Sub-Saharan Africa. All data for the regions excludes high income countries.

Source: http:// databank.worldbank.org/data/home/aspx

World Development Indicators, World Bank, Washington D.C.

The pace of catch up has been particularly rapid since the turn of the century because of the large gap between the growth rates of developing countries and the world during 2001-07 which persisted even after the crisis of 2008. Since the turn of the century developing countries as a group have experienced a marked acceleration in their rate of growth despite a significant slowdown in growth in high income countries.[1] However, low income countries have not been catching up since the turn of the century; they grew slower than the world during the period 2001-07 of rapid growth.[2] It is only since the crisis of 2008 that low income countries have grown faster than the world.

Another feature of growth in developing countries is the increasing divergence among developing countries. The low income countries have consistently grown slower than the lower middle income countries which in turn have gown slower than the upper middle income countries except during the period 1983-90. So the gap among developing countries has grown and there is not convergence.

When we look at region wise growth we see that the Asian regions have usually grown faster than the other regions. The EAP region has been the fastest growing region since the period 1974-82 and the South Asia region has been the second fastest growing region since the 1983-90. The pace of growth in SSA region has picked up since the turn of the century. While earlier it was one of the two slowest growing regions it is now usually the third fastest growing region. LAC has experienced a substantial decline in its growth rate and one that has persisted for almost half a century. The growth in the region declined from 3.8 per cent in the period 1965-73 to 1.2 per cent for almost the next half century, namely to less than one third.

An important positive feature of recent developments in developing countries is the maintenance of high rates of investment despite the growth slowdown (Table 2); and these investments have been financed largely by high rates of domestic savings (Agarwal and Chakravarty, 2017). The share of gross capital formation (GCF) in GDP has increased in all the developing regions despite the economic slowdown.

Table 2: Gross Capital Formation (% of GDP)

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-13
EAP	26.7	32.7	34.4	36.4	36.7	42.7
LAC	21.1	24.2	20.2	19.6	19.6	21.2
SA	15.3	18.9	22.1	23	28.9	33
SSA	24.6	25.5	18.1	16.7	17.6	20.6
Low Income	12.4	15.1	16.9	18.2	21.3	25.1
Low Middle Income	15.8	22	22.8	22.7	25.5	29.1

Source: http:// databank.worldbank.org/data/home/aspx

World Development Indicators, World Bank, Washington D.C.

Another significant feature of the performance of developing countries is the behavior of exports. The share of exports of goods and services (XG&S) in GDP has increased over the years for all the developing country regions (Table 3). Asia, both east and south, had very low levels of exports till the 1970s. Since then the share of XG&S has increased rapidly, starting in the mid-seventies for East Asia and the 1990s for South Asia. Since the financial crisis the share of XG&S in GDP has tended to decline in all the regions except South Asia. The decline has been particularly sharp in EAP.

Table 3: Exports of Goods and Services (% of GDP)

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15
EAP	6.7	10.6	15.4	24.2	35.2	31.9	29.1
LAC	10.2	12.2	15.2	15.6	21.2	19.9	20.2
MNA	20.5	30.2	17.4	24.2	35.5	34.2	30.2
SA	5.1	7.1	7.2	11.6	17.3	21.1	21.5
SSA	20.7	25.9	26.3	30.3	34.5	33.6	29.9

Source: http:// databank.worldbank.org/data/home/aspx
World Development Indicators, World Bank, Washington D.C.

Section 2: Economic Performance in the BRICS

Growth performance among the BRICS countries has been very different. China has grown at an annual average of 7.6 per cent during the half century, 1965-2015, more than twice that of the next fastest growing economy (Table 4). It achieved a particularly high rate between 1983 and 2010. In almost all the years since the 1980s it had the fastest rate of growth of per capita income. Brazil and India witnessed a break in the growth rate after the 1974-82 period. While the average annual growth over the fifty year period was 2.2 and 3.3 per cent respectively for Brazil and India, there is a considerably higher difference in the growth rates after 1982. After 1982 Brazil had an average annual growth rate of merely 1.2 per cent while that of India was 4.5 per cent. Growth rates in Russia have been very low except for period 2001-07. Growth rates in South Africa have also been very low. Growth rates in both Russia and South Africa have tended to fluctuate considerably.

Table 4: Growth of per capita GDP, 1965 to 2015

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15	1965-15
Brazil	6.0	2.4	0.6	1.0	2.2	3.1	0.1	2.2
China	5.3	4.9	8.3	9.3	10.2	9.4	7.3	7.6
India	0.5	1.6	3.5	3.6	5.6	6.0	5.4	3.3
Russia			-3.4	-3.5	7.2	0.6	0.7	-0.3
S. Africa	2.7	0.9	-1.1	-0.4	2.8	0.1	0.5	0.8

Source: http:// databank.worldbank.org/data/home/aspx

World Development Indicators, World Bank, Washington D.C.

These BRICS countries also experienced an acceleration of growth rates in the period 2001-07, though growth rates continued to be modest in Brazil and South Africa, lower than in various groupings of developing countries (Table 1).[3] Growth rates have declined across the BRICS countries after the financial crisis, falling to particularly low levels in Brazil, Russia and South Africa.

The share of gross fixed capital formation (GFCF) in GDP has increased substantially in the two Asian countries, China and India over the past half a century (Table 5). Furthermore, the share was increasing in all before the financial crisis. The share has remained high after the crisis, a higher level than in the years 2001-07.

Table 5: Share of gross fixed capital formation in GDP (%)

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15
Brazil	20.1	22.6	20.5	19.0	17.5	19.7	19.9
China	21.6	28.7	29.5	32.9	38.5	43.3	44.8
India	14.4	17.3	21.4	23.0	28.3	34.2	31.8
Russia			30.2	19.6	18.7	22.0	20.9
S, Africa	23.9	27.1	21.1	16.6	12.1	21.4	19.9

Source: http:// databank.worldbank.org/data/home/aspx

World Development Indicators, World Bank, Washington D.C.

Exports

XG&S as a share of GDP has increased over the past half century for all the BRICs, particularly China and India (Table 6).

Table 6: Share of XG&S in GDP

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15
Brazil	6.9	7.7	10.4	8.8	14.5	11.7	11.9
China	3.3	5.8	11.3	18.3	30.1	27.5	24.5
India	3.8	6.0	5.9	10.3	17.1	22.5	23.0
Russia			20.0	34.0	34.4	29.5	28.2
S. Africa	24.6	30.2	27.8	23.3	28.6	30.7	30.5

Source: http:// databank.worldbank.org/data/home/aspx
World Development Indicators, World Bank, Washington D.C.

However, there is considerable difference among the BRICS countries since the financial crisis of 2008-10. The share of XG&S in GDP fell considerably since the crisis in Brazil, China and Russia being about 20 per cent lower in 2011-15 compared to 2001-07. However, the share increased substantially in India. For South Africa also the share was somewhat higher after the crisis than before it.

Section 3: Manufacturing in the Developing World

a) Share of manufacturing in GDP

While the overall macroeconomic growth situation in developing countries may not generate undue anxiety, the sector composition of growth is worrying. 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 (Table 7). After increasing in the boom years of 2001-07 it has slid back and was lower in the period 2011-15 than in the period 1983-90.

As far as the middle income countries are concerned, the share had increased initially till the 1974-82 period. But since then it is declining and has fallen to 20.4 per cent from its peak of 27.1 (Table 7). The same phenomenon of initially increasing and then falling is observed in the different developing country regions.

Table 7: Share of Manufacturing (% of GDP)

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15
Low& Middle Income	24.0	27.0	25.6	23.5	22.2	21.4	20.3
Low Income			9.9	9.6	10.9	9.7	8.7
Middle Income	24.1	27.1	25.8	23.6	22.3	21.5	20.6
Lower Middle	13.4	15.2	16.5	17.6	17.5	17.5	16.6
Upper Middle	26.7	30.3	28.5	25.5	23.7	22.7	21.7
EAP	28.4	34.0	31.5	30.8	30.7	30.1	29.1
LAC	25.5	26.7	27.1	19.1	17.3	16.0	14.5
MNA		12.1	13.7	15.9	14.6	13.7	13.7
SA	13.3	15.5	15.8	15.6	15.6	17.3	16.4
SSA		14.9	14.1	12.2	11.3	10.1	10.5

Source: http:// databank.worldbank.org/data/home/aspx
World Development Indicators, World Bank, Washington D.C.

The exact timing of the reversal from an increasing share to decreasing share varies between the regions. In EAP and SSA it started decreasing after the period 1974-82 whereas in LAC the 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 SSA whereas in EAP it is almost constant and in SA there is an overall increase though with fluctuations.

b) Exports of manufacturing

Value of exports as a share of GDP has been increasing in developing country regions in contrast to what has been happening in the world. It must be remembered that exports are gross value of exports, whereas GDP is value added. Phenomenon such as outsourcing would affect this ratio. If the production of some components used in goods exported is outsourced then while the value of exports would not be affected domestic VA would decline so that the ratio would rise.

Table 8: Value of Exports of Manufactures as a Share of Value Added in Manufacturing

	1991-2000	2001-07	2008-10	2011-15
World	83.0	56.5	46.1	42.2
EAP	60.8	82.3	79.3	75.5
LAC	34.4	63.2	56.4	64.9
SA	46.7	59.7	58.6	66.0
SSA	48.7	68.1	78.8	63.2

Source: http:// databank.worldbank.org/data/home/aspx
World Development Indicators, World Bank, Washington D.C.

The share of value of exports to VA falling for the world could mean that the share of value added in total value of output has been rising, namely the share of raw materials in value of output has been declining. This has been happening as exports are less agro based or based on minerals. The trend in developing regions would imply that share of inputs in value of output is rising either because more expensive raw materials are being used or more imported inputs are being used.

c) Employment in manufacturing

The World Bank development indicators provide employment in industry but not in manufacturing. According to this data, the share of employment in industry more than doubled in developing countries from 18.7 per cent of total employment in 1991-2000 to 41.2 per cent in 2011-14. The share in LAC remained constant at about 22 per cent. In South Asia, on the other hand, industry's share in employment increased from 15.7 per cent in 1991-2000 to 24.8 per cent in 2011-14, an increase of more than 50 per cent. This change bears out the belief among policy makers that growth of the manufacturing/industrial sector is important to generate jobs.

Section 4: The Manufacturing Sector in BRICS

a) Share of manufacturing in GDP

The BRICS countries exhibit a pattern similar to that of their regions (Table 9). The share of manufacturing in GDP was 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 it 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. However, overall the share has increased particularly since the financial crisis.

Table 9: Share of Manufacturing in GDP (%) for BRICS Countries

	1965-73	1974-82	1983-90	1991-2000	2001-07	2008-10	2011-15
Brazil	28.3	31.5	32.3	19.3	18.4	18.6	12.4
China	31.7	38.1	34.3	32.6	32.0	31.7	31.0
India	13.7	16.0	16.0	15.7	15.7	17.8	16.7
Russia					17.4	15.7	13.6
S. Africa	22.2	22.2	22.8	20.6	18.1	15.1	13.3

Source: http:// databank.worldbank.org/data/home/aspx
World Development Indicators, World Bank, Washington D.C.

b) Exports of manufactures

We now analyse the share of production of manufactures that is exported. Of course, it must be remembered that exports are in terms of gross output and value of output is in terms of value-added. So the ratio of exports to value added would be affected by changing technology that raises the use of inputs. This is in contrast to the ratio for the world as a whole which has been declining

Outsourcing would reduce the share of value added as the value added in an imported input would count as value added in the country of production and in the country of use it would be included in input use and so reduce value added.[4] So we would expect the increasing splintering of production should reduce share of value added and increase the ratio

exports to value added. But obviously this would not operate for the world as a whole. So it is difficult to separate out how much of increase in this ratio in Table 10 is due to splintering and how much is because of increased exports as such.

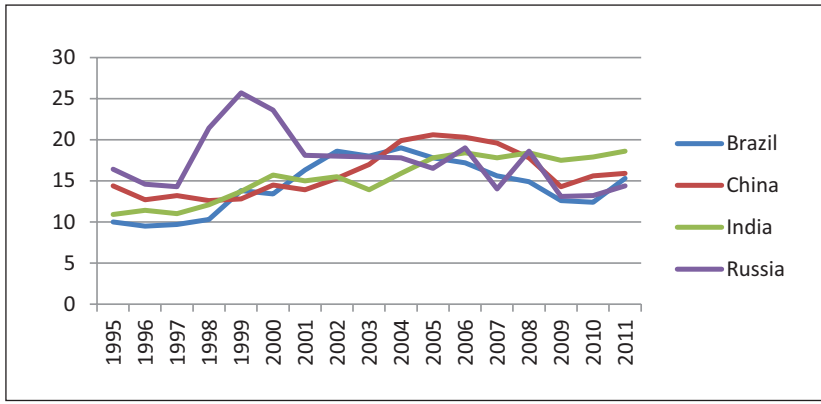
Table 10: Exports of Manufactures as Share of VA in Manufactures (%)

	1991-2000	2001-07	2008-10	2011-15
EAP	60.8	83.3	79.3	75.5
LAC	34.4	59.7	56.4	64.9
SA	48.7	59.7	58.6	66.0
SSA	46.7	68.0	78.8	63.2
World	83.0	56.5	46.1	42.2
Brazil	24.7	46.1	30.6	33.7
China	34.1	66.7	74.2	70.8
India	41.3	54.8	55.7	66.7
Russia			30.7	34.9
S. Africa	52.7	68.0	78.8	104.4

Source: Author's calculations from data in the World Bank World Development Indicators.

The point whether more of the output is actually being exported is shown by using the World input output data set. This shows that the share of gross output exported by three of the BRICS countries increased between 1995-2011, while that for Russia was constant.[5] The share of the manufacturing sector that has been exported initially increased for all the countries. But then it started declining. For Russia the peak occurred very early in 1999 and it has been declining from that peak though it increased in 2011 (Figure 1). Furthermore, for two more of the BRICS countries the share has decreased since the peak. The peak export share for China was in 2005 and for Brazil in 2004.[6]

Figure 1 Share of Manufactures Exported, 1995-2011



Source: Author's calculations from the WIOD data base.

For India the share has increased over the period 1995 to 2011 period though with some fluctuations. Among the four countries India is exporting the highest share of its manufacturing output in 2011. Brazil which exported the lowest share of its output in 1995 had become the country exporting the largest share of its output in 2002. However, by the end of the period in 2010 it was again the country that was exporting the smallest share of its manufacturing output. In 2011 it exported a marginally higher share than Russia. Brazil, China and Russia were all exporting about 15 per cent of the gross output of manufactures.

c) Employment in BRICS

In the case of Brazil, India and South Africa, the World Bank data set reveals there is a tendency for employment in industry to grow slowly. But in China there was big leap in the share of industry in employment between 1991-2000 and 2008-10. Even in the period 2011-14 there was a substantial increase in industry's share in employment, more than in the other countries. In Russia the share has been steadily decreasing; however in the case of South Africa the share is stagnant (Table 11).

Table 11: BRICS: Share of Employment in Industry

	1991-2000	2001-07	2008-10	2011-14
Brazil	20.2	21.2	22.9	22.4
China	19.5	35.9	44.1	46.3
India	15.8	19.0	22.4	24.8
Russia	33.5	29.6	28.0	27.6
S. Africa	23.7	25.4	25.2	23.8

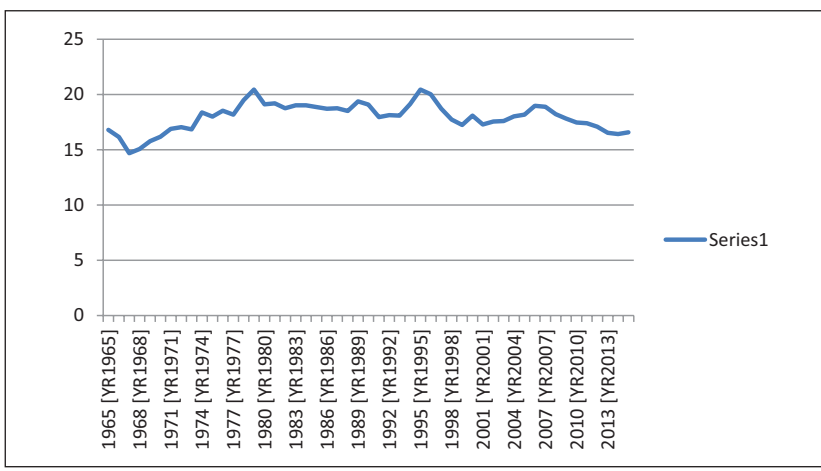
Source: http:// databank.worldbank.org/data/home/aspx

World Development Indicators, World Bank, Washington D.C.

Section 5: The Manufacturing Sector in India

Assessing the performance of India's manufacturing sector is difficult because it depends on the perspective from which it is viewed. The sector has a relatively small share of GDP and it has remained at this level since the mid eighties with minor variations. Furthermore, the share has been relatively stagnant over the past four decades or more. The share in 2015 at 16.6 per cent is almost the same as in 1965, 16.8 per cent (Figure 2).

Figure 2: India Share of Manufacturing in GDP



Source: Reserve Bank of India Handbook of Statistics on Indian Economy.

https://www.rbi.org.in/Scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy

The government seeks to raise this share. It is believed that a larger contribution from the manufacturing sector will increase the number of jobs. Providing employment for the new entrants to the labour market as also those who are currently unemployed is considered imperative.

The share of manufacturing after declining in the mid-1960s because of the slowdown in the economy caused by droughts and the cutback of aid arose steadily from 14.7 per cent in 1967 reaching 20.4 per cent in 1979, the highest level it has ever reached. The share then declined continuously till 2001 when it was 17.3 per cent. There were then five years of increase and the share reached 19 per cent in 2006. But then it resumed its fall.

The share of manufacturing in GDP is much lower in India than in many East and South-East Asian countries. In the past it has also been lower than in Latin American countries such as Brazil and Mexico. But here also it must be remembered that the share of manufacturing in GDP has been less than 10 per cent in low income countries which India was till recently. India is a low middle income country now and the average share of manufacturing in GDP for the period 2011-15 was 16.6 per cent almost the same as India's share. The share in upper middle income countries is still higher than in India but it has declined from its peak of 20.3 per cent of GDP in 1974-82 to 21.7 per cent during 2011-15. The share in EAP has declined from 34 per cent during 1974-82 to 20.3 per cent in 2011-15. In Latin America it has declined from 26.7 per cent to 14.5 per cent during this period.

Among the BRICS countries India's share is higher than in Brazil, Russia and South Africa whereas earlier it used to be lower. The share has been declining for a considerable period in many of the BRICS countries. The peak share for China was 40.1 per cent reached in 1978, for South Africa it was 24.1 per cent reached in 1981 and for Brazil it was 34.6 per cent reached in 1982. The peak share for Russia was 18.3 per cent reached in 2005; but data for the period before 2002 is not available in the World Bank Indicators, but obviously the share was much higher before the collapse of communism.

A successful feature of India's manufacturing sector has been its export performance. The share of the output exported has been increasing while that for three of the other BRICS countries has been decreasing so that by 2011 India was exporting a larger share of its output than these other countries.

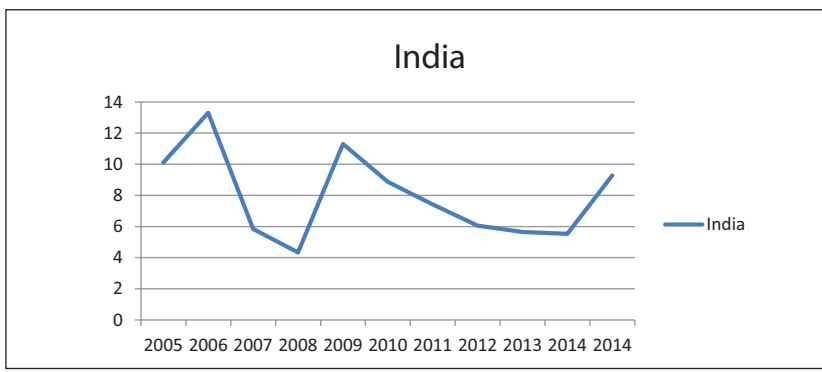
Employment in manufacturing in India grew at 1.8 per cent per year between 1995 and 2011; the same rate as in Brazil but about half that in China where it increased by 3.6 per cent a year. However, value added grew during this period by 7.3 per cent annually in India and a much lower 2.2 per cent a year in Brazil.[7] As a consequence, worker productivity grew by 4.5 per cent a year in India while it fell by 0.5 a year in Brazil. However, labour productivity grew slower in India than in China and Russia (Agarwal and Chakravarty, 2017).

Section 6: The Behaviour of the 300 Largest Firms in India

A) Growth rate of manufacturing

The growth rate of value added manufacturing in India has usually shown a downward trend from 2006 to 2008 and from 2009 to 2014 (Figure 3).

Figure 3: Manufacturing Annual Growth rate, 2005-2015



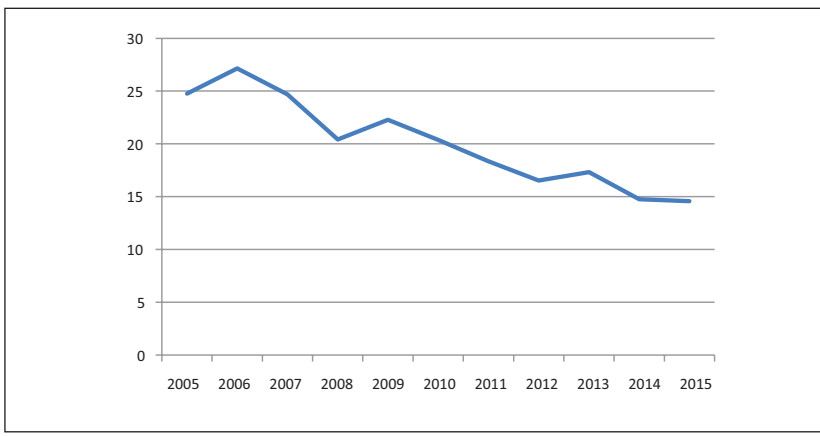
Source: Drawn from data in World Bank Development Indicators.

B) Rate of return on net worth

Within this overall growth rate of the manufacturing sector we look at the performance of the top 300 companies data on which we extracted from Prowess. We then dropped the firms in the non-manufacturing sectors such as services, banking etc. We also did not take firms for which data was available only for a few years in the sample. As a result we had a sample of 177 firms which were divided into 11 sectors. We calculated the simple annual unweighted average of the return on net worth (RNW) for these firms for each year in the period 2005-15. The RNW shows a distinct downward trend during the period 2005-15 (Figure 4). The role of the declining rate of profit is that we are seeking to explain declining investments by large firms. While profit rates all over the world fell immediately after the 2008 recession there is no long term trend for falling rate of profit.

In fact profits have been increasing, while real wages have been stagnating and the share of profits has gone up.

Figure 4: Rate of return on Net Worth, 2005-2015



Source: Author's calculations from data extracted from Prowess.

For most of the sectors such as textiles, power generation, metals, industrial equipment and consumer goods there is a steady fall in the rate

of return on net worth (RNW), except for some such as power generation and consumer goods there is an increase in 2015. For the chemicals sector RNW is almost constant during this period. Only for the automobile sector is the RNW for 2015 higher than that for 2005.

Table 12: RNW for Indian Firms by Sector and Year

	2005	2007	2009	2011	2013	2015	ave 2005-15
Automobiles	21.8	21.7	27.2	20.2	21.1	24.7	21.5
Chemicals	22.8	19.1	24.8	21.0	21.3	21.1	21.0
Construction	29.2	32.4	19.1	10.3	7.4	5.6	17.9
Consumer goods	41.6	49.2	45.5	38.0	27.3	31.2	39.7
Gas and Fuels	23.6	29.6	35.6	36.3	26.5	32.3	30.4
Machinery	23.2	23.0	17.9	16.7	11.3	7.9	11.5
Metals	29.8	26.1	15.3	16.1	14.9	10.7	18.8
Oil	15.2	17.8	13.7	10.9	12.3	13.0	12.9
Pharmaceuticals	24.5	20.0	22.6	18.1	25.6	15.1	21.1
Power Generation	9.8	14.0	10.9	8.1	8.6	9.1	9.4\
Textiles	27.5	17.2	15.6	17.3	16.6	-4.7	14.5

Source: Author's calculations from data extracted from Prowess.

B.i) Growth of sales and profit margins

The question arises whether the fall in the profit rate is because of demand or supply factors. We add the nominal sales of all the firms for each year and deflate with the index of prices for manufactured goods from the RBI to get real sales. We then calculate the growth rate of these real sales. We see that the growth of real sales has been declining in most years.

The margins, namely profits over sales, which had been rising before the financial crisis fell sharply between 2011 and 2014 before recovering in 2015 (Table 13).

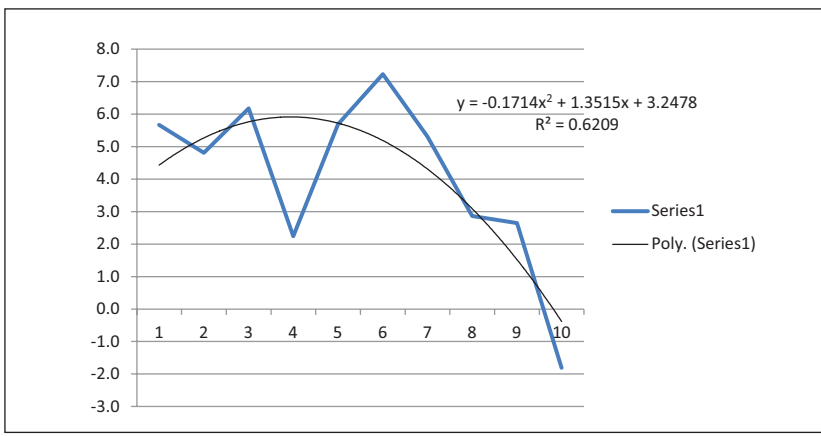
Table 13: profit Margins (Profits*100/Sales)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	8.3	8.8	9.2	7.3	8.8	8.7	7.0	7.1	6.8	6.3	8.1

Source: Author's calculations from data extracted from Prowess.

We next look at the increase in the capital stock of these companies. We took a subset of 111 industrial companies which were among the largest 200 companies and these were divided into three groups. The first group was of companies whose increase in capital stock between December 2005 and December 2014 was less than the increase in the deflator for gross fixed capital formation. Broadly speaking these would be the companies whose real capital stock declined during this period. Real GDP had had just more than doubled during this period. The second group of companies was that where the increase in the nominal value of the capital stock was less than the product of the rate of inflation of GFCF and of the real growth of GDP. These companies would be those whose importance relative to GDP declined during this period. The third group of companies was that whose capital stock increased faster than the product of real GDP growth and the deflator for GFCF. We found that of the total of 111 companies 62 were in the first group, namely whose real capital stock seems to have declined during this period, 31 companies were in the second group. Only 18 companies, about 16 per cent of the total number of companies were in the fast growing third group.

Figure 5: Growth of total sales of large firms



Source: Author's calculations from data extracted from Prowess.

In brief, most of the biggest companies were growing very slowly. They were growing very slowly as the rate of return on capital was declining.

The lack of profitable investments in recent years is also suggested by the increase in dividend payouts and investments in short term assets. Dividend payouts initially declined falling to a low of 26.2 per cent of profits after tax. They then started increasing and were 50 per cent of profits after tax in 2015. Similarly, short run investments were negligible till 2010 and since then every year they have been more than 50 per cent, reaching a peak of 84 per cent in 2014.

In the literature investment is influenced not by the rate of interest but more by Tobin's q which is the ratio of a firm's market capitalisation to the replacement cost of its capital stock. We see that this ratio has been increasing for most of this period except for the sharp drop in 2009 in the wake of the financial crisis (Table 14).

Table 14: Market capitalisation/replacement cost of equipment

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	1.6	3.5	2.8	3.1	1.7	3.1	3.6	3.3	2.9	3.0	4.2

Source: Author's calculations from data extracted from Prowess.

This increase in q occurred in all the sectors except oil, power, gases and industrial equipment.

Despite this increase in Tobin's q investment has not been occurring. One possible reason could be the worsening debt equity ratio. The debt equity ratio increased four times between 2005 and 2014 before falling sharply in 2015 (Table 15).

Table 15: Debt equity Ratio

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	3.1	2.6	1.6	4.8	3.7	3.3	5.0	4.9	4.9	13.2	7.7

Source: Author's calculations from data extracted from Prowess.

This rising debt equity ratio might have deterred investments as it made the companies vulnerable to shocks.

B.ii) Declining margins and concentration ratios

The declining margins and the falling rate of growth of sales suggests that there was a demand constraint and lowering prices did not entirely solve the problem of the demand constraint. The declining margins could also be due to changes in the extent of concentration in each sector.

Table 16: Concentration ratios Margins RNW

	Concentration ratio		Margin on sales		RNW	
Sector	2005	2015	2005	2015	2005	2015
Textiles	0.3	0.19	9.3	-2.7	27.5	-4.7
Oil	0.22	0.22	5.8	5.7	15.2	13.0
Power	0.3	0.2	18.2	16.2	9.8	9.1
Pharmaceuticals	0.05	0.05	13.0	12.2	24.5	15.1
Metals and minerals	0.48	0.23	19.1	79.0	29.8	10.7
Gases and Fuels	0.53	0.45	13.2	5.2	23.6	32.3
Machinery	0.14	0.16	9.9	5.2	23.2	7.9
Construction and materials	0.11	0.10	12.5	3.5	29.2	5.6
Consumer goods	0.20	0.15	11.2	11.7	41.6	31.2
Chemicals	0.14	0.14	8.4	10.7	22.8	21.1
Automobiles and parts	0.14	0.10	6.9	7.0	21.8	24.7

Source: Author's calculations from data extracted from Prowess.

The concentration ratio has been going down (Table 16).[8] It fell in seven of the sectors and increased in only one sector. There was no relation between the extent of concentration and the RNW. Nor was there a strong correlation between the concentration ratio and the sales margin, except that it was .5 in 2005. But the correlation between the change in the concentration ratio and the change in the sales margin was -0.74. The more concentrated sectors had a higher sales margin, a result which one would expect as the margin between price and cost is often taken to reflect monopoly power. But the correlation between change in concentration ratio and change in RNW is insignificant being only 0.22. This suggests that the more concentrated sectors also tend to be more

capital intensive.

We now look at the cost side of production. Costs of salaries, interest and raw materials increased by 41.5 per cent. While labour costs increased by 40 per cent, raw material costs increased by less than 4 per cent and interest costs increased by almost 150 per cent. The value of fixed assets increased on an average by 362 per cent over 2005-15 and labour by only 63 per cent. This suggests an increasing K/L ratio and one would expect wages to rise and wages did rise by over 150 per cent. But this is nominal terms. The CPI for industrial workers increased by 115 per cent. So real wages increased by only about 30 per cent in 10 years.

In brief, what we have is that the manufacturing sector was faced by rising costs and on the other by stagnant demand which presented them from raising prices. Consequently returns fell. Also more of profits were being distributed as dividends and there was an increase in short term investments.

Growth in employment in the 11 sectors is strongly negatively correlated to growth in wages in these sectors. It is weakly positively related to growth in sales. But its relationship with sales shows diminishing returns as growth in sales per employee is negatively related to growth in sales. Profits are negatively correlated to both wages and employment. Surprisingly, perhaps, growth of profits is negatively related to growth in sales suggesting the demand constraint and that increased sales depend on lower prices.

Conclusions

The slow rate of growth of manufacturing value added in India and stagnation in its share of GDP have raised concerns. But these trends are in line with what has been happening to the manufacturing sector in developing countries generally. The share of the sector in GDP has declined sharply in the other BRICS countries, except China.

Still the performance of the manufacturing sector has been seen

to be inadequate from the viewpoint of policy makers. The informal sector is very important for manufacturing production in India. But very often dynamism particularly the exploitation of economies of scale and technological upgradation depends on the performance of large companies. The problem with the performance of large companies has been very slow increase of the capital stock of large companies, in most cases not even maintaining a constant real capital stock. The poor investment performance also brought out by aggregate figures on corporate investment seems to be due to a declining return on net worth .

This decline is due to both demand and supply factors. The rate of growth of sales has been declining suggesting weak demand. Furthermore, profit margins have been eroded. This could be because of the weak demand or also increased competition as the concentration ratio among these large firms has declined. On the supply side the interest costs and wage costs have increased substantially. Industry circles have been complaining of high rates of interest in India. But part of the increase in interest costs is the sharp increase in the debt equity ratio. This increase may explain the slow growth in capital investment despite a rising Tobin's q ratio. The rise in labour costs has been mainly because of higher wages. Despite the lack of investment, there has been capital deepening. But it is not clear what the direction of causation is between higher capital output ratios and higher wages.

Endnotes

[1] The word "despite" is used deliberately. It is often thought that the fortunes of developing countries are tied to the performance in developed countries. The latter provide markets for exports of developing countries considered to be an important ingredient for rapid growth in developing countries.

[2] The causes for the slowdown are complex. An analysis of Sub-Saharan countries categorised by export specialisation, i.e., agriculture exporters, agricultural raw material exporters ore exporters, fuel exporters and manufactures exporters, shows that growth for most kinds of exporters declined. Also the pattern for countries in SSA is similar to pattern for Latin American countries categorised by export orientation. See Agarwal Manmohan and Amrita Brahmo (2018). The Economic Situation of countries in Sub Saharan countries: what can be done by the G-20 forthcoming in Manmohan Agarwal and John Whalley The G 20 and

Developing Countries, World Scientific, Singapore. page 15 Fig 4 is for different period. Since it is for growth rates the first year is lost.

[3] Growth rates in these countries are lower than those in middle income countries, both lower and upper, and in low income countries.

[4] The use of imported inputs has been increasing in all these four countries (Agarwal and Chakravarty, 2017)

[5] The data set is only available for this period and for only four of the five BRICS members, and not for South Africa.

[6] The behaviour of China is very different in the WIOD data than in the World Bank data because of the difference in what is calculated. The WIOD data shows that the share of manufacturing gross output exported decline since 2005. The World Bank data shows share of manufacturing exports to manufacturing value added continued to grow. This can only imply that share of value added in gross output has been declining because of outsourcing.

[7] Calculated from data available in the World Bank's Development Indicators.

[8] More competition should be leading to greater efficiency. But greater efficiency should led to higher profits or wages. But neither seems to be happening.

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