Growth, Imports and Inequality

Explaining the Persistently High Trade Deficit in India

ZICO DASGUPTA, SUBHANIL CHOWDHURY

One of the striking features of the Indian economy in recent years has been a sharp rise in the share of the trade deficit in the gross domestic product. While the period of high GDP growth was characterised by an even faster widening of the trade deficit, the subsequent slowdown has not reduced the deficit proportionately. The widening of the trade deficit in GDP has been primarily due to a similar rise in the import–GDP ratio. One of the main reasons for the rise in the import–GDP ratio, and the persistence of a high trade deficit is rising inequality in the economy.

Non-incriminating thanks are due to Jayati Ghosh, Sunanda Sen and Surajit Das who gave valuable comments on an earlier draft of this paper. We also thank an anonymous referee whose detailed comments on an earlier draft helped us in improving the paper.

Zico Dasgupta (*zico.dasgupta@gmail.com*) is a research scholar at the Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Delhi; Subhanil Chowdhury (*subhanilc@gmail.com*) is with the Institute of Development Studies Kolkata.

There are at least two features of the contemporary Indian economy which merit attention. First, while there was a very high growth of gross domestic product (GDP) between 2002–03 and 2007–08, the subsequent period has seen a decline in the growth rate. Second, there seems to be an asymmetric relationship between the GDP growth rate and the trade deficit. The sharp rise in the GDP growth rate from 2002–03 to 2007–08 was associated with a rise in the share of trade deficit in GDP, leading to a similar rise in the current account deficit (Chandrasekhar and Ghosh 2013). However, while the growth rate tapered off after 2007–08, particularly from 2011–12 onwards, the share of the trade deficit in GDP did not fall (Figure 1, p 66). This asymmetric relationship between the growth rate of GDP and the trade deficit has not received sufficient attention in contemporary discussions on the Indian economy. This paper is an attempt to provide an explanation of this phenomenon. In the course of doing so, it also looks at the mechanism through which the trade deficit in India has increased.

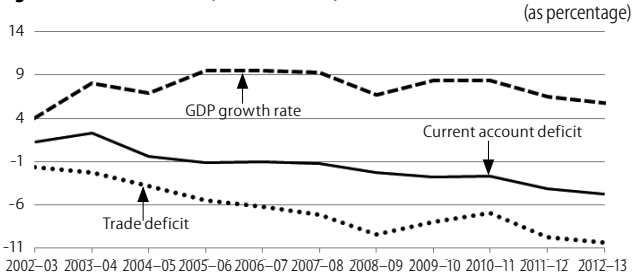
It can be argued that Figure 1 gives us an incomplete picture since it does not capture the services sector, whose trade account is actually in surplus. Therefore, Figure 2 (p 66) presents both the merchandise trade and service sector trade to give a complete picture regarding the current account deficit in India.

From Figure 2, it is evident that the service trade balance did improve from 2002–03 onwards. In sharp contrast to this, the merchandise trade balance deteriorated substantially during this period, so much so that the overall trade balance turned negative. Moreover, it can be noted that the difference between the trend in merchandise balance and that in service balance was primarily due to different trends in their import components. As far as exports are concerned, both exports of goods and services increased substantially during this period. As evident from Figure 2, the rise in export of goods has been faster from 2009–10 onwards. However, it has been the sharper rise in the import of goods that has led to the deterioration of the merchandise trade balance, and accordingly the overall trade balance.

It is this phenomenon of a sharp rise in the import of goods (and a sharp deterioration in the merchandise trade balance) that we attempt to analyse in this paper to explain the sharp fall in the overall trade balance.

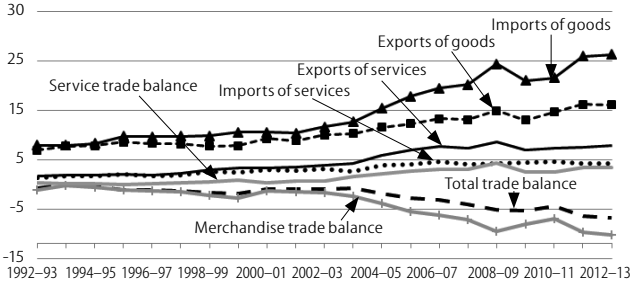
This fast rise in the import–GDP ratio compared to the export–GDP ratio raises two questions. First, the rise in the import–GDP ratio signifies that even during the period when GDP growth was rising (2002–03 to 2007–08), the rate of

Figure 1: GDP Growth Rate, Trade Balance, and Current Account Balance in GDP
(as percentage)



Source: *Handbook of Statistics on Indian Economy*, RBI and National Account Statistics, CSO, various years.

Figure 2: Share of Exports, Imports and Trade Balance as Share of GDP (%)



Source: Calculated from *Handbook of Statistics of Indian Economy*, RBI, various years.

growth of imports was higher than that of the GDP. Second, the increase in the import–GDP ratio despite a decline in the GDP growth rate after 2009–10 requires adequate explanation.

To look at the rising import–GDP ratio from a different perspective, Table 1 provides figures related to the average growth rate of GDP (at constant prices) and the average growth rate of the quantum index of imports. It is seen that in each year since 2002–03, the growth rate of GDP (at constant prices) has been lower than the growth rate of the quantum index of imports, except in 2010–11 and 2011–12. This shows that even in real terms, import demand has increased at a faster rate than GDP during this period. This indicates a rise in the import propensity of the economy.

Table 1: Growth Rate of GDP and Quantum Index of Imports
(as percentages)

	Quantum Index of Imports	GDP (at Constant Prices)
2002–03	5.8	3.9
2003–04	17.4	7.9
2004–05	17.2	7.8
2005–06	16.0	9.3
2006–07	9.8	9.3
2007–08	14.1	9.8
2008–09	20.2	3.9
2009–10	9.9	8.5
2010–11	8.0	10.5
2011–12	-20.9	6.3
2012–13	6.1	3.2
Average	9.4	7.3

Source: *RBI Handbook of Statistics*.

One of the primary reasons for the rise in import propensity has evidently been the various government policies liberalising trade, as indicated by Chaudhuri (2013). However, this does not say the full story. As Figure 2 shows, the import–GDP ratio began rising significantly from 2002–03 onwards and not from when policies of liberalisation were undertaken. Therefore, one needs to look at the other factors driving the import–GDP ratio, particularly after 2002–03, against the backdrop of existing government policies.

The import demand of any country, at least analytically, can be broadly divided into two parts. The first comprises the import content of exports. With the emergence of global production networks, the exports can be divided into the domestic value added and the foreign value added (FVA). The share of the FVA in exports would be an indicator of the import content of exports for any country.

The Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) database on Trade in Value-Added (TIVA) estimates the share of FVA in gross exports by using the bilateral trade statistics and input–output figures of various countries.[1] It indicates a sharp rise in the share of FVA in India's exports in the recent period (see row 1 and row 2, Table 2). Further, it suggests that this rise in the FVA in exports has been associated with a rise in the ratio between the FVA in merchandise exports and GDP during this period (see row 3, Table 2). Such a rise in the share of FVA in merchandise exports and GDP, with all other things the same, will obviously increase the level of imports for any given level of GDP and exports.[2]

The second part of import demand, however, is constituted by the demands of the domestic economy. Even if one excludes the share of FVA in merchandise exports, the share of merchandise imports (net of FVA) in GDP has increased in India (see row 5, Table 2). In other words, the import–GDP ratio would have increased in the given period even if the rise in the import content of exports is excluded.

Table 2: Share of Foreign Value Added in Exports and Imports (as percentage)

	1995	2000	2005	2008
(1) FVA/Exports*	9.7	12.8	19.5	23.7
(2) FVA in merchandise exports/ total merchandise exports	10.4	14.4	23.0	29.1
(3) FVA in merchandise exports/GDP	0.9	1.3	2.8	4.4
(4) Total merchandise imports/GDP	8.3	7.4	13.0	20.6
(5) Merchandise imports, net of FVA/GDP (4–3)	7.4	6.2	10.2	16.2

* Also includes the service sector; "merchandise exports" comprise industry codes 01-37 in ISIC Rev3.

Source: TIVA database, OECD–WTO, 2013 for FVA and Exports. GDP figures for respective years are from World Databank, World Bank, various years.

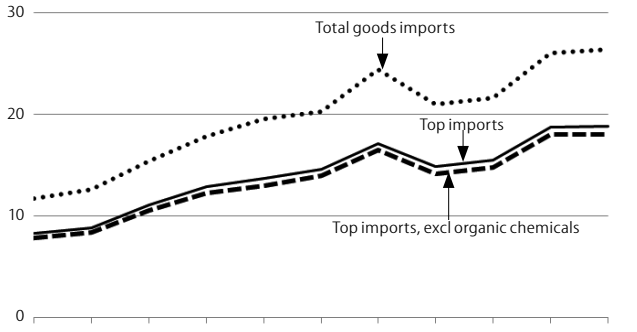
We attempt to analyse the rising trend in the import–GDP ratio by focusing on the second component of import demand, namely, the import demand in the domestic economy. We first look at the trend in the import–GDP ratio in the recent period by pointing out the change in the pattern of demand in the domestic economy. We then explain such a change against the backdrop of India's growth process.

Commodity Composition of Imports

To understand what is behind the rise in the import–GDP ratio, we analyse the commodity composition of imports between 2002–03 and 2012–13 (Table 3, p 67).

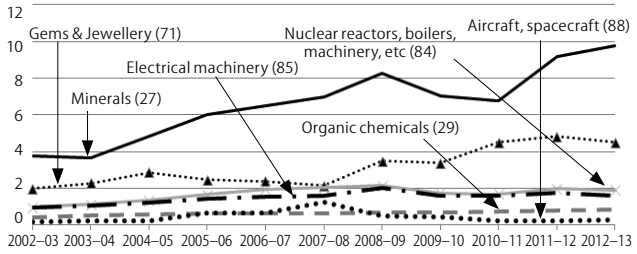
From Table 3, it is seen that during the period under discussion, six groups of commodities—minerals; gems and jewellery; nuclear reactors, boilers, machinery; electrical machinery; organic chemicals; and aircraft, spacecraft, etc (only in 2007–08)—constituted the top five imports for India. These commodities together constitute around 70% of total imports. Additionally, Figure 3 (p 67) shows that the import–GDP share of these commodities has steadily increased from less than 10% in 2002–03 to close to 20% in 2012–13. In other words, these five sets of commodities are most important in explaining the

Figure 3: Imports as Shares of GDP (as percentages)



Source: Export Import data bank, Ministry of Commerce, various years.

Figure 4: Top Five Imports as Share of GDP (as percentages)



Source: Export Import data bank, Ministry of Commerce, various years.

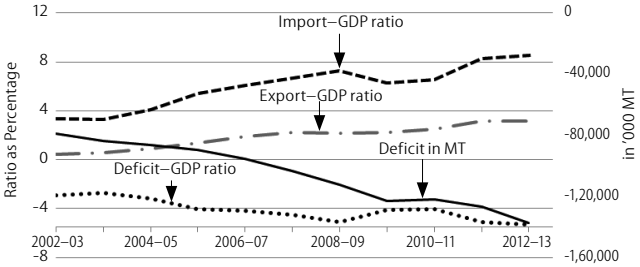
movement in the import–GDP ratio of India. As far as individual groups of commodities are concerned, Figure 4 shows that there has been a steady increase in the import–GDP ratio for minerals (HS Code 27). The import–GDP ratio for gems and jewellery (HS Code 71) was more or less stagnant between 2002–03 and 2007–08 and then increased sharply. The import–GDP ratio for commodities with HS Code 84, 85 and 88 increased between 2002–03 and 2007–08 and then declined, while that of organic chemicals (HS Code 29) remained more or less stagnant between 2002–03 and 2012–13.

The commodity composition of imports itself does not give us an idea about the demand side of imports. We adopt a demand-side framework to explain the trend in import–GDP ratio. This, in turn, requires various commodities to be classified under broad heads in terms of their end use (as raw materials, capital goods, and so on). Therefore, we provide the uses to which the commodities were put, based on the United Nations Conference on Trade and Development (UNCTAD) Stages of Processing data.

Let us first analyse the commodity group minerals (HS Code 27) (Table 4). It is seen that minerals mainly constitute crude oil, which enters the production process as a raw material. Since crude oil is the most important commodity imported in this group, we discuss its import in detail.

Petroleum: Both the share of exports and imports of petroleum in GDP increased from 2002–03 to 2012–13 (Figure 5). However, that the deficit–GDP ratio in the petroleum sector has increased over the years (Figure 10, p 70) indicates that imports have increased faster than both petroleum exports and GDP during the relevant period. It is this rise in imports vis-à-vis exports and GDP that we examine here.

Figure 5: Share of Total Petroleum Imports, Petroleum Exports, and Deficit in GDP (as percentages) **and Petroleum Deficit** (million tonnes)



Source: CSO and Petroleum Planning and Analysis Cell (PPAC), Ministry of Petroleum and Natural Gas, various years.

One of the primary reasons why the import value of petroleum has increased has been the exogenous rise in the prices of crude oil during this period.[3] Further, the recent fall in the value of the rupee vis-à-vis the US dollar would have also added to the cost of such imports in terms of the domestic currency. However, what is worth noting is that during the entire period, the growth rate of petroleum imports in volume terms has been greater than the growth rate of GDP at constant prices (Table 5). Similarly, the deficit in the petroleum sector in volume terms increased from 7,89,28,000 metric tonnes (MT) in 2002–03 to 10,33,55,000 MT in 2007–08, and further to 13,71,61,000 MT in 2012–13 (Figure 5). Thus, both the share of deficit and import demand of petroleum in GDP would have increased in the given period even if the prices had remained unchanged. It is this phenomenon of rise in the real import demand of petroleum which we attempt to explain below.

Table 3: Shares of Top Five Imports in Total Imports, 2002–03, 2007–08 and 2012–13

2002–03		2007–08		2012–13	
Top Five Imports	Import Share as %	Top Five Imports	Import Share as %	Top Five Imports	Import Share as %
(1) Minerals (27)	32.0	Minerals (27)	34.3	Minerals (27)	36.9
(2) Gems and jewellery (71)	17.1	Gems and jewellery (71)	10.5	Gems and jewellery (71)	17.1
(3) Nuclear reactors, boilers, machinery, etc (84)	8.4	Nuclear reactors, boilers, machinery, etc (84)	10.1	Nuclear reactors, boilers, machinery, etc (84)	7.2
(4) Electrical machinery (85)	8.3	Electrical machinery (85)	8.0	Electrical machinery (85)	6.1
(5) Organic chemicals (29)	3.6	Aircraft, spacecraft, etc (88)	5.3	Organic chemicals (29)	3.2
Total for top five	69.4	Total for top five	68.2	Total for top five	70.5

Figures in parenthesis indicate the HS Code at 2-digit level for the commodities.
Source: Export Import data bank, Ministry of Commerce, various years.

Table 4: Composition of Minerals (HS Code 27)

	2002–03	2012–13
(1) Items as raw materials (1a +1b)	86.9	88.5
(1a) Crude oil (270900)	81.6	79.7
(1b) Other items of 27 as raw materials	5.3	8.8
(2) Items as intermediate goods	3.6	1.5
(3) Items as consumer goods	9.6	10.0
(1+2+3) All items under minerals (27)	100.0	100.0

Source: Export Import data bank, Ministry of Commerce, various years. The concordance between HS and UNCTAD SOP is based on World Integrated Trade Solution (WITS) concordance table, http://wits.worldbank.org/referencedata.html.

Table 5: Average Growth Rate of GDP and Import of Petroleum (percentages)

	2002–03 to 2007–08	2008–09 to 2012–13	2002–03 to 2012–13
GDP (growth of GDP in constant prices)	8.0	6.5	7.3
Petroleum import (growth of volumes)	9.1	6.9	8.1

Source: PPAC, Ministry of Petroleum and Natural Gas, various years.

The import of petroleum comprises petroleum products and crude oil. While the import demand of petroleum products would cater to its final demand, the bulk of the demand for crude oil is driven by its input demand (Table 6). However, the input demand for crude oil is essentially generated by the production of the petroleum products. This is reflected in Table 7, where the input demand for the production of per unit of output is highest for petroleum products, and it constitutes as much as 95.14% of the total input demand for crude oil. Thus, the demand for crude oil is itself derived from the demand for petroleum products. Accordingly, we analyse the sources of demand for petroleum products to explain the trend in its import demand.

Table 6: Percentage Distribution of Demand for Crude Petroleum, 2007–08

Components of Demand	Percentage
Consumption	0.00
Investment	0.00
Export	1.42
Input demand	98.59
Change in stocks	−0.01
Total	100.00

Source: Calculated from Input-Output Matrix (6), CSO, 2007–08.

Table 7: Input–Output Coefficient Matrix for Crude Oil, 2007–08

Output	Input Demand of Crude Petroleum Per Unit of Output	Share in Input Demand (in %)
Petroleum products	0.68	95.14
Coal tar products	0.02	1.23
Other commodities	0.00	4.63

The input demand per unit of output in other commodities is the approximated figure till two decibel points.
Source: Calculated from Input–Output Matrix (6) and (3), CSO, 2007–08.

One of the primary sources of import demand of crude oil, and hence the total import demand of petroleum, evidently would be its exports since crude oil is used as input in producing petroleum products. As discussed earlier, the share of exports of petroleum products in GDP has distinctly increased in the given period. Such a rise in the export demand of petroleum products, with other things being the same, would lead to a rise in the import demand for crude oil, and, hence, the total import demand of petroleum.

However, as reflected by the rise in deficit in the petroleum sector both in value and volume terms, the rise in petroleum imports has been greater than that in petroleum exports. Such a rise in import demand leads one to explore other sources of demand for petroleum—its consumption demand. We analyse the domestic consumption pattern of petroleum products.

Among various petroleum products, as seen in Table 6, the share of consumption of liquefied petroleum gas (LPG), high speed diesel (HSD), petrol, aviation turbine fuel (ATF), and petroleum coke in total consumption of petroleum products has increased. While HSD and petrol are primarily used in vehicles, ATF is used as fuel for aircraft. Similarly, while LPG is used as a household cooking fuel, refrigerant, and vehicle fuel, petroleum coke is used as fuel in various industries such as steel, aluminum, and cement (PPAC 2013). In other words, except for petroleum coke, the common use for all petroleum products (where the consumption share increased) is in vehicles and aircraft.

One of the primary reasons why the consumption share of petroleum coke has increased in the recent years has been that it has replaced coal/gas/furnace oil and lignite in industrial fuel consumption (PPAC 2013). As evident from Table 6, the consumption share of petroleum coke and furnace oil taken together declined during this period. Thus, the consumption demand for fuel for motor vehicles and aircraft cannot be argued to be the leading component of consumption demand for petroleum products. Rather, as Table 8 shows, the consumption share of those petroleum products has increased which are related with vehicles and airlines.

Table 8: Consumption Share of Petroleum Products in Total Petroleum Consumption (as percentages)

	2002–03	2007–08	2012–13
Liquefied petroleum gas (LPG)	8.0	9.3	9.9
Kerosene	10.0	7.3	4.8
High speed diesel	35.2	37.0	44.0
Petrol	7.3	8.0	10.0
Naphtha + NGL	11.5	10.3	7.8
Aviation turbine fuel	2.2	3.5	3.4
Light diesel oil	2.0	0.5	0.3
Lubricants and greases	1.2	1.8	2.0
Furnace oil and related	12.2	9.9	4.9
Bitumen	2.9	3.5	3.0
Petroleum coke	2.5	4.6	6.5
Others	5.1	4.3	3.5
Petroleum coke and furnace oil	14.7	14.5	11.3
All vehicles and aircraft related	53.8	57.8	67.3
All vehicles and aircaft related (excluding LPG)	46.8	48.5	57.4

Vehicles-related petroleum products include LPG, HSD, petrol and ATF.
Source: PPAC, Ministry of Petroleum and Natural Gas, various years.

The consumption demand of vehicles, in turn, was primarily driven by the demand for passenger vehicles and cars (Table 9). The compound annual growth rate of domestic sales of passenger vehicles and cars has been higher than that of all vehicles from 2003–04 to 2012–13. It was only in the post-crisis period that the growth rate of two-wheelers has been higher than that of all vehicles. Thus, in a nutshell, the rise in the share of import demand for crude oil over and above the export demand of petroleum products in the given period has been driven by the consumption demand for passenger vehicles, along with aircraft. With a slowdown of growth, it has also been driven by the consumption demand for two-wheelers.

Table 9: Compound Annual Growth Rate of Domestic Sales of Number of Vehicles (as percentages)

Type of Vehicles	2003–04 to 2007–08	2008–09 to 2012–13	2003–04 to 2012–13
Passenger cars	11.57	9.22	10.54
Total passenger vehicles	11.43	11.60	11.53
CVs and three-wheelers	6.29	12.65	9.36
All two-wheelers *	6.16	13.23	9.91
All vehicles *	7.42	12.75	10.21

* Excludes electric two-wheelers.
Source: Statistical Profile, SIAM, various years.

In short, an analysis of the import demand for this commodity group shows that while exports comprise an important source of import demand, domestic demand in the form of fuels for vehicles comprises a significant part of the total import demand.

Gems and Jewellery: Let us now look at the commodity group gems and jewellery (HS Code 71) more closely. Table 10 (p 69) shows the composition of this commodity group.

Table 10: Composition of Gems and Jewellery (HS Code 71)

	2007–08	2011–12	2012–13
1 Items as raw materials	22.35	15.18	17.76
2 Items as intermediate goods (2a+2b)	76.05	83.79	75.98
(2a) Diamonds (7102) and gold (7108)	70.34	77.37	72.27
(2b) Other items of 71 as intermediate goods	5.71	6.42	3.71
3 Items as consumer goods	1.58	1.02	6.25
4 Items as capital goods	0.00	0.00	0.00
5 Unspecified	0.02	0.00	0.01
All items under gems and jewellery (1+2+3+4+5)	100.00	100.00	100.00

The years have been chosen on the basis of the points where the import–GDP share of gems and jewellery increased (Figure 4).

Source: PPAC, Ministry of Petroleum and Natural Gas, various years.

It is seen from Table 10 that around 80% of the total imports of this group of commodities is used as intermediate goods. Most of the demand for this group (94%) is derived from the sector itself (Table 11).

Table 11: Composition of Input Demand of Gems and Jewellery, 2007–08

Gems and jewellery	94.2
Other sectors	5.8

Source: Calculated from Input–Output Matrix, CSO, 2007–08.

It is seen from Figure 6 that exports of gems and jewellery increased significantly during this period. However, the import of gold and diamonds increased more. This suggests that apart from exports, there is a domestic demand for gold and diamonds. Of these, the import demand for gold has been a feature of the period of growth deceleration after 2007–08 (Reserve Bank of India (RBI) 2013). Such a sharp rise in the import demand of gold has been primarily on account of a sharp rise in its asset demand (Shetty 2013; RBI 2013). The rise in the asset demand of gold can be attributed to three factors—higher rate of return than other comparable assets; the relative stability of the return; and the sharp rise in international gold prices (Shetty 2013; RBI 2013). Since much has been already written on the reasons for such a rise, we avoid going into further details. Taking the cue from the existing literature, it is important to note, however, that the specificity of the period of growth slowdown led to a rise in the asset demand, and, hence, the import demand of gold for a given level of output. This led to a sharp rise in the share of import demand of gold in GDP, as noted by the RBI (2013). We move on to examine the trend in the import of commodity groups with HS Codes 84, 85, and 88. This is shown in Table 12.

From Table 12, it can be seen that capital goods comprise the most significant part of imported commodities. In other words, on a use basis it can be said that three of the top five commodities imported are essentially capital goods. Therefore, we now turn to an analysis of the import of capital goods to India.

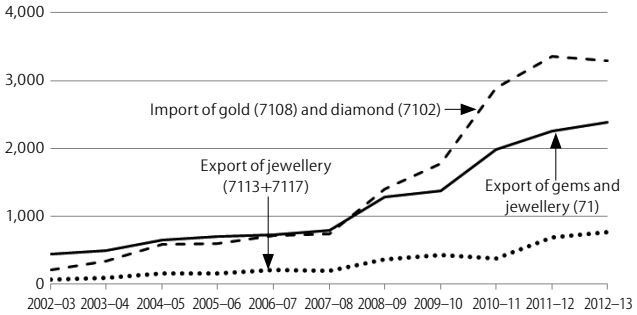
Capital Goods: One of the striking features of what has often been termed as India's new growth phase has been the rise in the import share of capital goods in GDP. Figure 7 shows that the import share of capital goods increased sharply from the early years of the last decade till 2008–09, after which it declined.

Table 12: Composition of Commodities with HS Codes 84, 85 and 88

	2002–03			2007–08		
	HS Code 84	HS Code 85	HS Code 88	HS Code 84	HS Code 85	HS Code 88
Items as consumer goods	0.3	21.4	6.8	0.4	20.9	8.4
Items as capital goods	99.7	77	58.2	99.6	77.9	84.5
Items as intermediate goods	0	1.6	35	0	1.2	7.1
Total	100	100	100	100	100	100

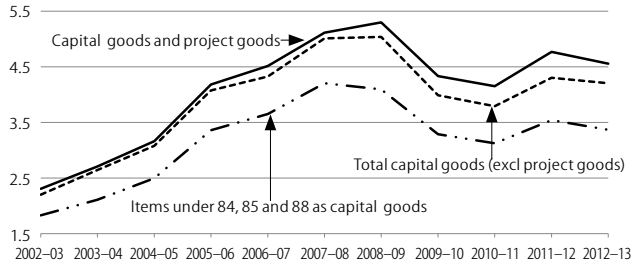
Source: As in Table 10.

Figure 6: Export and Import of Gems and Jewellery (Rs billion)



Source: Export Import data bank, Ministry of Commerce, various years.

Figure 7: Import Share of Capital Goods in GDP (as percentages)



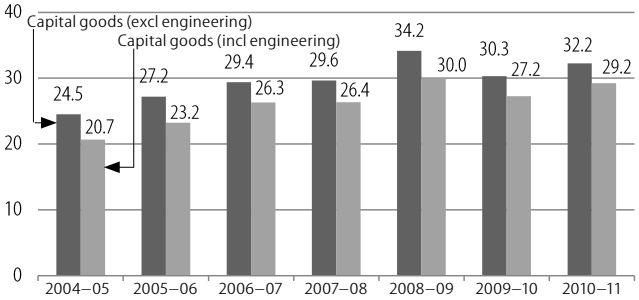
Source: Export Import data bank, Ministry of Commerce, various years.

Now, the import demand of capital goods can be seen as being determined by the average import content of capital goods (for a given level of demand for capital goods) and the level of demand for capital goods (for a given level of import content). In other words, if the average import content per unit of capital goods is denoted as "*m*" and the level of demand of capital goods as "*I*", the import demand of capital goods would be equal to $m \times I$ for any given period.

When the import demand of capital goods picked up, the *Economic Survey* (2005–06) explained this phenomenon by arguing that it "reflected the higher domestic investment and firming up of manufacturing growth."[4] However, "higher domestic investment and firming up of manufacturing growth" associated with higher domestic demand for capital goods (increase in *I*), would only lead to a side by side rise in import demand of capital goods if the average import content of capital goods (*m*) remains unchanged (or rises). But, there is no a priori reason why it should necessarily be so. In other words, the rise in domestic demand for capital goods is not entirely met by a similar rise in the domestic production of capital goods (in which case the average import content of capital goods would have declined), which requires a separate explanation. As we shall see below, the import content of capital goods increased sharply during this period.

As the Report of the Working Group on Capital Goods and Engineering Sector for the Twelfth Five Year Plan (2011) noted, the import content of capital goods (*m*) increased significantly in the recent period. This is reflected in Figure 8 (p 70), where the share of imports in domestic market for capital goods increased

Figure 8: Share of Imports in Domestic Market of Capital Goods (as percentages)



The size of the domestic market has been calculated in the report by adding net import to domestic production of capital goods. The above chart reflects the share of import of capital goods in domestic market of capital goods.

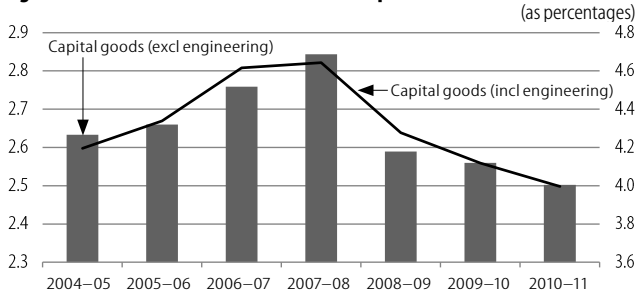
Source: Report of the Working Group on Capital Goods and Engineering Sector for the Twelfth Five Year Plan (2011).

sharply in the given period. Not only did the import content increase for the capital goods sector as a whole, it also increased in each of its sub-sectors during the same period. Further, as the report noted, the import content has been higher in the sub-sectors that are more capital intensive.

The rise in the import share of capital goods in GDP in the relevant period, thus, was driven by the rise in the import content of capital goods amidst rising domestic demand. The subsequent decline in imports was associated with a fall in domestic demand of capital goods, as reflected in Figure 9, which shows that the share of demand of capital goods (indicated by its market size) in GDP increased till 2007–08. The global crisis led to a sharp decline in the demand for capital goods from 2008–09. But, then, what explains the rise in import content of capital goods, which drove up the import share of capital goods in GDP? This leads us to the nature of demand for capital goods in India in the relevant period.

Figure 9: Share of Domestic Market Size of Capital Goods in GDP

(as percentages)



Capital goods (including engineering) is measured on the secondary axis. The size of the domestic market has been calculated in the report by adding net import to domestic production of capital goods.

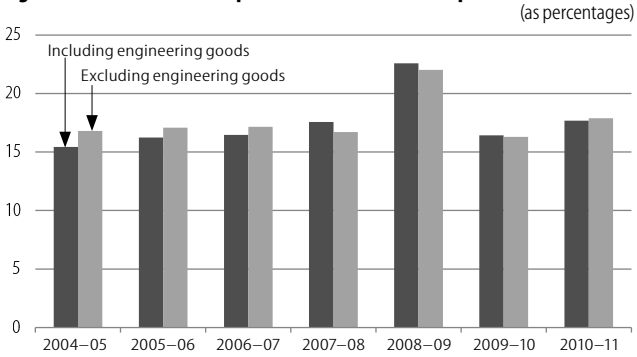
Source: Report of the Working Group on Capital Goods and Engineering Sector for the Twelfth Five Year Plan (2011).

The share of exports in total production of capital goods in India, however, has not only been low but also remained more or less stable during the relevant period (Figure 10). This indicates that capital goods production largely catered for the domestic demand during this period.

Figure 11 shows the growth rate of the index of industrial production (IIP). It is seen that the average annual growth rate of production of consumer durables increased sharply from 7.9% between 1998–99 and 2002–03 to 21.5% between 2003–04 and 2007–08. Such a rise in the growth rate of consumer durables led to a similar rise in the production of capital goods

Figure 10: Ratio between Exports and Production in Capital Goods

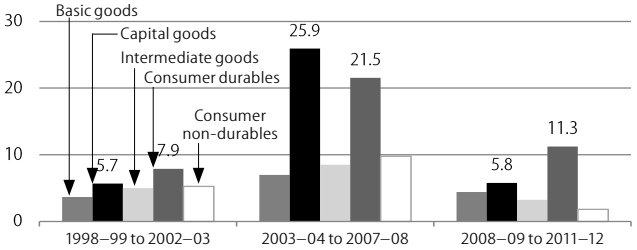
(as percentages)



Source: Calculated from the Report of the Working Group on Capital Goods and Engineering Sector for the Twelfth Five Year Plan (2011).

Figure 11: Average Annual Growth Rate of Index of Industrial Production, Use-based

(as percentages)



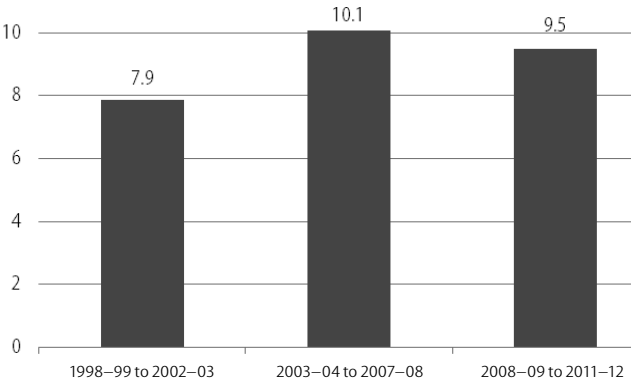
Source: *RBI Handbook of Statistics*, various years.

(5.7% between 1998–99 and 2002–03 to 25.9% between 2003–04 and 2007–08). The decline in the growth rate of consumer durables during 2008–09 to 2011–12 led to a similar decline in the production of capital goods.

The trend of the growth rate of production of consumer durables was associated with a similar trend in domestic consumption demand. As evident from Figure 12, the growth rate of expenditure in consumer durables increased significantly during 2003–04 to 2007–08 as compared to the period 1998–99 to 2002–03. The growth rate of expenditure on consumption durables, however, declined from 2008–09 to 2011–12, leading to a fall in the growth rate of production of consumer durables.

Figure 12: Average Annual Growth Rate of Expenditures on Consumption Durables

(as percentages)



Source: National Account Statistics, CSO, various years.

Any rise in the consumption demand creates additional investment and, hence, a rise in the demand for capital goods in the next period over and above what any simple investment function, linking investment decisions to profits, capacity

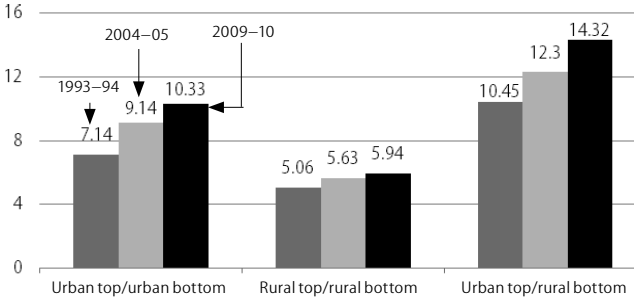
utilisation, or the change in output (accelerator) would suggest. But any rise in the demand for these consumer durables affects not only the level of investment, but also the nature of investment.

By its very nature, the bulk of these consumer durables are capital intensive and involve the introduction of foreign technology embedded in imported capital goods (Chandrasekhar 2011). This is because the consumption demand of these commodities in developing countries is driven by the demonstration effect of the lifestyle in developed countries and calls forth investments that can cater for these demands (Patnaik 2007). Thus, a rise in the level of investment induced by such a consumption pattern is associated with the introduction of technological-cum-structural change through imitation of what prevails in the metropolis (Patnaik 2007). Thus, the rise in the consumption demand of these commodities involves not only a rise in investment demand, but also an increase in the import content of investment and capital goods. What explains such a rise in the domestic consumption demand of durables during this period?

Impact of Inequality

The post-liberalisation period of the Indian economy has witnessed a rise in income inequality alongside a rise in the growth rate of GDP. Since consumption is a function of income, the rise in income inequality is reflected in the accentuated consumption inequality during this period. The rise in consumption inequality has been pointed out in various studies such as that of Roy (2011), Chandrasekhar and Ghosh (2012), Himanshu (2007), and Sen and Himanshu (2004). In addition, Banerjee and Piketty (2005) also show the increase in income inequality based on tax returns data. Such a rise in inequality, however, has been associated with a sharp rise in the consumption of the top-most decile vis-à-vis the bottom decile, both in rural and urban areas (Figure 13). In short, at least in terms of income share, the Indian economy in the neo-liberal regime has been characterised by an income redistribution from the poor to the elites.

Figure 13: Ratio of Consumption between Top and Bottom Deciles

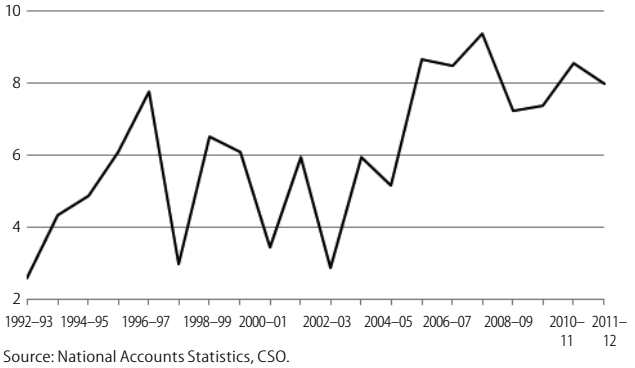


Source: Chandrasekhar and Ghosh (2012).

Such an upward redistribution of income, however, should have reduced the level of consumption expenditure, as the share of income in consumption of the rich is expected to be lower than that of the poor (Kalecki 1971). However, what was witnessed particularly after 2002–03 was a sharp rise in the growth rate of private final consumption expenditure (Figure 14).

Figure 14: Growth Rate of Private Final Consumption Expenditure at 2004–05 Prices

(as percentages)



Source: National Accounts Statistics, CSO.

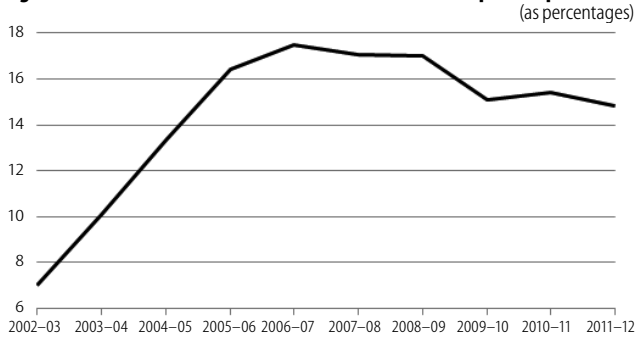
Though the consumption growth rate did taper off after the slump in 2007–08, it was still at a higher level in 2011–12 than in the period before 2002–03. This leads one to examine the reason for such a rise in the consumption growth rate despite an income redistribution upward.

One of the plausible countervailing factors arresting the fall in consumption demand as a result of rising inequality, suggested in the recent literature, is the specificity of the nature of consumption pattern of the elites in a developing country such as India (Patnaik 2007). The tastes and preferences of the elites are typically influenced by the demonstration effect of lifestyles in the developed countries (Patnaik 2007). This implies that there exists a perennial demand for the new products, which are innovated in the metropolis and made available by technological-cum-structural changes in a liberalised economy. However, real access to these new products depends on the magnitude of income of the elites (Patnaik 2007). This is because the access to "new goods" requires a minimum scale of expenditure. Thus, in an economy such as India's, the income redistribution in favour of the elites raises their marginal propensity to consume (MPC) once they cross a threshold level of income.

Second, the rise in the growth rate of personal loans can be a plausible countervailing factor. The sharp rise in the consumption expenditure after 2002–03, particularly till 2007–08, was primarily financed by bank credit (Figure 15, p 72). The share of personal loans by commercial banks in private final consumption expenditure increased from 2002–03 to 2006–07. Though it witnessed a marginal decline after 2006–07, it still remained at a higher level than during 2002–03. The consumption growth rate increased till 2007–08, and the rise in the share of personal loans in consumption during this period indicates a rise in the growth rate of personal loans. The share of personal loans in total outstanding credit of scheduled commercial banks increased from 9.3% in 1996 to 11.2% in 2000, and subsequently to 22.3% in 2007 (Ghosh and Chandrasekhar 2009). Such a rise in the growth rate of borrowing, all other things being the same, would increase the growth rate of consumption for a given level of income and income shares (Dutt 2006). Thus, a fall in the consumption growth rate due to a rise in profit share or income share of the elites can be compensated by a rise in the growth rate of borrowing.

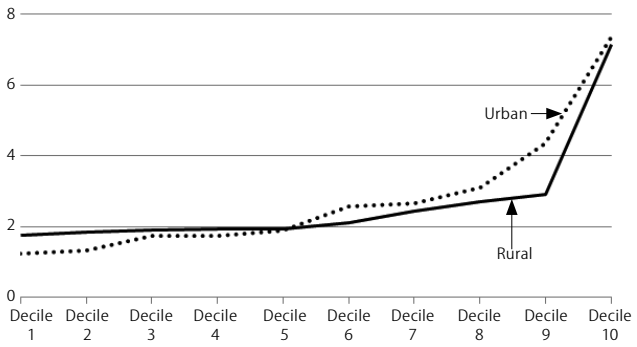
Figure 15: Share of Personal Loans in Private Final Consumption Expenditure

(as percentages)



Source: National Account Statistics, CSO and Basic Statistical Returns of Scheduled Commercial Banks, RBI, various years.

Figure 16: Share of Durables in Consumption Expenditure (as percentages)



Source: Calculated from NSS 66th Round, Report No 555 (2010).

In a nutshell, the Indian economy has been characterised by two "stylised facts" between 2002–03 and 2012–13, the period which witnessed a sharp rise in the import–GDP ratio. One, a rise in the income and consumption share of the top deciles of the population (the elites); and two, the rise in the consumption growth rate despite an upward redistribution of income and consumption.

If the consumption pattern of the elites is different from that of the poor, any rise in their consumption share would be associated with a rise in the share of consumption of commodities that are primarily demanded by the elites. Such a change has been particularly discernible in the case of consumer durables. This is because the expenditure share of durables in total consumption is higher for the upper deciles, particularly for the topmost decile (Figure 16). Thus, the rise in the consumption share of the elites, particularly the top 10%, has also been associated with a rise in the overall expenditure share of durables in total consumption expenditure in the post-liberalisation period (Table 13).

Table 13: Expenditure Share of Durables in Consumption Expenditures

(as percentages)

	1993–94	1999–2000	2004–05	2009–10	2011–12
Rural	2.7	2.6	3.4	4.8	6.1
Urban	3.3	3.6	4.1	6.7	6.3

Source: NSS 68th Round, Report No 555 (2014: 30).

Such a rise in the consumption of durables by the elites, particularly after 2002–03, brought about a sharp rise in the import of capital goods for the reasons discussed earlier. But, it was also associated with the rise in expenditures on durables such as vehicles, which eventually drove the consumption of petroleum products, and, hence, the import of crude oil. The rise in the domestic sale of vehicles from 2002–03 has been mainly on account of higher sales in two-wheelers and passenger cars. This rise in the consumption of vehicles, like in the case of other durables, was also driven by the consumption of the elites. Figure 17 (p 73) shows that the percentage share of households possessing motorcycles and motor cars has been highest in the top decile.

Thus, to summarise the arguments made so far, the rise in the consumption demand of the elites has been associated with a rise in the demand for consumer durables in general, and vehicles in particular. It is this higher consumption demand for these commodities, which, all other things being the same, brought forth higher import demand for capital goods and crude oil. In other words, the rise in the import–GDP ratio in the recent period has been associated with a rise in the income and consumption share of the elites. Such a rise has been further fuelled by the rise in the import content of exports and asset demand of gold.

That one of the prime sources of such import demand has been the consumption demand of the elites indicates that the import propensity associated with their consumption pattern has been higher than that of the poor. Thus, any upward redistribution of income, which characterised the growth process in the recent period, all other things being the same, leads to a rise in the import demand for a given level of output. The following subsection examines whether such a rise in the income share of elites has been associated with a rise in the import–GDP ratio in the economy.

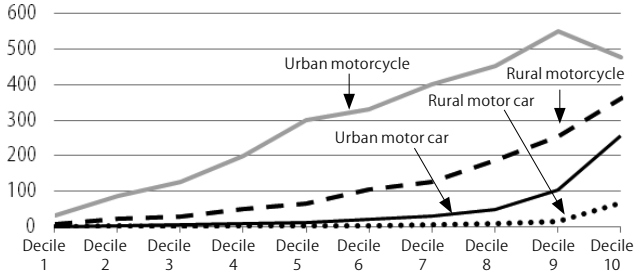
Analysis

The paper has so far attempted to explain the rising import–GDP ratio by highlighting the change in the demand pattern of the domestic economy through an upward income redistribution from the poor to the elites, while pointing out that the rise in the share of FVA in exports would also add to a rise in imports. Any attempt to test this hypothesis empirically, however, faces several constraints.

In the absence of adequate data on income shares in India, it is difficult to provide any direct evidence for the relationship between the import–GDP ratio and the income shares of the elites. On the other hand, consumption data for major National Sample Survey (NSS) rounds are not available on an annual basis. Similarly, data for the share of FVA in exports or the import content in exports is also not available on an annual basis. Given these, we do the following.

We take the share of wages in gross value added of the organised sector (from the Annual Survey of Industries) as an approximate indicator of the income shares of the poor. In the absence of annual data on the import content in exports, we look for an approximate indicator that can capture the trend in the import content and for which data is available on an annual basis. Table 14 (p 73) is based on the STAN data set on import content of exports for India and it provides information on the import content of exports of various sectors during the relevant period. The import content of coke, refined petroleum,

Figure 17: Number of Households (Per Thousand) Possessing Motorcycles and Motor Cars in Monthly Per Capita Consumption Expenditure Deciles, 2009–10



Source: NSS Report 541.

and nuclear fuel has been highest among all the sectors mentioned. Thus, any rise in the share of exports of this sector in total exports would lead to a rise in the import content of exports. Accordingly, we take the share of petroleum products in total exports as an approximate indicator of the overall import content in exports. Finally, with a limited number of observations, it may be noted that the following econometric exercise can at best be regarded as a supplement to the arguments made earlier.

Table 14: Import Content of India's Exports

Period	Mid-1990s	Early 2000s	Mid-2000s
Sector			
Agriculture, hunting, forestry and fishing	0.026082	0.0271751	0.0515187
Mining and quarrying	0.0475444	0.0568664	0.0742349
Food products, beverages and tobacco	0.048557	0.0723107	0.1335239
Textiles, textile products, leather and footwear	0.0723583	0.0945731	0.1664647
Wood and products of wood and cork	0.034863	0.0672552	0.1881635
Pulp, paper, paper products, printing and publishing	0.1121563	0.1707333	0.2203594
Coke, refined petroleum products and nuclear fuel	0.5216959	0.3775912	0.5487469
Chemicals and chemical products	0.155399	0.1843796	0.2599751
Rubber and plastics products	0.1290681	0.1765241	0.2548218
Other non-metallic mineral products	0.1960593	0.2069898	0.2117745
Basic metals	0.1625937	0.1579341	0.2522638
Fabricated metal products except machinery and equipment	0.1403667	0.1652312	0.269918
Machinery and equipment nec	0.1882972	0.1695339	0.2690097
Office, accounting and computing machinery	0.0644293	0.1772856	0.2953837
Electrical machinery and apparatus nec	0.1690619	0.2337882	0.347251
Radio, television and communication equipment	0.1980269	0.2115413	0.3028471
Medical, precision and optical instruments	..	..	0.195636
Motor vehicles, trailers and semi-trailers	0.1142344	0.1474886	0.23008
Other transport equipment	0.0979267	0.1368972	0.251593
Manufacturing nec; recycling	0.1293721	0.2753328	0.3489813
Total	0.1038035	0.1241811	0.1849083
Manufactures (ISIC 15–37)	0.1297662	0.1666191	0.2671871
Services (ISIC 45–99)	0.0755016	0.0709351	0.1126021

We define the variables in the following manner,

M = import–GDP ratio,

w = share of wages in gross value added,

x = share of petroleum products in total exports.

We run a simple econometric exercise to examine the impact of change in the export share of petroleum and the income share of the poor (here, wages) on the import–GDP ratio. Thus, "*m*" is taken as the dependent variable while "*w*" and "*x*" are taken as independent variables. Given our earlier arguments, we expect a negative coefficient for "*w*" and a positive coefficient for "*x*". As evident from Table 15, the coefficients for "*w*" and "*x*" are –0.67 and 1.2, respectively, with the associated p-values less than the significance level of 0.01. The p-value of the model is less than the significance level of .01, while R-squared and adjusted R-squared are 0.96 and 0.95, respectively.

Table 15: Regression Results

	Observation (1)	Coefficient (2)	P>|t| (3)	
w	21	-0.67	0.00	Prob> F = 0.0000
x	21	1.2	0.00	R-Squared = 0.96
_cons	21	.20	0.00	Adj R-Squared = 0.95

Source: Calculated from Annual Survey of Industries, CSO and *Handbook of Statistics of Indian Economy*, RBI, various years.

To check the stationarity of the model, we use the standard Augmented Dickey–Fuller Test. Using Akaike's information criterion and Schwarz's Bayesian information criterion, we determine the number of lags for the residual in the regression analysis as 0. The MacKinnon p-value is less than 0.01 (Table 10). The Durbin–Watson Statistic for the residual is 2.21 and greater than the upper critical value (given in parenthesis), which indicates that the problem of autocorrelation in residuals does not exist. For a similar purpose, we also use the Durbin's alternative test for autocorrelation. It gives a similar result as the p-value is greater than the significance level of 0.10. From the limited availability of data, one can argue that there exists a statistically significant relationship between the income share of the elites and the import–GDP ratio in the Indian economy.

Table 16: Result of Various Tests for the Residual in the Regression Analysis

	Indicator	Values
Augmented Dickey–Fuller Test	MacKinnon approximate p-value for Z(t)	0.0001
Durbin–Watson statistic for autocorrelation	d-statistic (3, 20)	2.20877 (1.53849)*
Durbin's alternative test for autocorrelation	Prob> chi2	0.59

Upper critical value of d-statistic at 5% significance level for 21 observations is given in parenthesis.

Source: Calculated from Annual Survey of Industries, CSO and *Handbook of Statistics of Indian Economy*, RBI, various years.

Conclusions

The paper shows that the rise in the current account deficit in India is a result of a rise in the trade deficit, which is mainly driven by the rise in the import–GDP ratio. It disintegrates the rise in the import–GDP ratio in terms of three main commodities—gems and jewellery, capital goods and petroleum. It is shown that the rise in the imports of the commodities is a result of the demand pattern in the economy. Even with an increase in inequality, the rise in the growth rate is seen to be mainly because of higher consumption by the rich and elites. This consumption being mainly driven by import-intensive commodities, there is an increase in imports. Thus, it is concluded that with a rise in inequality and lower income share of the poor, all other

things being the same, the import propensity of the economy will keep rising. This relationship between inequality and import intensity is established through a simple econometric exercise.

On the basis of the findings, it can be argued that the increase in import intensity and the resulting increase in trade deficit is not merely a problem of managing the external account or exogenous shocks. True, any rise or fall in the prices (for example, exchange rates or the US dollar price of crude oil) would affect the value of imports for a given level of GDP. However, there remains a pressure on the import–GDP ratio in India to rise because a structural problem in the economy causes the import intensity to rise with rising inequality.

NOTES

1 The two basic assumptions that are made for such estimations are: (a) for a given industry, all firms allocated to that industry use the same goods and services to produce the same outputs; and (b) that the proportion of intermediates that an industry purchases from abroad is equal to the ratio of imports to total domestic demand of that product.

2 It is to be noted that the share of FVA in service sector exports has also increased during this period. However, we have excluded the service sector from our analysis because the paper primarily attempts to analyse and explain the trend in the merchandise trade deficit.

3 For similar reasons, any fall in price of crude oil as witnessed recently, with other things being the same, would reduce the cost of import of crude oil.

4 See *Economic Survey* (2005–06: 108).

REFERENCES

Banerjee, A and T Piketty (2005): "Top Indian Incomes, 1922–2000," *World Bank Economic Review*, 19 (1), pp 1–20.

Chandrasekhar, C P (2011): "India's New, High-Growth Trajectory: Implications for Demand, Technology and Employment," *Indian Journal of Labour Economics,* 54 (1), pp 31–49.

Chandrasekhar, C P and J Ghosh (2012): "Consumption Inequality in India," Macroscan, http://www.macroscan.org/fet/jun12/fet-260612Consumption_Inequality.htm.

— (2013): "How Should We Deal with the Current Account Deficit?," Macroscan, http://www.macroscan.org/fet/sep13/pdf/Current_Account.pdf.

Chaudhuri, S (2013): "Manufacturing Trade Deficit and Industrial Policy in India," *Economic & Political Weekly,* 47 (8), pp 41–50.

Dutt, A K (2006): "Maturity, Stagnation and Consumer Debt: A Steindlian Approach," *Metroeconomica*, 57 (3), pp 339–64.

Ghosh, J and C P Chandrasekhar (2009): "The Costs of 'Coupling': The Global Crisis and the Indian Economy," *Cambridge Journal of Economics*, 33, pp 725–39.

Himanshu (2007): "Recent Trends in Poverty and Inequality: Some Preliminary Results," *Economic & Political Weekly*, pp 497–508.

Kalecki, M (1971): *Selected Essays on the Dynamics of the Capitalist Economy 1933-1970*, CUP Archive.

— (2013): *Theory of Economic Dynamics*, Vol 6, Routledge.

Patnaik, P (2007): "A Model of Growth of the Contemporary Indian Economy," *Economic & Political Weekly*, pp 2077–81.

PPAC (2013): "Industry Sales Review Report," Ministry of Petroleum and Natural Gas, New Delhi.

RBI (2013): "Report of the Working Group to Study the Issues Related to Gold Imports and Gold Loans by NBFCs," Reserve Bank of India, New Delhi.

Roy, S (2011): "Trends and Patterns in Consumption Expenditure: A Review of Class and Rural-Urban Disparities," Working Paper, 2011/04, Institute for Studies in Industrial Development (ISID), http://isidev.nic.in/pdf/WP1104.pdf.

Sen, A and Himanshu (2004): "Poverty and Inequality in India: I," *Economic & Political Weekly*, pp 4247–63.

Shetty, S L (2013): "How the Gold Import Chickens Have Come Home to Roost," *Economic & Political Weekly,* 48 (42), pp 75–79.