Some Issues in External Sector Management

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The Indian external sector has undergone radical changes post 1992. Against this background, an attempt is made to look at the role of the exchange rate, level of current account deficit, adequacy of foreign exchange reserves and capital flows, and capital account convertibility. The balance of payments in India has been managed well so far. There is a need to increase export competitiveness, which requires among other things an efficient, well-knit infrastructure. To prevent a rise in the real effective exchange rate, we should keep domestic prices stable. The surpluses in the services sector will also need nurturing.

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It is a great honour to deliver the Saumitra Chaudhuri Memorial Lecture. More than an honour, it is my duty. For almost a decade, Saumitra and I interacted on a daily basis, examining many issues and problems confronting the economy. Saumitra was a versatile economist who was at home in every branch of economics. However, he was particularly focused on financial markets—both domestic and foreign—and the external environment. While he carefully looked at developments in most economies, he was especially a keen observer of the Chinese economy. Invariably, Saumitra wrote the first draft of the two reports which the Economic Advisory Council used to put out. It was his draft which was subsequently discussed and approved with whatever modifications that were found necessary. One must also mention the extraordinary feel that Saumitra had for data. It was in the fitness of things that he was asked to chair several committees to revise the data series, such as the Index of Industrial Production. His laptop was a treasure house of information. In the demise of Saumitra, the country has lost an eminent economist, a serious thinker, and a critical analyst. The country will sadly miss his inputs on policymaking. Since one of Saumitra's interests was the external sector, I have chosen to speak today on some issues in external sector management.

Break with the Past

The year 1991 was a great divide in India's post-independence economic history. The country faced an acute economic crisis triggered by a severe balance-of-payments (BoP) problem. The crisis was converted into an opportunity to bring about fundamental changes in India's economic policy. One area that underwent a deep transformation was the external sector.

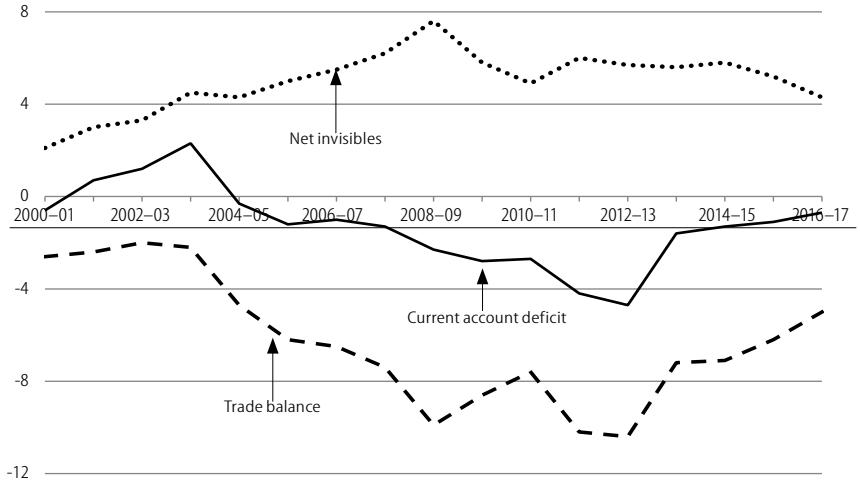
Broadly speaking, there were three types of changes. First, India gave up the inward-looking approach and abandoned the import substitution policy that dominated India's economic policy since independence. India signalled that it was boldly abandoning its export pessimism and was accepting the challenge of integrating into the world economy. The new policy effectively meant the beginning of a process of dismantling all quantitative controls and reducing the tariff rate on imports to levels seen in other emerging industrialised countries. A World Bank (2014) study finds that the weighted mean tariff rate on manufactured products came down from 76.3% in 1990 to 8.3% in 2009.

The second change was with respect to exchange rate management. The devaluation of the Indian rupee in 1991 was an important first step. But that does not constitute a reform. The exchange rate of the rupee until then was determined by the Reserve Bank of India (RBI) by linking its value to a basket of currencies. But, in the 1980s, we had virtually moved away from the basket. The rupee in nominal terms had decreased steadily. Since the mid-1980s, there was in fact a substantial reduction in real terms. In 1991, we moved first to a dual exchange rate system (RBI 2013) and, in early 1993, we moved to a market-determined exchange rate system. The system, however, does not preclude interventions by the RBI. The Indian currency became convertible on the current account in 1994.

The third important change was with respect to the financing of the current account. The new regime allowed foreign direct investment (FDI) over a wide range of sectors with even majority ownership except in certain areas. Portfolio investment in Indian stocks was of course permitted to financial institutional investors.

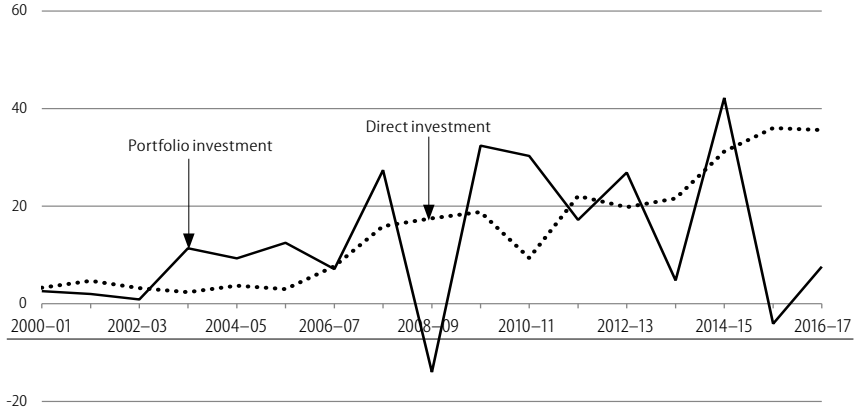
Thus, the landscape of the external sector went through far-reaching changes. Contrary to fears expressed in some quarters at that time, India's new external sector regime has turned out to be on the whole beneficial. While the need to be on the watch continues, the external sector has acquired sufficient resilience

Figure 1: Current Account Deficit, Trade Balance, and Net Invisibles (% of GDP)



Source: *Handbook of Statistics on Indian Economy*, RBI.

Figure 2: Foreign Direct Investment and Foreign Portfolio Investment ($ bn)



Source: *Handbook of Statistics on Indian Economy*, RBI.

to withstand shocks. Unlike many of the East Asian countries, including China, which have a current account surplus, India still has a current account deficit (CAD). The trade deficit is high. The CAD is low because of the surplus in services. It is imperative that we strive towards keeping the CAD at a level that can be financed by normal capital flows.

Balance of Payments

Let us now take a look at some of the salient features of our external sector. In 1990–91, India's CAD stood at 3% of the gross domestic product (GDP). The problem at that time was twofold: one, the CAD was high; and, second, it could not be financed. That is why the crisis exploded. Figure 1 depicts India's CAD. The CAD has come down since 1991–92, except in 2011–12 and 2012–13, when it touched unusually high levels by crossing 4%. But, the financing posed no problems in 2011–12. However, 2012–13 was different and the authorities had to take specific measures to contain imports, particularly of gold. Since 2012–13, the average CAD has been 1.2% of GDP. It is likely that in 2017–18 the CAD may be 2% of GDP. The merchandise trade balance reached a peak of deficit of 10.4% in 2012–13. Even though it has come down, it still remains high at 5% as of 2016–17. Invisibles accounted for a surplus of 4.3% of GDP in 2016–17. Within it, net transfers constituted 2.5% of GDP. These numbers show broadly the strength and vulnerability.

On the financing side of the CAD, there is a sea change. In 1990–91, there was neither FDI nor portfolio investment. The three elements that dominated the sources of financing were net external assistance, net commercial borrowings, and non-resident Indian deposits, each equivalent to 0.7% of GDP. In contrast, in 2014–15, the dominant flows were FDI, which was equivalent to 1.5% of GDP, and portfolio investment, which was equal to 2.1% of GDP. In absolute terms, FDI in 2016–17 was $35.6 billion and portfolio investment was $7.6 billion. Figure 2 shows the behaviour of the two inflows over the years. While FDI has shown a steady rise, portfolio investment fluctuates, even turning negative in 2008–09 and 2015–16. Portfolio investment is strongly influenced by the worldwide trends in stock markets.

The net effect of the capital flows and the CAD is the change in foreign exchange reserves. At the height of the 1991 crisis, our reserves were hardly a few billion dollars. Today, these reserves stand at $420 billion. While the size is comforting, it must be noted that these have been built out of excess capital flows rather than current account surpluses.

Export Performance

Before moving to review some critical issues relating to the external sector, we need to have some understanding of the behaviour of exports and imports. In the first few decades after India's independence, the pursuit of the imports substitution strategy had an adverse impact on India's exports. India's share in world exports, which stood at 1.85% in 1950, came down to 0.50% by 1991. The share started moving up in the post-liberalisation period and touched 1.70% in 2013. This was possible only because Indian exports grew at a faster rate than world exports. In fact, there is a strong correlation between India's export growth and world export growth (Table 1, p 36).

India's exports started rising in the 1980s. There were a number of policy initiatives undertaken at that time to help export promotion (Panagariya 2004a, 2004b). However, India's exports just kept pace with world exports so that India's share in world exports did not show any increase. A strong pickup happened post 1992. Between 1993 and 1997, the average annual growth rate was 12.4% and India's share in world exports went up to 0.63%. In 1998, the export growth fell and turned negative, primarily because of the East Asian crisis. India's exports started showing strong growth from

2000. Between 2000 and 2008, India's exports grew at 21% annually, taking its share in world exports to 1.21%, a virtual doubling of its share in nine years. The impact of the financial crisis of 2008 led to a negative growth of 15.4% in 2009. In the same year, world exports fell by 22.3%. India's export performance picked up strongly in 2010 and 2011. Thereafter, the performance has been weak. In both 2014–15 and 2015–16, the export growth turned negative. In 2015–16, India's exports declined more strongly than world exports. In 2016–17, there was a positive growth of 5.4%. This came, however, on a low base. India's CAD has, however, been contained at a low level in the last few years despite the poor performance of exports because imports declined even more sharply due to the steep decline in oil prices. In 2017–18, during the period from April 2017 to January 2018, the export growth was 11.74%.

Export growth in value terms is composed of growth in quantum and price changes. Table 1 provides the behaviour of the quantum index of India's exports. It is seen that there is much less volatility in the quantum figures than in value figures. The commodity composition of India's exports has undergone many changes, the most significant of which is the rise in petroleum products. Oil exports, which stood at $397 million in 1993–94, jumped to $63,179 million in 2013–14. The share of petroleum products to total exports has reached 20.1%. In the last two years, when India's export value fell, one of the significant contributors was petroleum products, because of the sharp fall in oil prices (Table 2). In 2015–16, the top eight export sectors were petroleum products, gems and jewellery, textiles, chemicals and allied products, agriculture and allied sectors, transport equipment, base metals, and machinery. It must, however, be noted that the share of some of the sectors, like textiles, has been declining.

Table 1: Growth Rates of India's Exports (Value and Volume), World Exports (Value and Volume), and Share of Indian Exports (%)

Year	World Exports Growth	Indian Exports Growth	Share of Indian Exports	World Exports Volume Index Change	Indian Exports Quantum Index Change
2000	13.0	18.8	0.7	*	25.0
2001	-4.1	2.3	0.7	0.2	0.8
2002	4.9	13.6	0.8	4.0	19.0
2003	16.9	19.7	0.8	6.3	7.3
2004	21.5	30.0	0.8	11.0	11.2
2005	13.9	30.0	0.9	6.8	15.1
2006	15.4	22.3	1.0	8.4	10.2
2007	15.6	23.3	1.1	6.7	7.9
2008	15.2	29.8	1.2	1.8	9.0
2009	-22.3	-15.4	1.3	-11.9	-1.1
2010	21.9	37.3	1.5	14.6	15.2
2011	18.9	33.8	1.6	5.9	8.9
2012	0.8	-2.0	1.6	3.4	7.9
2013	2.5	6.1	1.7	3.2	5.9
2014	0.3	2.5	1.7	2.0	5.0
2015	-13.3	-17.1	1.6	1.4	-27.0
2016	-3.2	-1.3	1.6	1.7	7.9

(1) Quantum Index of Indian Exports is provided in fiscal year basis starting 2000–01 to 2016–17.
(2) * Data not available.
Source: World Development Indicators, *World Bank and Handbook of Statistics on Indian Economy*, RBI.

Table 2: Growth Rates for India's Oil Exports, Non-oil Exports and Total Exports (%)

Year	Oil Exports	Non-oil Exports	Total Exports
2001–02	13.30	-2.30	-1.60
2002–03	21.60	20.20	20.30
2003–04	38.50	20.20	21.10
2004–05	95.90	27.00	30.80
2005–06	66.50	19.50	23.40
2006–07	60.10	17.90	22.60
2007–08	52.20	24.80	28.90
2008–09	-2.90	17.20	13.70
2009–10	2.30	-4.60	-3.50
2010–11	47.10	39.30	40.50
2011–12	35.10	19.20	21.80
2012–13	8.60	-4.20	-1.80
2013–14	3.80	4.90	4.70
2014–15	-10.10	0.90	-1.30
2015–16	-46.20	-8.60	-15.50
2016–17	3.40	5.70	5.40

Source: *Handbook of Statistics on Indian Economy*, RBI.

An analysis of region-wise exports clearly indicates a shift towards faster-growing economies. The share of exports going to European Union countries has come down from 26.1% in 1993–94 to 16.5% in 2013–14. On the other hand, the share of exports to developing Asian countries has increased from 22.0% to 30.4% during this period as per the *Handbook of Statistics on Indian Economy* (RBI 2017).

Import Behaviour

In the post-liberalisation period, imports have shown a steady increase from $27.9 billion in 1990–91 to $393 billion in 2016–17. As a proportion of GDP, they stand at close to 20%. There have been years when it had touched 27% of GDP. The rise in imports of oil is explained by the growth in the economy, stagnation in domestic production, and the rise in oil prices until recently. Despite a reasonably good performance with respect to exports, if the trade deficit has widened it is because of the sharp rise in certain categories of imports. Apart from oil, electronic goods have also shown a steep increase. At around $40 billion, they account for 10% of total imports. They accounted for less than 3% in 1998–99. Another item that has shown a sharp upward surge is gold. In 2003, India's gold imports were 854 tonnes, valued at $5.4 billion. In 2015, they went up to 1,047 tonnes, valued at $35 billion.

There were years like 2011 and 2012 when the value of imports of gold crossed $50 billion. These three categories—oil, electronic goods, and gold—will require different approaches if we have to contain their growth. To contain import of crude oil, efforts need to be directed towards more efficient use of energy, finding alternative sources of energy, and increasing domestic production. As far as electronic goods are concerned, attention is needed to expand the domestic base of production. Gold import is deeply rooted in the Indian psyche. High inflation forces people to use gold as a hedge. While moderation in inflation will help, over a period of time the lure towards gold must be weaned. So far, the various gold schemes introduced by various governments have not had much of success. The idea that gold is a better investment avenue is also not always true. Gold prices also rise and fall. For example, in 2010–11, the price of gold per ounce was $1,293. After rising for the next two years, it fell and, as of 2016–17, it stood at $1,258 per ounce. Of course, in rupee terms, it has not fallen because of the depreciation of the rupee in terms of the dollar. However, between 2000 and 2017, gold prices in rupee terms went up 6.4 times. During the same period, the Sensex went up 6.7 times (Table 3, p 37).

Factors Influencing Exports

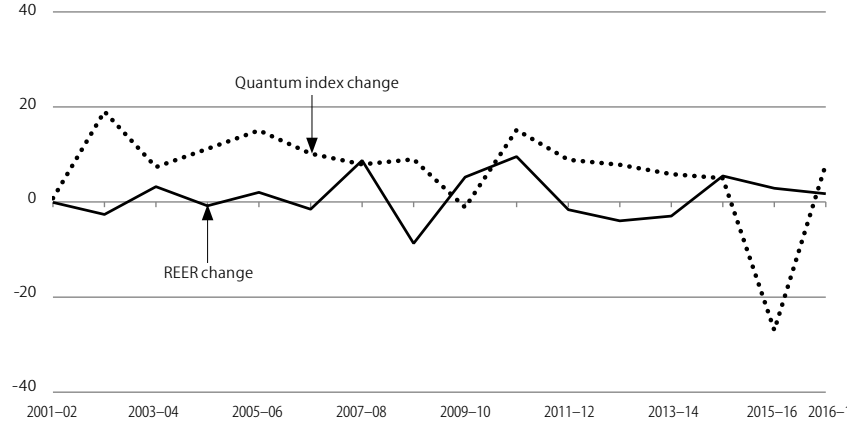
Given this background, what are our concerns? It must be said that management of the external sector is one of the success stories of liberalisation. Prior to 1992, India had to go to the International Monetary Fund (IMF) six times at periodic intervals to tide over the BOP difficulties.

Post 1992, there has been no such occasion. Even in 2013, when India had a sudden shock because of the withdrawal of capital consequent on the United States' Federal Reserve's (Fed) intended decision to bring to close the easy monetary policy, we were able to manage on our own. The low CAD in the last few years has also been helped by a steep drop in crude oil prices. They have, however, begun to rise again. If we have to maintain stability on the external account, what are the areas in which action is required? To what extent can we leverage external demand to spur growth? Is the concept of export-led growth relevant today? In the days when South Korea, Taiwan, and Thailand were going ahead with huge trade surpluses, it was felt that what was applicable to small countries did not hold good for a big country like India. Then, China came and moved ahead with rapid growth, supported by a strong external sector. China's exports equal $2 trillion, compared to India's merchandise exports of $200 billion. China's share in world exports is 14%. There is still an opportunity there, even though the external environment is getting cloudy.

We have already reviewed the behaviour of India's exports. In the post-liberalisation era, there have been periods of sharp increase in exports. At a theoretical level, there are three factors that influence India's exports.

An important factor influencing India's exports is the behaviour of the GDP of importing countries or world GDP. This is the direct income effect. As the incomes of importing countries increase, they increase expenditure, part of which spills into imports. The contrary behaviour occurs when incomes fall. As referred to earlier, India's exports follow a pattern similar to world exports, which can be taken as a proxy for world GDP. For example, the 2008 crisis had an immediate impact on India's exports. The poor performance of India's exports since 2014–15 is also largely a reflection of the tepid growth of advanced economies. Apart from affecting the quantum of India's exports, it had affected the value of India's exports in dollar terms because of the fall in international commodity prices. Besides the sharp decline in crude oil prices, there has been a decline in other prices such as metals and minerals. The revival of India's exports depends strongly on the pace of the recovery of advanced economies. It also points to the need for Indian exports to shift the direction of trade even more towards faster-growing emerging market economies.

Figure 3: Change in REER Index, Quantum Index of Indian Exports, and Growth Rate for India's Exports (%)



Source: *Handbook of Statistics on Indian Economy*, RBI.

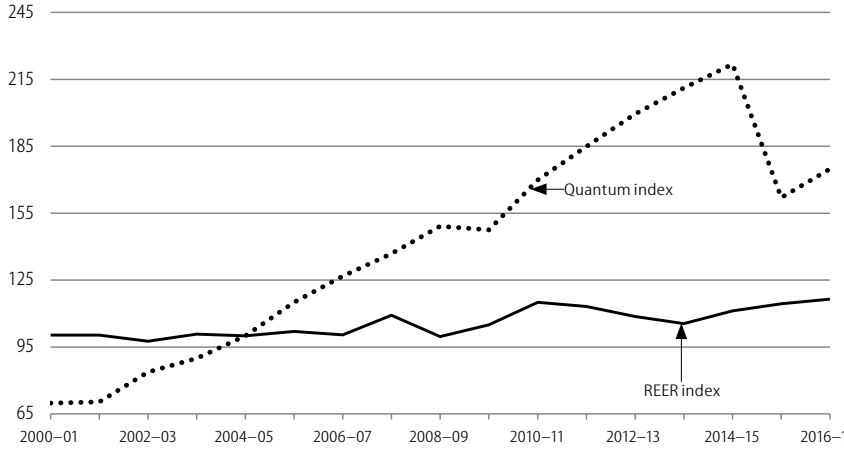
In the export demand equation, the exchange rate can be taken as a kind of price variable. If the Indian rupee is overvalued, it has a negative impact on India's exports. In popular perception, the rupee's value in relation to the dollar is dominant. However, we need to look at the behaviour of the rupee in relation to the currencies of our major trading partners. That is why the RBI started constructing the nominal effective exchange rate (NEER) and real effective exchange rate (REER) beginning in the late 1980s. We now have two series under each head depending on the number of countries included. The REER is the NEER adjusted for relative inflation. The weights can depend upon either exports or total trade. The launch of the liberalisation reforms began with the devaluation of the rupee in two stages in early June 1991. The rupee was devalued by 17.38% in relation to the sterling, which was then the intervention currency. India moved to a new exchange rate regime in February 1993 when the rupee was left to be determined by and large by the market. This, however, did not preclude the RBI from intervening if there was volatility in the market or if the rate was deemed to be unsustainable (Rangarajan and Mishra 2013). On the role of the exchange rate, there are some who strongly hold the view that the rupee should be kept undervalued. The frequently cited example is that of the East Asian countries in the 1970s and 1980s that were able to maintain strong export growth by keeping the value of their currencies low. In theory, there is no doubt that the exchange rate as a price variable must have an impact on the volume of exports. However, how strong the variable is will be known only through empirical testing. A visual inspection of the two indices does not provide any evidence (Figure 3; Figure 4, p 38). The impact of the exchange

Table 3: Gold Prices in ₹/10 gm and $/10 gm and Sensex

Year	₹/10 gm	$/10 gm	Sensex	Change in Sensex (%)	Change in Gold Price (₹) (%)
2000	4,119.4	88.25	3,972.12		
2001	4,287.08	88.91	3,262.33	-17.87	4.07
2002	5,353.13	111.64	3,377.28	3.52	24.87
2003	6,106.56	133.84	5,838.96	72.89	14.07
2004	6,088.59	140.06	6,602.69	13.08	-0.29
2005	7,424.48	164.95	9,397.93	42.33	21.94
2006	8,994.31	203.22	13,786.91	46.70	21.14
2007	10,566.64	268.09	20,286.99	47.15	17.48
2008	13,625.15	279.66	9,647.31	-52.45	28.94
2009	16,272.28	349.68	17,464.81	81.03	19.43
2010	20,208.02	451.93	20,509.09	17.43	24.19
2011	26,142.68	492.28	15,454.92	-24.64	29.37
2012	29,200.78	532.96	19,426.71	25.70	11.70
2013	23,956.38	387.3	21,170.68	8.98	-17.96
2014	2,4477.73	387.78	27,499.42	29.89	2.18
2015	2,2548.43	340.84	26,117.54	-5.03	-7.88
2016	25,007.14	368.46	26,626.46	1.95	10.90
2017	26,495.6	415.11	26,711.15	0.32	5.95

Source: World Gold Council and Historical Indices, BSE.

Figure 4: Quantum Index of Indian Exports and REER Index



REER base year: 2004-05=100.
Quantum Index base year: 2004-05=100.
Source: *Handbook of Statistics on Indian Economy*, RBI.

rate also depends on the import content of exports. As this share goes up, the impact will go down. The import content of India's exports has risen from 9.4% in 1995 to 24% in 2011.

While world GDP and exchange rate are the main variables influencing exports, we must also take note of many other factors that have a bearing on exports. The various trade policy measures that have been undertaken from time to time result in cutting costs and improving export competitiveness, one way or another. It is very difficult to compress them into a single quantifiable variable. But this, however, must be kept in mind in any empirical estimation.

Demand has to be supported by availability. In the first few decades after independence, domestic demand was so strong that the surplus available for export was limited. As the economy has grown, this situation has changed. However, it does happen even now that in the years of poor monsoon, exports of agricultural products suffer.

Many analysts have estimated export demand functions. This has been done at various points in time. Some of these have been analysed by this author in a recent article (Rangarajan and Kannan 2017) and updated for this article. These are given in the Appendix (p 42). Let me briefly summarise the results. In the equation relating to merchandise exports, world exports, which is a proxy for world output, turns out to be a strong variable with the coefficient being highly significant. The REER is also significant and is negatively related to exports. However, in some of the equations estimated, the REER had a negative sign, but was not statistically significant. In the case of service exports, the REER has a negative sign, but is statistically significant only at the 10% level. World exports have a significant positive sign. We broke up services into four components and tested these. In the case of software, and financial and business communication services, which constitute 75% of the total service exports, the REER was negative and significant. World exports had a positive coefficient and were significant. In the case of imports, the unit value index had a negative sign and it was significant. The Indian real GDP had a positive sign and was significant. On the factors influencing India's exports, we have no control over world exports. The only policy variable is the REER. However, it has been found that, of the two variables, the dominant impact comes from world exports or world output. Therefore, we need to examine the role that the exchange rate can play a little more closely.

Exchange Rate Policy

What should be the policy towards the exchange rate? The stated policy of the RBI is that it has no specific target and that it intervenes only to reduce volatility. This is only partially true. For example, in 2007–08 when there was a huge inflow of capital, to prevent appreciation, the RBI entered the market and bought dollars. This was responsible for the sharp increase in reserves. There are many other instances of intervention in both directions that can be cited.

In the past, when capital inflows were "passive," the exchange rate was merely determined by the level of the CAD, that is, when the purchasing power parity theory held good. With the emergence of capital flows, as an independent factor, this is not true anymore. With inflows in excess of the CAD, the nominal exchange rate may remain the same or even appreciate. In fact, if at that time the domestic inflation is higher than that of the trading partners, the REER will appreciate. in the contrary case of sudden withdrawal of capital, as happened around June 2013, the exchange rate can decline very sharply. The critical question is: in the context of very large capital inflows, what should be the stand of the central bank? If the flows are allowed to pass through the market, the currency will begin to appreciate in nominal terms even when there is a CAD. On the other hand, if the central bank intervenes and buys foreign exchange, the nominal exchange rate may not appreciate. But, in real terms, it could, if the additional reserves accumulated cause an increase

in money supply beyond the desirable level and prices rise as a consequence. If the impact of the additional reserves on money supply is to be neutralised, the authorities will have to issue bonds to absorb liquidity out of the system. But, there is a cost to it, which depends on the return on the reserves and the interest on stabilisation bonds.

The appreciation in real terms can occur because of the influence of both capital flows and higher domestic inflation relative to the trading partners. As the *Economic Survey 2015* points out, between January 2014 and February 2015, the REER of the rupee had appreciated by 8.5%. Of this, higher inflation in India relating to trading partners contributed only 2.3 percentage points, while the remaining 6.2 percentage points were accounted for by the rupee strengthening in nominal terms because of the surging capital inflows (GoI 2015). There are other years in which higher inflation has contributed more to appreciation. For example, in 2010–11, the REER rose by 8.5%. In the same period, the NEER rose by 2.8%. Thus, the bulk of the change in REER was accounted for by higher inflation relative to the trade partners.

India's REER has touched 124.45% as of January 2018. Should the appreciation of the currency really matter? Raghuram Rajan (2016) said:

> So offsetting any rise in the real exchange rate is any productivity differential we enjoy with respect to the rest of the world. Assuming conservatively that this is about 2% a year, much of the real appreciation that economists complain about is offset by productivity differentials.

Using the Balassa–Samuelson theory (Balassa 1964; Samuelson 1964) of the impact of productivity on price rise, some have come to the conclusion that the rupee is undervalued. The crucial question to ask is: Can we assume such a sustained increase in productivity as far as India is concerned, assuming the validity of the argument? In a similar vein—but on a different note—Avinash Persaud (2015) argued that on a purchasing power parity (PPP) basis, $1 was equivalent to ₹18.5 and, therefore, this meant that the rupee was more than 60% undervalued. It appears somewhat far-fetched to treat the PPP exchange rate as some kind of a market equilibrium rate.

India does have a large trade deficit, even though the CAD is low, because of the surplus on the services account. With capital flows playing a significant role in the determination of the exchange rate, it is important to neutralise the impact of capital flows and prevent the appreciation of the rupee in real terms. We must also take note that the nominal depreciation of the currency has an effect on capital flows. Foreign investors would want the return to be much higher if the currency of the country in which they are investing is depreciating. Thus, one must be conscious of the implications of exchange rate depreciation on various forms of capital flows.

It should not be forgotten that the stability of domestic prices is an important factor in stabilising the external value of the currency in real terms. Therefore, a monetary policy framework with a focus on price stability has a key role. Simply raising the nominal exchange rate to compensate for higher inflation is not the answer. The broad conclusion is that there is a need to moderate the impact of large capital inflows on the rupee so long as we continue to have a CAD. An appreciating currency will erode the competitiveness of our exports. The crucial factor is not so much exchange rate as competitiveness. The whole gamut of policy measures that the government introduces from time to time are aimed at this objective. We have not been able to take this factor into account explicitly. Exchange rate is one element in this basket of measures. An aggressive policy of undervaluation will raise the hackles of many and face much opposition. Adjusting the nominal rate to keep the real rate steady may be an acceptable strategy. Maintaining domestic price stability and improving the productivity, particularly of the traded goods sector, are other factors that have to be kept in mind.

Level of Current Account Deficit

In managing the external sector, a critical question that arises is the appropriate level of the CAD. What is the level of deficit beyond which the country should get worried? In short, is there a sustainable level of CAD? Some people may dismiss this question as irrelevant, saying that whatever level of deficit that can be conveniently financed would be appropriate. It is best to look at the issue in terms of consequences of a high level of CAD (Rangarajan 2015). As high deficits continue to accumulate, the external liabilities keep rising at a faster rate, and the outflows in terms of interest and dividends begin to rise. This has an impact on the current account itself. Therefore, one must look at interest payments and dividend payouts as a proportion of the total receipts as a measure to determine the level of comfort. Also, the CAD must be kept at a level that can be financed without undue stress. As pointed out earlier, the problem in 1991 was one of inability to finance the CAD.

India's CAD, as we have seen already, in the recent period has been on an average around 1.2% of GDP; 2011–12 and 2012–13 were serious aberrations. The debt indicators (IMF 2000) have shown improvement. The debt service ratio was as high as 35.3% in 1991. As of 2017, it was 8.3%. The ratio of foreign exchange reserves to total debt as of 2017 was 78.4% as compared to 7% in 1991 (Table 4). However, it has come down from the

Table 4: Key External Debt Indicators and Measure of Reserve Adequacy

Year	Debt Service Ratio (%)	Ratio of Foreign Exchange Reserves to Total Debt (%)	Ratio of Foreign Exchange Reserve to (Imports + Short-term Debt)	Ratio of Foreign Exchange Reserve to Imports
1990–91	35.3	7	17.8	24.2
1995–96	26.2	23.1	52	59.14
2000–01	16.6	41.7	78.1	83.67
2001–02	13.7	54.7	99.91	105.23
2002–03	16	72.5	115.18	123.92
2003–04	16.1	100.3	136.8	144.56
2004–05	5.9	105.6	109.51	126.91
2005–06	10.1	109	89.88	101.65
2006–07	4.7	115.6	93.14	107.24
2007–08	4.8	138	104.23	123.18
2008–09	4.4	112.2	72.62	82.97
2009–10	5.8	106.9	81.91	96.77
2010–11	4.4	95.9	70.11	82.44
2011–12	4.4	95.9	51.88	60.17
2012–13	5.9	71.3	49.72	59.51
2013–14	5.9	68.8	56.41	67.59
2014–15	7.6	71.9	64.03	76.25
2015–16	8.8	74.2	77.56	94.53
2016–17	8.3	78.4	78.59	96.66

Source: *Handbook of Statistics on Indian Economy*, RBI.

peak of 138% in 2007–08. The debits under investment income consist primarily of interest payments and dividend outflows. As of 2016–17, the two together amounted to $40.1 billion, which was only 9.6% of the total exports of goods and services.

Let us look at the issue from another angle: What level of CAD can be financed? A CAD of the order of 2%–2.5% of GDP would mean an absolute amount of $45 billion–$56 billion. Can this level of deficit be ordinarily financed? This required inflow constitutes only 4%–5% of the total capital flows to emerging market economies and as such should not pose a problem (Institute of International Finance 2017). The quantum will, however, increase as India's GDP keeps increasing. However, vulnerability comes from fluctuations in capital flows. Any level of CAD beyond 2.5% of GDP should ring alarm bells. In 2011–12 and 2012–13, we were somewhat complacent because of large capital flows. But, the sudden outflow in 2013 gave us a shock. Since the capital flows are influenced by a variety of factors and have a tendency to be volatile, it is best to reduce the dependence on capital flows. While it is imperative not to let the CAD go beyond 2% of GDP, we should actually work towards maintaining a much lower level so that fluctuations in capital flows do not cause distortions in the economy. However, it is important that we do not on this score abandon the process of liberalisation and go back to the bad old days of import substitution. What is needed is to create an appropriate domestic policy environment which will lead us to a lower CAD.

Foreign Exchange Reserves

Another policy issue relates to the accumulation of foreign exchange reserves. What is a desirable level of foreign exchange reserves? Reserve accumulation normally happens when countries are in current account surplus. This has not been the case with respect to India. Reserves have been accumulated because of the excess of inflows over the CAD and intervention by the RBI. Thus, the character of the reserves is somewhat different than in the case of China. The accumulation of reserves started picking up after 2001. The big jump happened in 2007–08 when the foreign exchange reserves increased from $199 billion to $310 billion. Thereafter, there was a substantial drop in 2008–09 after which reserves started moving up again. In 2012–13, despite a strong inflow, the addition to reserves on BOP basis was minimal because of the high CAD. The inflows were quite strong in 2014–15 and 2017–17. Currently, we have crossed the previous peak and touched the level of $420 billion.

Reserves serve as a buffer and make the economy withstand shocks when there are fluctuations in capital flows (Rangarajan 2015). Reserves cannot, however, solve fundamental weaknesses. It is a protection only against volatility. The adequacy of reserves is measured either in terms of imports or short-term external debt or the addition of the two (IMF 2011).

The High-level Committee on Balance of Payments in 1993 emphasised the need to take into account short-term obligations. This was long before the Guidotti–Greenspan rule was formulated. In 2007–08, India's foreign exchange reserves were 23% more than its total imports. This was an extremely strong position. In 1990, when the crisis hit us, we hardly had foreign exchange equivalent to three weeks' imports. As of end of March 2017, the foreign exchange reserves were equivalent to 97% of India's imports. Foreign exchange reserves as a proportion of imports and short-term debt stood at 79% at the end of March 2017 (Table 4). Thus, in a broad sense, the reserve adequacy is met. However, as Thailand found at the time of the East Asian crisis, reserves—however high they may be—cannot provide a shield if the fundamentals go wrong. A judicious use of reserves at the time of temporary fluctuations in capital flows can stabilise the economy and provide relief. But, it is possible to use the reserves as a tool of economic strength only when the nature of reserves change and they are built out of the accumulation of current account surpluses.

Policy on Capital Flows

Capital flows, in general, are welcome in developing economies. They all add to the productive capacity of the country. They also lead to the development of financial markets. Such flows are also viewed as vehicles for the transfer of technology and management skills. In effect, international capital markets try to distribute the available world savings among countries, with countries showing high productivity growth attracting more capital. However, the problem with capital flows is their size and volatility. When the capital flows are large and that too with a high degree of fluctuation, they have a bearing on macroeconomic stability. If capital flows are volatile or temporary, the economy will have to go through an adjustment process twice, in both the real and financial markets, once when the funds flow in and second when they flow out.

The position with respect to capital flows as far as emerging economies like India are concerned has changed dramatically over the last two decades. Prior to 1990–91, our major concern was to mobilise enough capital flows to finance the CAD. That position has changed. Thanks to the development of the international capital markets, today, emerging economies, including India, are able to attract large capital inflows. The recognition of the importance of capital flows does not preclude the need for regulating these flows, particularly at the time of the "surge" of such flows. There is a greater appreciation of this approach even among multilateral financial institutions (Ostry et al 2010).

Countries normally prefer long-term and durable funds. It is from this angle that FDI is the most desirable form of capital flows. This is true for India as well. Our own experience clearly shows the durability of the inflows in this category. We need to encourage the flow of funds under this channel. While changes in procedures will help, fundamentally, it depends on how Indian economy functions. FDI flows towards countries which grow fast in an environment of low inflation and modest fiscal deficit. All these boil down to making India an attractive investment destination. The recent changes enlarging the scope of FDI are welcome. The only caution we have to exercise is in relation to speculative flows such as investment in real estate.

Portfolio flows do fluctuate not only from year-to-year, but within the year. On occasion, they have caused severe fluctuations in the stock market. Since 2013, there have been several days on which the Sensex has fallen by more than 600 points. The cause for the tumble is not what happened in India, but what was happening elsewhere in the world. Net negative flows over the year are uncommon. However, this happened in 2008–09. In 2013, for three months in a row, there were strong outflows. Again in 2015–16, there was a net outflow $4 billion. Those are inevitable. We need to strengthen our domestic investment institutions to keep the impact nominal. Allowing foreign institution investors to invest in rupee-dominated securities is a good idea as the exchange risk is borne by the foreign investors.

Capital flows have helped India manage the CAD with ease. However, the easy availability of capital flows should not make us complacent about the level of CAD. The tail of capital flows should not wag the dog of the CAD.

There is a near-consensus on capital account convertibility. We need to proceed in steps, and cautiously. We first need to enlarge the scope of businesses to be able to function effectively in terms of raising funds and investment. Capital account convertibility should not become a route for all individuals and even business entities to freely keep funds abroad. The time for that has not come.

Conclusions

The world is entering a new phase as far as trade is concerned. Seventy years ago, it was the developed countries that were preaching the virtues of globalisation and free trade. The developing countries were then expressing concerns about total free trade. Now the tables have been turned. It is the developed countries that are turning against free trade and are moving towards protectionism. This has come certainly at a wrong time for India. It is only now that India is fully ready to be integrated with the rest of the world, even though India still has certain concerns. It is not known how far US President Donald Trump will go. He has talked about "reciprocal taxes" in relation to India and China. It will be hard for India to raise tariff walls. The recent decision of the government to raise import duties was ill-advised. Leaving aside this issue, there are still some areas of concern. The trade deficit remains high. This requires action in relation to both imports and exports.

A reference was made earlier to three categories of imports: oil, gold, and electronic goods. Electronic goods require special attention. Will electric vehicles bring about a fundamental change in the demand for oil? Will the increase in production of electricity that may be required offset some of the gains if power generation depends on imported diesel? A careful look at these areas becomes imperative. There is scope for expanding our exports base. As was argued earlier, there is a case for keeping the real effective rate from rising. The impact of capital

flows on the exchange rate needs to be neutralised. But, this by itself is not adequate. We need to increase the competitiveness of our exports, which requires among other things an efficient and well-knit infrastructure. We should not underestimate the importance of domestic price stability as a contributing factor to prevent a rise in the REER. The surpluses on the services sector will also need nurturing. Hard work is needed to maintain our leadership in information technology. A significant part of the invisibles comes from transfers, which will also depend upon the state of the world economy. We have so far managed our BOP well. However, we need to be conscious of our vulnerabilities in relation to imports and exports and this will require advanced action. There is no doubt that a well-managed external sector can be an important driving force of economic growth.

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Appendix: Estimated Equations

Table 1: Merchandise Exports

(i) Estimated regression equations (dependent variable—Log of Export Quantum Index)

Variables	(1)
ln REER	-1.17** (-2.48)
ln WOREX	0.77*** (4.75)
Constant	5.74** (2.49)
Time trend	0.049*** (4.90)
R-squared	.9793
Sample period	1991–92 to 2016–17

Export Quantum Index with 1999–2000 = 100 (fiscal year).
REER (Real Effective Exchange Rate)—36 countries' export-based index with 2004–05 = 100 (fiscal year).
WOREX (World Export Index)—value of world exports deflated by CPI–US, 1991 = 100 (calendar year).
Figures in brackets indicate t values.
*** significant at 1% level, ** significant at 5% level.

Table 2: Service Exports

(a) Estimated regression equations (dependent variable—Log of Service Exports of India)

Variables	(1)
ln REER	-1.155* (-1.81)
ln WSE	2.06*** (6.80)
Constant	-1.11 (-0.22)
Time trend	0.039** (2.15)
R-squared	.9889
Sample period	1992–93 to 2016–17

Service Exports—value of aggregate service exports of India deflated by CPI–US (fiscal year).
REER (Real Effective Exchange Rate)—36 countries' export based index with 2004–05=100 (fiscal year).
WSE (World Service Exports) deflated by CPI–US (calendar year).
Figures in brackets indicate t values.
*** significant at 1% level, ** significant at 5% level, * significant at 10% level.

(b) Estimation results for major categories of service exports where dependent variable is (1) travel, (2) transport, (3) insurance and (4) miscellaneous (software, financial, business, and communication services)

Variables	(1)	(2)	(3)	(4)
ln REER	2.503*** (3.48)	1.64** (2.26)	0.929 (0.78)	-4.189*** (-3.00)
ln WSE	1.504*** (4.38)	2.54*** (7.32)	2.72*** (4.81)	1.95*** (2.94)
Constant	-24.81*** (-4.31)	-35.58*** (-6.11)	-37.07*** (-3.90)	-.624 (-0.06)
Time trend	-0.002 (-0.14)	-0.045 (-2.13)	-0.036 (-1.05)	.120*** (2.96)
R-squared	.9676	.9748	.9488	0.9719
Sample period	1992–93 to 2016–17	1992–93 to 2016–17	1992–93 to 2016–17	1992–93 to 2016–17

All dependent variables have been deflated by CPI–US and are on fiscal year basis.
Figures in brackets indicate t values.
*** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 3: Merchandise Imports

(a) Estimated Regression Equation (dependent variable—Log of Quantum Index of Imports)

Variables	(1)
ln RGDP	2.86*** (8.82)
Ln UVI	-1.16*** (-5.02)
Constant	-20.22*** (-8.53)
R-squared	.9486
Sample period	1991–92 to 2015–16

All data are on fiscal year basis.
Import Quantum Index with 1999–2000 = 100.
RGDP Index for Real GDP of India with 1991–92 = 100.
UVI Unit Value Index of Imports with 1999–2000 = 100.
Figures in brackets indicate t values.
*** significant at 1% level,
** significant at 5% level.

(c) Estimated regression equation (dependent variable—log of Quantum Index of Imports)

Variables	(1)
Ln UVI	-1.03*** (-5.15)
Ln WPI	1.72*** (3.04)
Ln RGDP	1.25** (2.09)
Constant	-11.73*** (-3.40)
R-squared	.9643
Sample period	1991–92 to 2015–16

All data are on fiscal year basis.
Import Quantum Index with 1999–2000 = 100.
RGDP Index for Real GDP of India with 1991–92 = 100.
UVI Unit Value Index of Imports with 1999–2000 = 100.
WPI Wholesale Price Index with 1999–2000 = 100.
Figures in brackets indicate t values.
*** significant at 1% level, ** significant at 5% level.

(b) Estimation results for major categories of imports where dependent variable is log of quantum index of 1) food and live animals, 2) crude materials, 3) mineral fuels, 4) chemicals, 5) manufactured goods, and 6) machinery

Variables	(1)	(2)	(3)	(4)	(5)	(6)
ln UVI	-0.744***	-.397**	0.09	-2.951**	-.751**	-1.339***
	(-3.38)	(-2.13)	(0.54)	(-2.27)	(-2.60)	(-9.97)
ln RGDP	2.01***	1.85***	.83**	2.13***	2.144***	3.052***
	(7.68)	(10.11)	(2.59)	(2.99)	(8.07)	(14.59)
Constant	-13.32***	-13.14***	-4.75*	-8.60	-14.65***	-21.10***
	(-7.21)	(-11.64)	(-1.80)	(-0.80)	(-9.69)	(-12.65)
R-squared	.87	.9686	.9288	0.9641	0.969	0.928
Sample period	1991–92 to 2015–16	1991–92 to 2015–16	1991–92 to 2015–16	1991–92 to 2015–16	1991–92 to 2015–16	1991–92 to 2015–16

All data are on fiscal year basis.
Figures in brackets indicate t values.
*** significant at 1% level, ** significant at 5% level, * significant at 10% level.