Comments and Discussion

Rajnish Mehra: Ila Patnaik presents an excellent case study of a country in the process of moving from a regime of strict capital controls to one with a relatively open capital account. The degree of capital account control in India is very different today from what it was in the early 1990s. As a measure of openness, the differential (premium) between the "unofficial" and official rupee-dollar rate has dramatically declined over the past fifteen years. It is now less than 0.5 percent.

The paper begins by citing convincing evidence that the rupee is pegged to the U.S. dollar. Taking Robert Mundell's 1961 insight into the "impossible trinity" as a starting point, Patnaik goes on to argue that the consequences of a pegged exchange rate are likely to be very different with and without capital controls. Specifically, a fixed exchange rate coupled with free capital movements implies a loss of monetary policy independence. Monetary policy in such a setting is entirely determined by the exchange rate system. As India continues on the path of eliminating currency controls, it appears that implementing the pegged regime will increasingly reduce its monetary policy autonomy.

Patnaik identifies two empirically significant periods during the years from 1990 to 2003, when there was a sharp increase in reserves: June 1993–November 1994 (Episode I) and August 2001–present (Episode II). The metric used is the observed increase in the gross reserves measured in dollars.

I will present a somewhat different perspective. Rather than focusing on the level of foreign reserves, I examine the data using the relative shares of foreign reserves to GNP. Here, figure 17, which displays the gross level of foreign currency assets, is the counterpart of figure 2 in the Patnaik paper, except that I have used data expressed in rupees, whereas her figure 2 is expressed in dollars. To the extent that the rupee-dollar rate has fluctuated, the figures are not affine transformations of each other. A potentially more useful way of looking at these data is captured by figure 18, which graphs

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FIGURE 17. Gross Level of Foreign Currency Assests

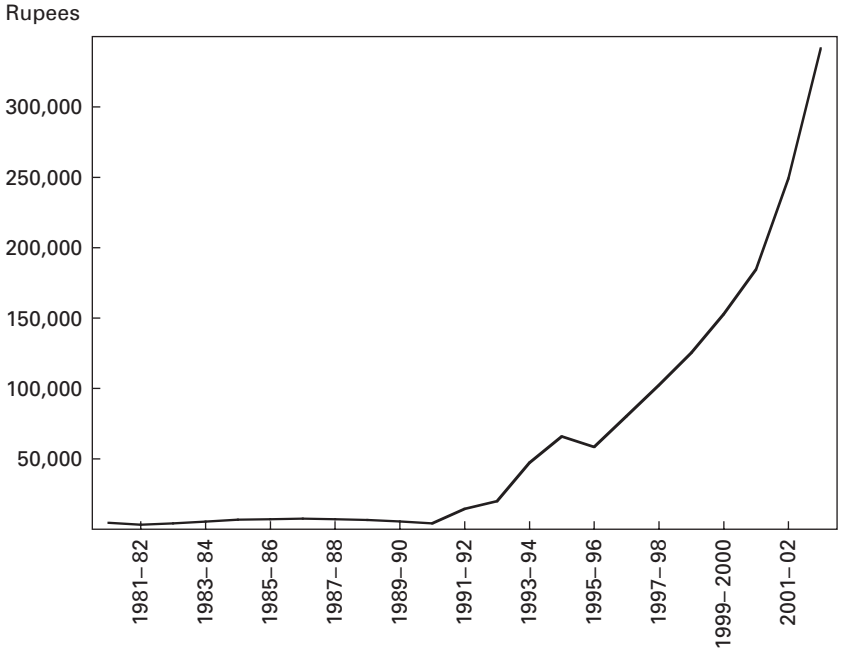
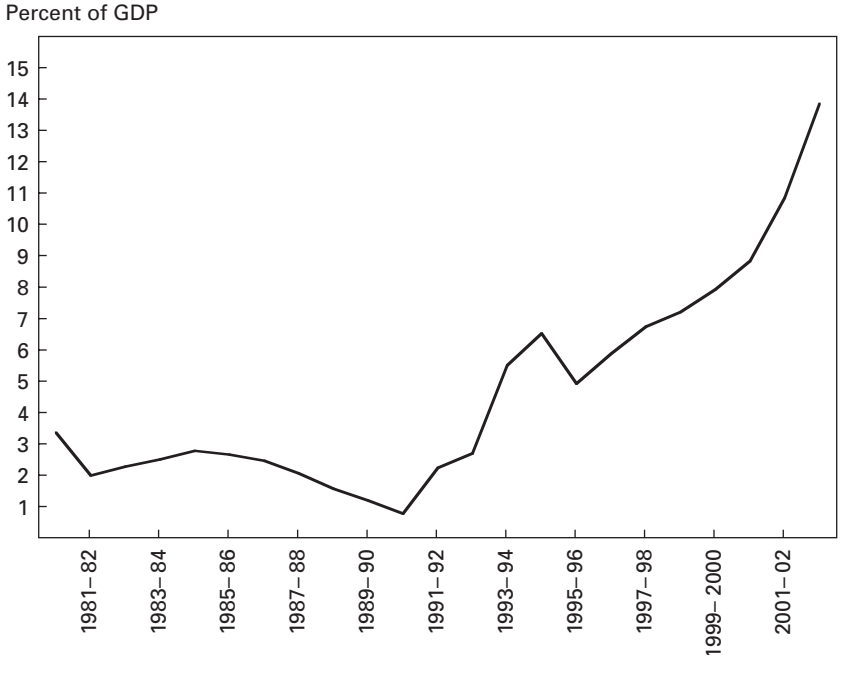


FIGURE 18. Foreign Currency Assests as Share of GDP, 1980–2003



foreign currency reserves as a share of GDP.[1] It is clear that the post-1990 period is very different from the pre-1990 period. After 1990, two periods of rapid change in reserves stand out: 1990–95 (+5.75 percent of GDP) and 1996–present (+8.93 percent of GDP).

While these time periods do not correspond precisely to those identified in the paper, the exact periods are unimportant for the observations made there. Patnaik is agnostic about the costs and benefits of a fixed exchange rate regime and hence does not make a policy recommendation. In my discussion below I will address this and other related issues.

Clearly, a part of the post–1990 reserve accumulation is a rational response to the foreign exchange crisis in 1990–91. Demand for reserves held by Central Banks is similar to the demand for inventories and, like optimal inventory accumulation, depends on: *demand uncertainty* (+), *reorder costs* (+), *stock-out costs* (+), and the opportunity *cost of funds* (−).

Various heuristics have been proposed for optimal reserve accumulation. "Import cover," defined as twelve times the ratio of reserves to merchandise imports is one such heuristic. It is an ad hoc proxy for "demand uncertainty."[2] The RBI achieved this target in mid-2002.

The RBI attained this level of reserves by engaging in a classic sterilization policy—buying foreign currency and bonds and offsetting these purchases by issuing domestic bonds, while leaving M0 remarkably stable at about 15 percent of GNP, as shown in figures 19 and 20. (Figure 19 is the counterpart of figures 6 and 14 in Patnaik's paper, with the modification that I have expressed all quantities as a share of GDP.)

What are the costs of such a policy? This clearly depends on what is used as a benchmark for the "optimal level" of reserves. Using "import cover" as a measure of reserve adequacy, anything more than about 10 percent of GDP would classify as an unnecessary "cost."

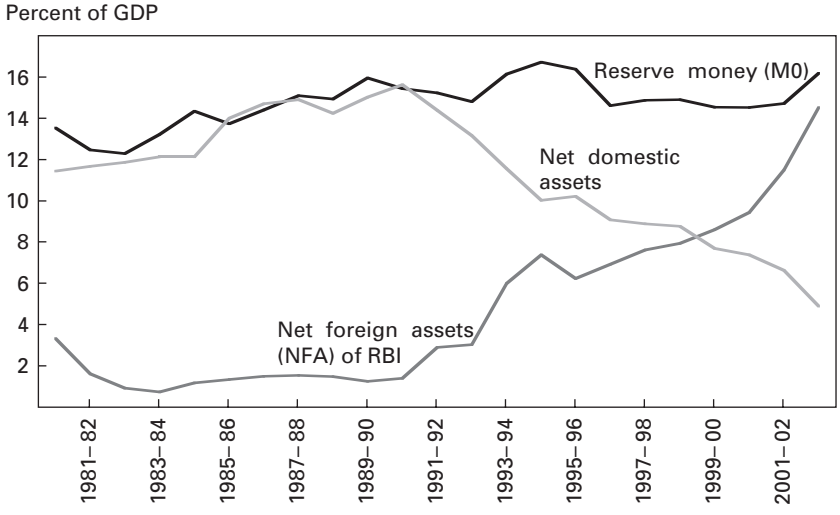
Getting an estimate of this cost requires an estimate of the real interest rate differential between U.S. and Indian assets held by the RBI. As of mid-2002, about 95 percent of foreign assets held by the RBI were in the form of liquid assets. Since theoretically the equity premium is negligible, an estimate for the equilibrium risk free rate along a balanced growth path is

$$r = \rho + \gamma E(dc/dt),$$

1. These series appear to co-integrated.

2. "Stock out" costs are harder to measure but these became very real in the case of India in 1990–91. An adequate import cover will ensure that these costs are never incurred.

FIGURE 19. NFA, NDA, and MO as Share of GDP, 1981–2003



where r is the risk free rate, ρ is a measure of the time preference, γ is a measure of risk aversion, and $E(dc/dt)$ is the expected growth rate of consumption.

For India, a reasonable calibration results in a figure of about 6 percent. For the United States, this figure is about 4 percent. Thus an estimate of the cost of the current policy of holding reserves more than 10 percent of GNP, because of the differential yield on domestic and foreign assets, is between 0.1 percent and 0.2 percent of GNP annually. An additional cost arises because of the increase in the domestic cost of capital and the consequent effect on corporate investments and valuations. Although these numbers are not excessively large at the moment, the cost of such interventions can, and will, mount in the future. In addition, potentially more serious costs may arise because of the distortion of price signals, as discussed below.

Implications for Equity Markets

Without appreciation of the rupee, Indian stocks will appear progressively cheap by international standards. Furthermore, the inevitable speculation about future appreciation may result in an influx (and subsequent withdrawal) of portfolio investments by foreign institutional investors. This process may already be under way and could impose a major cost, as it could destabilize financial markets. A glimpse of such a scenario was seen in the sharp decline in the stock market on the day of the Congress-led gov-

FIGURE 20. Market Value of Equity as Share of GNP

ernment takeover in May 2004. Figure 20 shows that Indian equity valuations are again comparable to their level during the "tech bubble," in sharp contrast to those in other developed capital markets, which are well below their pre-crash levels.

Issues of Interest Rate Differential Parity and Forward Contracts

Selective restrictions on different players can lead to undesirable outcomes and skewed incentives. For example, a situation such as that depicted in Patnaik's figures 4 and 10 cannot arise unless investors have some restrictions on them. For the price of forward contracts to be different from that implied by the interest rate differential parity, there have to be restrictions such that no player has the ability both to buy and sell local currency *and* at the same time to buy and sell foreign currency in unlimited amounts. Domestic players may have their ability to borrow foreign currency restricted, while foreign players have their ability to sell local currency restricted.

To illustrate, if the rupee spot price was 50 per dollar, the one-year forward price implied by the interest rate differential 55 per dollar, and

forward price 53 per dollar, foreign investors, in the absence of any restriction, would avail themselves of a "free lunch": borrow dollars, buy rupees spot, and sell rupees one year forward.

The difference between the forward price and that implied by interest rate parity would be a function of two factors. The first is market expectations of future movements of spot. The second is the relative strength of the restrictions that tend to strengthen the currency forwards relative to spot (for example, foreign borrowing restrictions on domestic players) compared to the restrictions tending to weaken it (for example, restriction on foreign players' forward buying of domestic currency).

It is difficult to disentangle these two effects. However, I believe that the forward prices clearly contain some information, not necessarily about the future spot movements but about market players' expectations for such movements, and that these could be exploited by coalitions not subjected to restrictions. For example, in China (domestic) coalitions of individual agents subject to different partial restrictions are able, as a unit, to circumvent most restrictions.[3] Clearly this does nothing to enhance investor confidence.

Concluding Comments

There is a vast literature on the merits of different exchange rate regimes with which the reader is undoubtedly familiar. I believe that the operating characteristics of flexible exchange rate regimes have been shown to be superior to those of fixed rate regimes, particularly in the long run. Economic history reinforces these conclusions. Countries that had abandoned the gold standard typically recovered quicker after the Great Depression.[4] A disproportionate number of recent financial crises have involved countries with fixed rate regimes. (Stanley Fischer's 2001 Lionel Robbins Lecture at the London School of Economics elaborated well on these issues). Under floating rate regimes, price signals are less distorted, resulting in better investment and allocation decisions. In China, with big capital inflows and no currency float, the influx of capital has apparently driven the cost of capital for the "well connected" to zero. This may result in a misallocation of capital and provides no market discipline for industry to gradually become more competitive. I stress these aspects especially because in

3. These observations arise from my conversations with Chinese doctoral students in the United States.

4. Eichengreen and Sachs (1985).

developing countries there has been a tendency to emphasize the development of the domestic industry.

Recent actions of the RBI suggest that it wishes to avoid the financial excesses that many observers believe may shortly plague the Chinese economy.

Indira Rajaraman: Ila Patnaik contrasts two episodes of foreign exchange surge in India. Episode I covered a fifteen-month period during 1993–94. Episode II began in August 2001 and finally came to an end in May 2004. Patnaik contrasts the first, moved by a capital inflow surge, with the second, which she characterizes as having been initiated by a current account surge. She sees the attempt to hold the currency value stable in the face of the surge, using sterilization, as having seriously eroded monetary policy autonomy.

The evidence in favor of Patnaik's thesis that Episode II was precipitated by a current account surge is presented in table 6. Although it is true that the current account balance went from negative in 2000–01 to positive in 2001–02, at a time of stable net capital inflows, there were convulsions within the capital account in these two years that are not shown in the table. I present in table 9 the latest figures for the current and capital accounts over the years 2000–01, 2001–02, and 2002–03 (which differ from the unrevised figures in table 6 of the paper). It is clear that while investment inflows, both direct (FDI) and portfolio (FII), remained largely stable between 2000–01 and 2001–02, net loans from abroad declined very sharply indeed, with a sharp corresponding increase in banking capital. This increase in turn consists of two components, bank deposits in special schemes for nonresident Indians (NRI deposits) and other inflows through commercial banking channels. While NRI deposits remained stable over all three years, other commercial banking inflows increased sharply, from negative $1.5 billion in 2000–01 to positive $2.8 billion in 2001–02 and further to $5.4 billion in 2002–03. The increase in banking inflows by $4.3 billion in 2001–02 relative to the previous year was as large as the turnaround in the current account. In the face of this evidence, it is difficult to characterize Episode II as having originated in the current account. The commercial banking channel is subject to very detailed regulatory restrictions, as the author states quite clearly in discussing table 3. That table gives a misleading picture of the magnitude of these flows by comparing 2002–03 to 1991–92, leading the author to conclude that the most controlled component of capital inflows, through the banking channel, has shrunk over the years as a percent of GDP.