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The Rise of the Indian Economy: Fiscal, Monetary and Other Policy Challenges[1]

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1. **Preamble**

It is an honour for me to address the Italian Economic Association. Thanks to the common academic grazing ground provided by the major universities in, especially, England there has been a long history of collaboration and cross-fertilization of ideas among Italian and Indian economists. Though I did not study at the main common pasture, Cambridge University, I have, over the years, interacted and collaborated with several Italian economists; had a book translated into Italian[2]; spent a summer as Visiting Professor at the University of Siena, staying at the Santa Chiara Scuola Superiore, from where, to open my window was to be transported to the fifteenth century. Not surprisingly, today's occasion is a special one for me.

The plan is to present a paper from the dual perspective of a researcher and a policymaker, by using insights from my own experience in academe and the world of policy. The paper brings analytical economics to bear on some of the central economic policy challenges faced by contemporary India. The main feature of the Indian economy that stands out over the last decade and a half is the surge in the GDP growth rate, alongside rapid globalization of the economy. Globalization has necessitated a major shift in the way we think about policymaking, be it monetary policy for controlling inflation, central bank interventions for managing the exchange rate or fiscal policy for promoting growth. Accordingly, these topics constitute the focus of this paper.

To provide a backdrop for the reader unfamiliar with the India economy and its contemporary dilemmas, I begin with brief descriptions of where India stands today (section 2) and how it came to be where it is (section 3). Thereafter, sections 4-6 form the core of the paper, entering into contemporary controversies on fiscal policy, monetary policy and exchange rate management. Section 4 constructs a new model on the role of fiscal guarantees in promoting infrastructural investment when there are strategic complementarities across sectors. The last section goes beyond these topics and, in fact, beyond economics, to comment on the social and political foundations on which economic growth occurs. It is a section of motley ideas on the institutional foundations of economic

[2] *Ele Bele*: *India e le illusioni della democrazia globale*, Laterza and Figli, Rome.

development, which traditionally get omitted from discourses in economics and economic policy, at a great cost to the quality of policymaking.

2. **India Today**

Just as in the wake of a major earthquake, new lands, lakes and geological formations show up, the financial crisis and Great Recession of 2007-09 is a harbinger of some new arrivals on the global economic block. China, Brazil, Indonesia, South Africa, India and a few other nations are adding their might to driving the global economy in a way that could not have been imagined a few decades ago. This did not happen overnight, but the world's awareness of this occurred following the disruption of the recent global recession. Of these new arrivals, no other nation's rise is as surprising as that of India[3].

We have known from 1978, if not 1949, that China would take its place in the global roundtable. Brazil, South Africa and Indonesia are already moderately well-off and it was simply a matter of time before they would begin to get industrialized. India, on the other hand, was the poor giant, which showed little signs of movement till the early nineteen nineties. For India the change, in terms of presence in the global scene, came quite suddenly. In 1990, India's exports plus imports as a percentage of GDP was 14%. By 2010-11 this had risen to 36.5%. During this same period, India's service exports rose from negligible to 12.5% of GDP. Up to 1991 for nearly two decades, India's foreign exchange reserves would hover around US$ 5 billion. Over the next decade and a half it rose to around US$ 300 billion. Most remarkable was the rise of the Indian corporations, which barely ventured out of the Indian cities and towns, but have over the last decade been investing internationally, including in several industrialized nations. In most recent years there is more foreign direct investment going from India to UK than the other way around.

If, even a decade and a half ago, someone described India as a significant engine of global growth, she would be laughed out of court. As India approached

[3] Of the rise of the emerging economies, the most dramatic story is that of China and this has large implications for the global landscape and the nature of policymaking in industrialized nations (see Spence, 2012, Zagha, 2012). The basic facts pertaining to India's 'arrival' are discussed in Basu (2008).

half a century since its independence, it was being praised for its democracy, vibrant media, cultural openness; but, as an economy, it was all but written off. Things began to change in the early nineties. In 1991, the first Gulf War precipitated one of India's worst Balance of Payments crisis, with per capita income growth stalling to around zero. As often happens, this turned out to be a blessing in disguise, enabling the nation to undertake major economic reforms which would not have been feasible without a crisis. Growth picked up in 1994, hit a road block in 1997 as a consequence of the East Asian economic crisis and picked up once again from 2003. By 2005, the Indian economy was growing at around 9.5% per annum and the perception of India, in India and in the international media changed.

It is now routine to have India described as an engine of global growth. In terms of GDP, it is, of course, by virtue of its large population, one of the largest nations in the world. What is new is that, in terms of growth rate, over the last decade and a half it has been among the fastest nations in the world. It is beginning to participate and contribute in global fora, such as, the G20, the IMF and the World Bank.

Yet, that India will join the select list of industrialized nations of the world is by no means a foregone conclusion. While it has performed remarkably well over the last decade and a half, it has to maintain this growth momentum for another 30 years to be described as industrialized. To achieve this it will have to overcome several challenges, undertake major reforms and keep the nation politically stable. I would like to take the opportunity of the invitation to give a keynote address to investigate, briefly, what gave rise to this unexpected expansion of the Indian economy and, more importantly, to discuss some policy challenges that India faces. While there are many challenges that the nation faces, for the purposes of this paper I shall focus mainly on fiscal and monetary policies and, further, taking advantage of the academic audience, I would enter into some analytically tricky questions which usually get left out from policy debates.

To discuss India's development without addressing issues of governance and bureaucratic decision-making is to leave a caveat. A large fillip can be added to India's growth and our fiscal and monetary policies can be vastly more effective if the nation can address the issue of governance and bureaucratic efficiency.

When I went on leave from Cornell University and joined the Indian government in 2009, my wife also returned to Delhi and took up a visiting professorship in a university. Since then, for a few days, every month I hear her say how she is busy "trying to get her salary." The word "trying" in the context of getting one's salary would be baffling in most societies. It is not surprising that India ranks low in terms of the "Ease of Doing Business" statistic that the World Bank now routinely collates and publishes. It is a testimony to the power of India's growth engine that, despite this governance drag, it has had such outstanding growth over the last decade and a half. But clearly this is one area that needs reform. This is too large a topic to go into in this paper which is essentially focused on monetary and fiscal policies. However, the last section is devoted to remarking briefly and somewhat idiosyncratically on this subject.

3. **The Triggers of Change**

From the time of India's independence in 1947 till around the mid-seventies the Indian economy, measured by GDP, grew at an annual rate of approximately 3 to 3.5%. Since population for a large part of this time grew at over 2%, real per capita income had a growth rate of barely 1.5%. From 1975 to 1980 was a period of turbulence with growth spiking to 9% but also plunging into negative territory. A sustained rise in growth seemed to occur from the early 1980s as India moved to an average annual growth rate of just over 5%.

The serious break came, as just mentioned, with the reforms of 1991-93. The First Gulf War precipitated one of the deepest Balance of Payments crises for India and in the wake of that came the most far-reaching reforms that India had seen since its independence. The effect of this was quick. From 1994, India grew for three consecutive years at around 7% per annum. The East Asian crisis of 1997 slowed down India, but it was evident that the reforms had moved India to a higher growth path.

What were the triggers of growth? The proximate trigger was the reform of 1991-93, when India's notorious industrial licensing system was revoked and trade and foreign exchange restrictions were removed. Further, the perception on the part of both the US and China that they were heading towards a risky two-

polar world, where these two nations would confront each other, made India's rise seem more acceptable and gave India a political advantage which India did not have earlier.[4]

There were, however, other preconditions, going further back into India's history, which prepared the grounds for the triggers to be effective. Critical among these were India's savings and investment rates, which used to be very low till the late 1960s, rose once in the early 1970s, and then sharply after 2000, crossing the 30% mark in 2004. As per latest statistics, India's investment rate (as a percentage of GDP) is 35.1%. According to the Indian Planning Commission's calculations, the capital output ratio is 4.1. This, by the familiar Harrod-Domar calculation, gives a growth rate of 8.56 (= 35.1/4.1)%. So India's growth of over 8.5% from 2005 was no surprise.

Second, even while India did poorly in terms of basic literacy, it had over-invested in higher education through the 1950s, 60s and 70s, producing, for instance, more engineers than the nation could absorb. This, unwittingly, turned out to be a reservoir of talent that could be utilized when Silicon Valley in the US took off with its large appetite for skilled labor. India became the dominant supplier of professionals to the US, cornering over 50% of the H1B visas given out by the US in most years. This, in turn, sparked off supply chains initially from Bangalore but later from several Indian cities, resulting in spectacular growth in the nation's services sector and through that in the entire nation. These sudden factors launched India to the global scene faster than may have been anticipated earlier. The nation is now not only among the more vocal members of the IMF and the World Bank, but also a part of G20 nations, giving it a large global role. Moreover, within the G20 nations, India is treated as belonging to the systemically important seven.

The question that arises is whether India can play the role that has been so quickly thrust upon it. In this connection the first concern is whether India can keep up the rapid growth that the nation witnessed from 1994 and especially from 2005? Currently, there is a slowdown on but that is not a matter of my

[4] A recent, engaging account of the scope for collaboration between the economies of India and China occur in Palit (2012).

concern in the present paper. This is part of the global downturn and in all likelihood would abate with the easing of global recessionary tendency. The question that I want to raise is how India can ensure a high medium to long-run growth.

Much has been written in general on this subject.[5] But let me here focus on one critical input for high growth—fiscal policies for higher infrastructural investment, which is a vital ingredient. The path is fraught with risks. Run up excessive deficits, and a crisis can have the debt-GDP ratio spiral upwards as happened in several Eurozone countries in recent years and threaten a crash. Be excessively cautious and you can remain trapped in a state of stagnation. The next section spells outs the challenges India and for that matter any emerging economy about to get on the turnpike faces. I use a somewhat novel theoretical construct to make my argument on this. While in the remainder of the paper I do touch on other arguments of practical policy importance, the central analytical arguments of this paper occur mainly in the three sections that follow.

4. Infrastructural Investment and Government Guarantees

The crux of growth is investment and, in particular, infrastructural investment. A critical question that India faces at this juncture is how to step up infrastructural investment. Recognizing that this is more a matter of financing than bricks and mortar, the Indian Planning Commission has talked about a target of one trillion dollars of infrastructural investment during the 12th Five-Year Plan, 2012-17, with about half of this being raised from the private sector. It is clear however that the success of raising this will depend a lot on the government's policy. Should government get involved in raising private sector money for this or should it follow a hands-off policy? Should the government give guarantees or comfort letters[6] to investors considering putting their money in infrastructure?

[5] See, for instance, Ahluwalia, 2011; Government of India, 2011, 2012.

[6] We know, in retrospect, that it is foolish to draw too sharp a distinction between a guarantee and a comfort letter. Under certain legal interpretations, a comfort letter becomes like a guarantee. It is not surprising that in raising investment a comfort letter from government is so effective (Reddy, 2002). For my argument here, the distinction is however not important. All I want to show here is how there are situations where giving multiple guarantees is less onerous on government than giving a single guarantee.

We do know that such guarantees facilitate investment greatly but of course it also places a responsibility on the government. This is a subject that has been heavily debated in India and abroad; the present paper tries to shed new light on this.

When trying to undertake large investment projects, reckless governments often used to give guarantees to investors, which would, in effect, assert that in the event of the project going bankrupt the government would pay off the investor. Experience shows that when a government (with the ability to print money) gives a guarantee, investors come in galore to put their money on projects. We have, however, come to learn now that this may not be such a good strategy for governments. Giving such a guarantee may do nothing to the government's fiscal arithmetic immediately but it amounts to undertaking future fiscal expenditure. Since there is always the probability that such a guaranteed project will go belly up in the future, each such guarantee amounts to a certain additional expected expenditure by the government in the future. Hence, such guarantees, given recklessly, can lead to unsustainable fiscal deficits in the future with all their attendant problems such as inflation, collapse in investment and ultimately, economic recession. India's fiscal history, originally noted for conservatism, became profligate in the late 1980s. Thereafter it has been on a path of consolidation with occasional lapses (for a brief account, see De, 2012). One way in which these lapses occur is by giving future assurances, which do not show up on paper immediately.

For this reason, governments were repeatedly warned by international standard bearers not to give guarantees to investors, especially for private sector initiatives. While this warning is a valid one and governments ought to heed it, there are circumstances where some strategic and well-designed guarantees or comfort letters from the government can be desirable in the overall interest of the nation. This can happen in a buoyant nation on the verge of a takeoff considering an expansion in a number of infrastructural projects.

The gist of the argument is simple. Among infrastructural projects there is typically a lot of positive externality (see Murphy, Shleifer and Vishny, 1989,

Paternostro, 1997; Oh, 2011; Government of India, 2012). The new road that will be operated by a tolling system is more likely to be successful if the residential township at the end of the road comes up; and the residential township being contemplated by the developer is more likely to be successful if the road gets built. Government, by giving some carefully orchestrated guarantees to investors can ensure that all these projects will come up, thereby raising the probability of success of all these projects. What follows is a simple model to illustrate this idea.

Let us suppose that there is a set $X \equiv \{1,...,n\}$ of *n* potential infrastructural projects. Each project is run by an independent private entrepreneur. To undertake the project entails an upfront cost of *C* (*>0*). The project will yield results after a longish time. If it succeeds, it gives a return of *S* and if it fails, it gives *0*.

Let *p* denote the probability of this project succeeding. I shall assume that the probability of success depends on how many projects in *X* are undertaken. If $m \leq n$ projects are undertaken then the probability of success is given by *p(m).* It is possible to argue that, quite apart from its dependence on *m*, *p* could vary merely by the fact of government giving a guarantee. Suppose an international investor puts money in a private Indian firm building an airport. The investor, who has little legal jurisdiction--certainly not one without considerable cost--in India, could face a high risk of default. If, on the other hand, the government of India gives a guarantee, then by virtue of the government's power, the probability of default could decline. I believe this is a valid argument but I shall put this argument aside in the present paper.

The complementarily between these infrastructural projects are captured by the assumption:

$$p'(m) > 0 \qquad (1)$$

Hence *p(1)* is a low-valued number in the interval [0,1], denoting the probability of an infrastructural project succeeding when it is a solitary project. But if all projects are undertaken, the probability of each project succeeding, *p(n)*, is a higher-valued fraction.

As explained earlier, these are large projects and *C* is a very large sum of money. Entrepreneurs do not have this kind of money to invest. So they turn to private investors for angel or start-up money. It is also being supposed that *C* is sufficiently large that no single investor can invest in all *n* projects. Purely for mathematical ease let me assume that each private investor can invest in at most one project. The investor's opportunity cost of investing money is captured by a nominal interest rate of $i(\geq 0)$. Hence, for an investor, it is worth investing money if the project yields more than *(1+i) C*.

To make sure that the project, if successful, is viable, I assume

$$S-(1+i)C>0 \qquad (2)$$

Assuming that the money that an investor gives to an entrepreneur is a non-recourse loan, the maximum that the investor can expect to earn when he alone makes the investment is given by

$$Sp(1)-(1+i)C$$

To make the problem interesting I shall assume this is negative. Hence, without a guarantee, no investor will, individually, choose to invest.

Now suppose government gives a guarantee that, if the project fails, it will pay the investor *(1+i)C*. Clearly, in that case it is viable for the investor to invest, since the total return to the entrepreneur and the investor is:

$$\begin{aligned} &p(1)S+(1-p(1))(1+i)C-(1+i)C \\ &=p(1)[S-(1+i)C], \end{aligned}$$

which, by (2), is positive.

However, if the government gives this guarantee to a single project, the government's expected future expenditure is given by:

$$(1-p(1))(1+i)C$$

This is the expected future expenditure that government has to incur. It is right for analysts to warn that no government must ignore this, simply because this expenditure occurs in the future.

Now consider the case where the government, instead of giving a guarantee to one investor for one infrastructural project, decides to give guarantees to *m* investors. In that case the government's expected expenditure in the future is given by:

$$m(1-p(m))(1+i)C \equiv G(m)$$

Claim *It is possible that as m increases G(m) declines.*

In other words, what is being claimed is that it is possible that as government gives guarantees to more projects the future cost to the government could actually decline. Given our assumption (1), the above claim is easy to verify.

For the simplest example to demonstrate consider a case where *p(n)=1*, that is, projects do not fail if all infrastructure projects are started simultaneously. In that case *G(n) = 0*. Since $G(1) = (1-p(1))(1+i)C$ and $p(1) < 1$ by (1), it follows that $G(1) > 0$. Hence, $G(1) > G(n)$.

This is a valid result but a dangerous one. It must, by no means, be construed as justification for governments to rush into giving reckless guarantees. Government has to first check if the above claim is empirically valid and then select a careful cluster of complementary projects and give well-designed guarantees. Actually, if government can credibly signal to entrepreneurs and investors that it is about to orchestrate a major investment effort it can get away by giving less than the full guarantee (of $(1+i)C$) and still have investors coming in and entrepreneurs staring up new projects. The mutual reinforcement of beliefs makes each project more likely to succeed and so entails smaller assurances for investors to find it worthwhile to undertake the investment.

This is the kind of gamble that India has to consider taking, as it ponders whether to make the next Five-Year Plan the big leap to industrialization. This is the kind of big heave that Deng Xiaoping's China undertook in the late 1970s with

success. But it is sobering to recall that there was also the Great Leap Forward that Mao Tse-Tung initiated in 1958, which ended in disaster. History makes suggestions but rarely gives a road map.

5. **Managing Inflation and Growth**

In managing the nation's macroeconomic health, fiscal policy goes hand in hand with monetary policy. Over the last two years, with all-commodity inflation raging at close to, and occasionally above, the 10% mark and food inflation breaching even the 20% mark on some months (see Table 1), it has indeed been a challenge synchronizing and running both sets of policies.

By the standards of several emerging economies, especially the Latin American ones and even South Korea of the 1970s, this round of inflation in India is not particularly high. But, given India's record of relative price stability over dozen odd years, preceding 2008, and the electorate's sensitivity to prices and especially food prices, the fight against this round of inflation is taken very seriously in the nation. As Table 1 shows, food price inflation, during the current inflationary period, crossed the 20% mark twice—in December 2009 and February 2010. This is politically unacceptable, and rightly so because so many people live below the poverty line that the ones whose incomes may not rise in step with inflation can find their basic needs unmet.

For this reason, India's growth story at least in the short run depends critically on inflation[7]. There is a felt need that, if to bring down inflation, growth in the short run needs to be compromised then we should do that. It is important therefore to bring down inflation as quickly as possible and with as little damage to the growth and employment story as possible. In the absence of this, the kind of fiscal initiative discussed in the previous section to boost infrastructure will remain ideas on paper.

[7] In this paper the focus is on macroeconomic policy and, in particular, the interface between growth and inflation. This is not to deny that a lot of the pertinent policies concerning growth are rooted in microeconomic matters, such as the need to unlock resources, like land, inefficiently held and under-utilized (Singhi and Malhotra, 2012).

Table 1. Inflation in India, 2008-11

	All Commodity	All Food *
Apr-08	7.86	6.63
May-08	8.20	7.30
Jun-08	10.89	8.00
Jul-08	11.15	7.78
Aug-08	11.12	7.82
Sep-08	10.78	9.15
Oct-08	10.66	10.64
Nov-08	8.65	10.97
Dec-08	6.68	10.42
Jan-09	5.87	12.14
Feb-09	3.61	9.10
Mar-09	1.65	7.31
Apr-09	1.21	8.76
May-09	1.45	9.37
Jun-09	-0.39	10.42
Jul-09	-0.31	11.10
Aug-09	0.54	12.97
Sep-09	1.40	13.21
Oct-09	1.79	12.66
Nov-09	4.73	17.17
Dec-09	7.15	20.21
Jan-10	8.68	19.80
Feb-10	9.65	20.22
Mar-10	10.35	18.50
Apr-10	10.88	16.09
May-10	10.48	15.85
Jun-10	10.25	15.30
Jul-10	9.98	14.31
Aug-10	8.87	11.06
Sep-10	8.98	11.49
Oct-10	9.08	10.56
Nov-10	8.20	6.76
Dec-10	9.45	9.94
Jan-11	9.47	10.28
Feb-11	9.54	6.77
Mar-11	9.04	6.81
Apr-11	8.66	7.60

In designing an inflation control policy the problem is complicated by the fact of India's arrival on the global scene. India is no longer isolated from policy moves in other nations as it once was. This is giving rise to new dilemmas. In earlier times, inflation could be battled with the usual instruments of raising the interest rate and tightening credit. The Reserve Bank of India (RBI) usually did this by the raising the repo and reverse repo rates and on occasions raising the Cash Reserve Ratio (CRR)[8]. The relatively slow response of inflation to these measures in recent times has raised questions about the effectiveness of this policy in a globalized India (Basu, 2011). Another question, which has been raised regarding the use of macroeconomic policy, in particular, monetary policy, for the current inflation, is the following. Since this inflation began in 2009, arguably, because of a food shock, caused by widespread drought in the country, some commentators have questioned whether monetary policy is the right instrument to use. This objection can, however, be dismissed on the ground that, even if the original cause of inflation is not excess liquidity, the mopping up of liquidity can, nevertheless, dampen inflationary pressures[9].

The more serious problem that arises does so from the fact of the rather sharp dichotomy of experience of the industrialized nations and the emerging economies. Industrialized nations are plagued by stagnation, whereas for emerging economies the principle problem has been that of inflation. As a consequence of growth stagnation and the risk of a second round of recession, industrialized nations have tried different forms of macroeconomic stimulus. In the U. S. this consisted of two rounds of hefty quantitative easing. In the second of these rounds—the so-called QE2--the US Fed injected 600 billion dollars into the economy by buying up long-term bonds. Similar policies have been used by the Bank of England and, more recently, the European Central Bank lent 489 billion euros to banks, infusing more liquidity into the economy. In addition, these economies and also Japan have kept their interest rates extremely low. And therein lies the nub for India.

[8] It is worth pointing out that around the middle of last year the RBI announced that it was locking in the spread between the repo and the reverse repo rate to 100 basis points. Hence, effectively, it now has to control only the repo rate. The savings bank interest rate has also, on occasion, been used as a monetary policy instrument but as of October 2011, the savings bank interest rate has been deregulated, leaving banks free to set these.

[9] In a recent paper, Subbarao (2011) explicitly addresses the issue of food inflation and monetary policy.

This has given rise to some awkward problems of interest-rate arbitrage[10]. While in the case of India, thanks to capital controls there are limits to such arbitrage, there is nevertheless evidence of behavior like Indian firms placing orders of goods abroad simply to access the global credit markets with their low interest rates. This has, in turn, made the repo rate less effective in controlling inflation than what would have happened in a world economy where all nations faced a similar predicament.

The management of global liquidity has come up in G20 meetings and there is now increasing recognition that, given the globalized world we live in, there is need for more inter-country coordination of policy. Alongside this, India has responded to the inflation by using a combination of fiscal contraction, liquidity tightening and, above all, deft monetary policy. Monetary policy for controlling inflation and balancing between the objectives of employment generation and price stability is one of the hardest policy exercises that a nation has to conduct. This is especially so for newly industrializing economies. Programmes like those of financial inclusion, which encourage previously-excluded citizens to put their money in banks and other formal savings instruments often imply an increase in effective money supply. This needs to be countered through appropriate monetary policy. Reaching out to the poor with more support means relative price changes, such as a rise in the price of food and especially more-nutritious and protein-intensive foods (Gokarn, 2012). This can cause not merely inflationary pressures but bring about a certain skewness to the inflation. Managing these tasks, special to emerging economies, alongside the fact of globalization and inter-country coordination problem mentioned above, makes this a balancing act which is part science and part intuition[11].

This seems to be paying off because food inflation is virtually gone and overall inflation is also steadily declining. While Table 1 warns us not to celebrate too quickly since inflation did slowdown in 2008 and then flared up again soon

[10] There are interesting issues pertaining to the interface between financial sector reforms and macroeconomic policy, especially because India is in the midst of major policy revisions concerning the financial sector. It will take me too far afield to venture into this here but the interested reader may see Nair (2012).

[11] See Subbarao (2012) for an analysis of these dilemmas and, in particular, the intricacies of maintaining adequate liquidity in an economy which is in the midst of a tightening cycle.

thereafter, there is some satisfaction from the fact that at least this round seems to be coming to an end.

There is however a related concern with implications for inflation. This has to do with trade and the exchange rate. A sudden depreciation of the Indian rupee threatens imports and also risks a revival of inflation at least for traded goods. So alongside the policies to manage growth and inflation, we are being forced to turn our attention to the subject of exchange rate policy[12]. This is what I address briefly in the next section.

6. **Exchange Rate Management**

As India tries to transit from a low-income agricultural nation to a growing industrial economy, it faces some important challenges concerning trade and the exchange rate. Beginning with some small moves in 1991, India has since been essentially on a floating exchange rate system. The first proper change in India's exchange rate policy happened because of the financial crisis of 1991. In 1992, a 'dual exchange rate regime' was instituted. There was the **Report of the High Level Committee on Balance of Payments** by C. Rangarajan, in 1991, which recommended the broad outlines of a market determined exchange rate regime[13]. Current account convertibility was instituted in 1994, and a legal framework to assure such convertibility was put in place in June 2000. India has limited capital account convertibility; such conversions are permitted on a case-by-case basis.

There has been no effort to control the exchange rate by diktat. Instead, the system used is one in which there are some capital controls for foreign exchange sales and purchases, and on rare occasions the Reserve Bank of India has made market-based interventions which take the form of buying and selling dollars in order to keep the exchange rate stable. To quote from the RBI's most recent **Annual Report** (Reserve Bank of India, 2008, p. 127): "India is classified

[12] The interface between monetary policy, capital flows and exchange rates has been a staple of a lot of macroeconomic theory and has also been discussed in the Indian context (see, for instance, Bisen, 2012).

[13] There were later reports chaired by S. S. Tarapore, which also played a role in shaping the nature of current and capital account convertibility in India (see Mohanty, 2012, for discussion).

under the 'managed float' exchange rate regime of the IMF. The Reserve Bank intervenes in the foreign exchange market to contain excessive volatility as and when necessary." Usually, the RBI stays behind the scene and the only visible action on the market is that of a public sector bank making a large purchase of dollars. Here is **Mint** newspaper's web edition, **Livemint.com**, August 20, 2008 (2:45 pm), speculating about central bank intervention in India: "State-run Indian banks were seen selling dollars to help the rupee recover from a 17-month low […]. India's central bank uses state-run banks to intervene if it wants to slow a rupee decline or prevent it from rising too quickly, and private bank dealers said Wednesday's dollar selling looked like intervention."

Over the last two decades there has been a build-up of reserves. From 1977 to 1990 India's foreign exchange balance hovered around five billion dollars. In the early 1990s the rupee was put on a float and, from then onwards, the way for the RBI to influence the exchange rate was by buying and selling dollars. From 1993-4 the rise in foreign exchange reserves has been sharp, with a slowdown over the last two years. Over the last few years the Reserve Bank's policy has been much more a hands-off one. By and large, this has served India well, even though there have been dilemmas. Citing the depreciated exchange rate used by China, some advocates have proposed steady interventions in the form of buying up dollars and thereby shoring up the value of dollars and in the process lowering the value of the Indian rupee. This view was often heard, during much of 2009, 2010 and the first months of 2011, when the real exchange rate for the Indian rupee was appreciating (mainly in response to inflation in India). The argument was that there should be effort to keep the rupee value down by purchasing dollars, thereby enabling Indian exporters to be more competitive[14].

The argument in the public space swung over to the other side sharply from mid-2011, when the rupee began to suddenly depreciate (see Rajwade, 2012, for discussion). The trigger was Standard & Poor's downgrading, on August 5, 2011, of U.S. long-term sovereign credit from AAA to AA+. This caused widespread global uncertainty and, ironically, had investors run to US Treasuries for cover.

[14] Policies for helping domestic exporters or importers can go beyond mere exchange rate management to subtle policy combinations involving the management of interest rates and capital flows (Basu and Morita, 2007; Adam and Moutos, 2012).

The exodus of Foreign Institutional Investor money from India caused the rupee to depreciate sharply. Of course, a segment of traders were hurt by this and the public debate lurched to the other side with statements of doom concerning the Indian rupee ruling the headlines.

Given India's commitment to a floating exchange rate, as in most industrialized nations, what can India and the RBI do in such situations? The commitment to the floating exchange rate is, in my view, the right one. As the economy grows and India takes its seat among global players, we must resist temptations to fix the exchange rate as some nations have done.

Central banks, of even industrialized nations, wanting to devalue their currency, often intervene in the foreign exchange market by buying up foreign currency by using domestic currency, or conversely, if they want to revalue their currency they intervene by selling off foreign reserves. To quote from a textbook by Auerbach (1982, p. 414): "This method of influencing exchange rates is not always easy to detect. The central bank may have parties in the private sector intervene for them." In the U.S., to effect an intervention in the foreign exchange market, the Fed will often contact a dealing bank, such as Citibank and buy currency at Citibank's quoted rate. Moreover, a lot of the Fed's interventions, by some counts nearly half of them, are done secretly. And, often the explicit purpose of the Fed's intervention is to influence the exchange rate.

On 6th September, 2011, the Swiss National Bank caused a stir by announcing a ceiling for the Swiss Franc *vis-a-vis* the Euro; and stating that it "was prepared to buy foreign currencies in unlimited quantities" in order to maintain this ceiling[15]. Similar interventions by central banks to depreciate (and occasionally appreciate) currencies have been undertaken around the world. On September 15, 2010, the world felt the tremors when, following a sharp appreciation of the yen, the Bank of Japan sold yen and bought dollars. The immediate impact of this action was to weaken the yen *vis-a-vis* the US dollar. India's Reserve Bank (RBI) has also on occasion used similar action to smoothen exchange rate fluctuations. One consequence of such action to depreciate the domestic currency is that it causes a build-up of foreign exchange reserves, such

[15] **Financial Times**, September 7, 2011, p. 1.

as happened with the People's Bank of China. This smoking-gun evidence of central bank action has been a source of global criticism. Also, some nations do not want to build up such costly reserves but are reconciled to them as a byproduct of exchange rate intervention.

It is, however, possible to argue that it is not necessary to have any impact on the reserves when trying to alter exchange rates. This requires us to use some innovatively designed interventions, the technical properties of which I have discussed in my recent paper (Basu, 2012).--By using a suitable strategic technique—called 'schedule intervention'—it is possible for the central bank to game the private, foreign-exchange dealers to influence the exchange rate without running-up costly foreign currency reserves or running the risk of draining limited reserves. Even as this is being written, there is a lot of concern expressed in the Indian media about the sharp and sudden depreciation of the Indian rupee over the last six months and especially between August and October 2011,[16] as noted above. The standard way for the central bank to try to correct this (should it wish to) is to release dollars on the market and mop up rupees. Such action is, however, always laced with the concern that there are limits to how much foreign currency the central bank can off-load.

The argument in Basu (2012) is that (i) it is possible to remain on a system of floating exchange rates as an industrializing India would wish to, (ii) exercise some influence on the exchange rate to appropriately boost trade, growth and effect restrictions on the nation's current account deficit and, at the same time, (iii) not build up reserves or run them down. By appropriately designing *the micro structure of intervention*, the acts of influencing the exchange rate and building up (or running down) foreign exchange reserves can be separated from each other. In particular, it is possible to depreciate your currency and leave no trail of large foreign reserves and equally to revalue your currency without running down your foreign exchange reserves.

By building a strategic-form game model and studying its Nash equilibria, it may be questioned if the widely-used quantity intervention is the best kind of intervention. It is arguable that a 'schedule intervention' does better. Broadly, a

[16] See Government of India (2012).

schedule intervention is one where the central bank or its agent bank enters the foreign exchange market not with a fixed quantity demand but with a demand that is conditional on price. By suitably 'sloping' its demand for foreign currency, the central bank can fully immunize exchange rate interventions from a build up or running down of reserves. Basically, what I am claiming is that exchange rate management and reserve management can be treated as two completely independent objectives by the central bank. The secret is to choose a suitable schedule of intervention. If the currency market is fully competitive, there is no advantage from a schedule intervention; but if the market has big, strategic dealers and banks, then schedule interventions can be vastly more effective.

There is some interesting, indirect evidence supporting the real-life efficacy of schedule intervention. A cursory study of central banks around the world seems to provide no direct evidence of the use of a schedule intervention. However, Mexico's Currency Exchange Commission, which consists of members of Banco de Mexico (Mexico's Central Bank) and Finance Ministry, has used a variant of conditional or schedule intervention in the foreign exchange market. On November 29, 2011, for instance, the Currency Exchange Commission announced it would release US$400 million per day *in case the peso declined by more than 2 percent in one day*. Similar interventions have been used by it in the past and there is some evidence that this kind of intervention has worked very effectively.

Despite this, it is admittedly the case that the argument provided above is, at this stage, a theoretical construct. It will take time before it can be put to use. What will be important to check before it is put to use is its robustness against errors. Given that in reality we will never be able to estimate the precise form of the ideal schedule intervention, it will be important to work out the consequences of 'small' mistakes in intervention. Even if this works perfectly if the correct schedule is implemented (this we already know will be the case, since it is theoretically verified), in case it turns out that errors can be hugely costly, we may have reason to be cautious about using it. In other words, there is still a lot of research to be done before schedule interventions can be used.

Yet in a modern and industrializing economy that does not wish to go back to the ways of formal exchange control but nevertheless has the need to steer the exchange rate minimally to keep the real economy stable and the current account

deficit within certain limits, central bank policy of the kind discussed above will be worth considering.

7. **Beyond Economics**

Much of what happens *in* an economy depends on what happens *beyond* economics. Given that the focus of the present paper was, deliberately, on macro-economic policy, there has been little mention of the role of the even more dismal sciences, politics and sociology and institutions rooted in these disciplines, in the functioning of an economy.

Sustained growth and development arguably depend more on the social and political institutions of a nation than is generally acknowledged, even though there were some early writings emphasizing this, most notably, Polanyi (1944) and Granovetter (1985). Not surprisingly India's remarkable growth story of the last decade and half can yet be jeopardized if we do not set the political and social institutions and preconditions right[17]. Fortunately, this is now recognized even in government documents (see Government of India, 2011, 2012).

Accordingly, I shall, in this closing section, digress from the main theme of this paper and comment briefly on the role of these conditions in promoting growth and development. One major handicap in conducting such an analysis comes from the fact that the recognition of the importance of institutions has come relatively recently in economics. Actually the underpinnings of politics and law have been recognized for a while; but those of society and culture are more recent. Hence, our understanding is still quite rudimentary. Yet to ignore it for that reason would be a grave mistake.

Kenneth Arrow had reminded us a long time ago, how the market mechanism works only because society also has the binding ingredients of altruism, sense of duty, trustworthiness and other social qualities. If these qualities vanished, an economy would quickly collapse (Arrow, 1982). This suggests that the relative success of different economies could depend in part on the nature and extent of these social and cultural qualities present in society.

[17] For a discussion of this in the Indian context, see Sen (2012).

Contrary to what early textbooks of economics asserted, virtually all human beings have other-regarding preferences. Most people are willing to make some personal sacrifices for the sake of large gains by others[18]. What is now increasingly evident is that for a modern market economy to function we need to have some of these social norms prominently in place.

But even if, for now, one stays away from these less-understood and therefore less-defined themes, there is need to appreciate the importance of governance and the law. India scores poorly on governance and the transactions costs associated with economic life, though it has an impressive legal system, one that is not easily manipulated by politics. One can see the vast scope for improvement in matters of governance from the various "Ease of Doing Business" data that the World Bank now routinely publishes. In 2012, India ranks 132 among 183 nations in terms of overall ease of doing business indicators. In terms of procedures to start a business and get all the 'permissions' needed for a business to start up India ranked at 166th. In terms of the transactions costs of paying taxes and the time taken to enforce a contract India ranks at, respectively, 147 and 182.

On reason why this has not done that much damage is that India's government is not as powerful and as ubiquitous in everyday life as the governments of some other nations. Hence, a lot of economic activity occurs beyond the reach of government and explains the remarkable growth record of India. However, this is one area where the dividends of improvement can be enormous.

When it comes to the legal system, India does stand out for its performance, at least among developing and emerging nations. This shows up in the one indicator among the many Doing Business indicators which reflects a nation's legal autonomy. This is a measure of how well a nation does in "protecting investors." On this, India gets a rank of 46, which for an emerging economy is creditable performance. However, it is the law pertaining to

[18] Some recent laboratory experiments by Basu, Becchetti and Stanca (2011) delineate the fairly precise contours of these altruistic preferences. They show that when ones gains and losses are large from particular actions, they pay scant attention to other people's gains and losses. But when their own stakes are low, they are prepared to make choices which entail self-sacrifice for the sake of others. In other words, people demonstrably care about others and in ways more robust than a lexicographic one, which gives primacy to their own interest.

corruption control that has hogged the news in recent years. Much has been written on the subject[19] and it is not the aim of this paper to go into the details of this here. The only point that needs to be stressed here is in the spirit of the gaming argument discussed in section 4, above.

Much of our corruption control policy goes wrong when it comes to implementation because of one fundamental error, a propensity to treat the enforcers of the law—the policemen, the bureaucrats and administrators—as robotic agents, who will carry out the task they are supposed to do mechanically and flawlessly. Once we recognize that the shopkeeper who runs the government-controlled ration shop has his own objectives and will violate his assigned rules if it turns out to be beneficial to do so, and the bureaucrat who is supposed to monitor the ration shop has similar personal aims and ambitions, we begin to approach the problem very differently. This is the old Humean question: Who will police the policeman? This leads to the answer that whatever system we suggest must have the property of being a self-enforcing equilibrium.

At first sight this may appear to be too cynical a view of human beings as all selfish characters. But that is certainly not the intention here. As mentioned above and a lot of literature confirms human beings have in themselves innate tendencies to be moral and altruistic (Guha and Guha, 2012; Hauser, 2006). However, the strength of these propensities can vary across individuals and societies and can change over time. A fascinating account of the malleability of norms occurs in Hashimoto (2008). This paper, quoting historical sources and Japanese writing, describes the notion of time and punctuality in Japan at the turn of the 19th century: "Trains … depart or arrive late all the time. Almost all trains are behind schedule … and station staff who should give the first priority to maintaining time never seem concerned about delays. … The cause of the delays is that Japanese, both those running the railroads and the passengers, are, owing to bad old customs, lacking the turn of mind that observes time strictly." Evidently, this has no resemblance to contemporary Japan, arguably, the world's most punctual society.

[19] Basu (2012a), Dufwenberg and Spagnolo (2012), Engel, Goerg and Yu (2012), Banerjee, Cole and Duflo (2006), Bardhan (1997) and Marjit, Mukherjee and Mukherjee (2000).

The social and political ethos that prevails in a society can reinforce or weaken the innate propensity of human beings to be other-regarding. Social norms are like in-built restraints, which ensure that certain actions that may be physically feasible are, nevertheless, considered out of bounds. All dogs can bite but only some do. Similar propensities are also true about human beings. But this does not change the point made in the above paragraphs. In designing polices we must take realistic stock of the interests and propensities of the enforcers. These can differ across societies. So to design these policies right we cannot be mechanistic but must have knowledge of the society we are dealing with and the propensities of the people of this society.

While India has acquired considerable sophistication in terms of regular economic policymaking, such as those pertaining to monetary and fiscal policies, we still have a lot of distance to go in understanding the social and political foundations of economic development and how these can be strengthened. But the dividend that can be earned from this is big; and hence there has to be greater effort to do research and to integrate these 'political and social' polices into the framework of economic policymaking in India.

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