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Essays on India's Economy: Growth and Innovation

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Abstract

This is a collection of essays written for the *Financial Express*, an Indian financial daily. The common themes of these essays, which cover a period of almost four years, from August 2010 to June 2014, are issues of growth and innovation in India, considered in two sequential parts, each part ordered chronologically. Topics considered in the first part include the quality and limits of economic growth, rights and other aspects of well-being, spatial dimensions, and drivers of growth. The second part examines innovation in the context of manufacturing, education, information technology, management and tax incentives.

Keywords: inclusive growth, virtuous growth, innovation, venture capital, management, manufacturing, information technology, education, skilling

Growth

The Great Growth Debate

January 18, 2011¹

The debate between two of India's greatest economists, Jagdish Bhagwati and Amartya Sen, is important for India's policy makers. Are growth targets diverting policy attention from other important development goals? Chief Economic Adviser Kaushik Basu has said the differences are less substantive than they are made out to be, but what is the common ground? Here is my take on the great growth debate.

Begin with some propositions on the ends, or goals, of policy. Obviously, economic growth is good. More explicitly, growth is necessary for development, but not sufficient. Development includes enhancing human capabilities and freedoms, and so goes beyond growth. Inclusive development extends these benefits to as many as possible. So obviously development is necessary for inclusive development, but not sufficient. The final proposition is a bolder one, but is plausible, consistent with history, and probably a consensus view: inclusive development is necessary for sustained high growth. Think of it as a positive feedback loop. And remember that political legitimacy is part of the equation.

What are the implications of this framework? If we want rapid and sustained growth, it does make sense to set goals on other dimensions, especially health and education. But growth is still critical, and benchmarking growth is useful – policymakers should have feasible but challenging targets to aim for. Policymakers have to track and make progress on multiple fronts, but they do this all the time – with inflation, external balances and other measures of economic health. They also have to consider tradeoffs between the short and long run, but that is the essence of investing for growth.

So what is the fuss about? Can we say more than the obvious, that investing in human capital and infrastructure, and raising productivity, are necessary for growth and development? What are the means to achieve our complex ends? What should the government do, and what can it actually do? Perhaps there are differences in opinion here.

Let's take health as an example: it figures in Professor Sen's concerns, and in some of my own recent research. Sen argues for more attention to health goals and outcomes and more government spending. In India, spending on private sector provision of health care is very high as a percentage of total health spending. The poor are disadvantaged, since they cannot afford sufficient care of high quality. The government must do more and spend more, in this view.

But the National Rural Health Mission is already in place, bumping up public sector health spending. Despite some institutional innovations, however, the problems of poor incentives and

¹ The dates given are the dates of writing. In most cases, the piece would have appeared in the *Financial Express* several days later.

inefficient government spending remain. In fact, private sector provision of health care has its own quality problems, though different from the public sector. What is needed are specific organizational reforms. Take the important case of maternal and neonatal health. Institutional deliveries can help improve outcomes over home births. The Chiranjeevi scheme in Gujarat does this by harnessing private sector doctors' expertise, managing their incentives (monetary and nonmonetary) and using public funds to subsidize poor patients. The latter requires improving specific government processes for funds transfers. Another example, LifeSpring Hospitals in Andhra Pradesh, provides purely private sector delivery for the lower middle class, but with attention to cost control through process efficiencies that the public sector will never achieve. The government got it going, however, with start-up capital. Most ambitiously, the Merrygold network in Uttar Pradesh uses a franchise model for private hospitals and clinics, and uses public money to improve standards of operation and care, and to subsidize the poor.

There are lessons here for other seemingly intractable health issues. Malnutrition, India's biggest national scandal and a focus of Sen's recent comments, requires targeted public policy attention. But the solution will come through leveraging and improving private sector expertise and efficiency, piggybacking on initiatives like Merrygold, and not through spending more public money without organizational innovation.

There is an even broader lesson, going well beyond the health sector. India has a huge unfinished agenda of economic reform that can be summarized as creating an enabling environment for the private sector to drive growth. This includes ensuring competition and providing effective regulation for consumer protection. Paying attention to the poor does not require direct government provision of services. The government can do better by creating institutional environments that promote efficient production and delivery of goods and services, and separate this from the need to subsidize the poor for basic health and education.

These reforms are needed throughout the economy, and no less for services such as basic health care, which matter for growth as well as human well-being. There is no tradeoff between these economic reforms and the goal of inclusive development. Concerns for broader measures of human well-being are consistent with policies that alter the way that the government intervenes in the economy at the micro level. Economic reform can be good for growth and for broader well-being.

Fighting Malnutrition in India: Lessons for the growth debate

February 1, 2011

Growth is good. So are health and education. Malnutrition is bad. As I noted in my last column, everyone, including those involved in India's growth debate agrees on these things. But differences emerge in recommendations for how to improve India's human development status. Malnutrition is a good example. One view is that focusing on growth alone diverts attention from

tackling problems like malnutrition. Another view is that accelerating growth is crucial to generate the resources for addressing such problems. Last time, I suggested that the government could do better by leveraging the private sector more. This may seem to be a tall claim. After all, the private sector seeks profit, and the children of the poor are an unlikely source for that. And malnutrition is not an obvious headline grabber, nor a problem with a single cause, which permits easy focusing of policy attention. Let's dissect the problem, and see if the claim can hold up to scrutiny.

India's malnutrition problem is a longstanding one. Worryingly, and relevant for the growth debate, the recent growth acceleration has not led to as rapid a decline in malnutrition as might have been expected. The government's Integrated Child Development Services (ICDS) program is decades old. Five years ago, a World Bank discussion paper analyzed the weaknesses of ICDS. These include (but are not limited to) failures to focus adequately on the periods of greatest importance, namely pregnancy and the first two years of a child's life; to train ICDS workers adequately; to educate parents on child care; to provide well-targeted and sufficient micronutrients; and to coordinate with Reproductive and Child Health programs and other health or health-related services.

The study's recommendations are crisp and clear. They include better targeting, better training of workers, better monitoring and evaluation, feedback loops so that data that is collected is actually used to adjust implementation, greater community involvement, more coordination with health programs, and greater attention to education of parents on child care and feeding practices. Interestingly, and rightly, these recommendations stay away from generalized wailing about poor governance or societal gender bias – those things matter, but cannot be fixed easily or quickly. Program redesign is a much more tractable approach. The report also does not emphasize throwing more money at the problem. Of course growth generates additional monetary resources, but the binding constraint here is not necessarily money.

This brings me to my topsy-turvy claim that the private sector can help with a problem where they should not care at all. The central and well-recognized problem in India's delivery of public services is the poor incentives of government employees. Last time, I gave three examples of using private sector providers to increase access to hospitals or clinics for childbirth: Chiranjeevi empanels private doctors, LifeSpring received start-up capital from the government, and the Merrygold network creates a franchise with government-funded training and brand-building. Private sector standards are raised, the profit motive is harnessed for efficiency, and the poor are subsidized without direct government provision.

But maternal deliveries are well-defined, short-term interventions, susceptible to measurement and process efficiency monitoring. Malnutrition is a tougher nut to crack. That is true. But progress on malnutrition can be measured: weight and height measurements, including those at birth, are standard benchmarks. A monetary incentive scheme tied to achievement of goals is at least conceptually feasible, and data can be audited to prevent fraud. And it is much easier to

implement outside the government sector, in which employment tends to become a welfare program itself. In fact, sites such as LifeSpring and Merrygold hospitals could be launching pads for the kinds of refocused interventions on malnutrition that are recommended by the World Bank study. In other words, redesigning ICDS may be inferior as a starting point for reform, compared to new programs that piggyback on the childbirth interaction between health professionals and families. The critical period for tackling malnutrition lies on either side of childbirth, making providers of institutional deliveries a pivotal group.

The approach I am suggesting here is pay-for-performance. Performance has to be well-defined, measured and monitored. But this is possible for malnutrition, even if more complicated than simply counting institutional births. Pay-for-performance will let service providers optimize their own production methods: the World Bank study shows that the knowledge is not lacking, only the incentives. Separating service delivery (where the government functions poorly) from access and affordability can work for fighting malnutrition. Managing access requires enforcing eligibility. This is where the Unique Identification Authority (UID) project will help. Ensuring affordability requires proper payment mechanisms for subsidizing the poor: here the government is weak internally as well as in paying private providers, but Chiranjeevi showed this weakness can be overcome. The government can tackle these two components of a public-private partnership. Improving service delivery could come from improved government functioning, but that is a slow and uncertain approach. Harnessing, supporting, improving and expanding private sector delivery of “malnutrition-reduction” services would be quicker, cheaper and more certain.

India’s Missing Growth Driver

March 20, 2011

India’s Union Budget has been presented, the Economic Survey has been published, and attention has returned to day-to-day governance and politics as usual. Stories about big business, big sums of money and large-scale corruption are the ones that grab headlines. Ultimately, though, key policies that will shape India’s future may be suffering from neglect. Sustained inclusive growth requires innovation and job creation across a broad cross-section of the economy. This includes labour-intensive manufacturing, but, more generally, an industrial dynamism that extends beyond large incumbent firms, foreign entrants, or the relatively few recent domestic success stories.

A few years ago, prominent economist Anne Krueger labelled India’s problem that of a “missing middle” in its distribution of firms – a gap between small firms in the unorganized sector, and the large firms that grab headlines in billionaires’ lists and mega-mergers and acquisitions. This year’s Economic Survey (Chapter 9) offered a clear statement of understanding of potential. “The role of MSMEs [Micro, small and medium enterprises] in the economic and social development of the country is widely acknowledged. They are nurseries for entrepreneurship,

often driven by individual creativity and innovation, and make significant contributions to the country's GDP, manufacturing output, exports, and employment generation. ...MSMEs are important for achieving the national objective of growth with equity and inclusion.”

The Economic Survey goes on to discuss the 2010 report of the Task Force on Micro, Small and Medium Enterprises, which indeed provides extensive discussion of what should be done to support MSMEs, as well as a number of other government initiatives in this area, pertaining to skill development, cluster development, credit availability, and so on. Reading through all these, one is reminded of four persistent weaknesses with respect to policy thinking in India. First and foremost, there is little or no information on how well money is spent, or how effective are the various initiatives. Second, there is not much prioritization of policies, no sense of what are the key bottlenecks. Third (closely related to the previous point), there is no analytical framework within which to understand the issues and guide policy formulation. Fourth, there is a presumption that direct government spending is the answer, rather than creating enabling environments for private sector action.

Anne Krueger and many others (including myself) have pointed out and analyzed India's poor ranking, and failure to improve, in measures of ease of doing business. Last year's Economic Survey (Chapter 2) provided a detailed discussion. It noted “India's unpardonably large bureaucratic costs” as well as that “The problem lies ... in our conception of the state, to wit that it has to directly deliver on every front and not be content with an enabling role.” This year's Survey makes a brief mention of the problems of doing business in India, but one does not find any linkage of outcomes, as measured by the ranking and its components, to the policies that are listed, either in the rest of the Economic Survey, or in documents such as the MSME Task Force report. This year's Union Budget makes the briefest nod to MSMEs, and only in the context of traditional directed credit and interest group subsidies.

The situation is not completely bleak. The MSME Task Force report does contain rich discussions of transactions costs for small businesses, the need for improved insolvency procedures, marketing support, tax reform, and even labour law reform. Much of the needed reform is part of an ongoing overhaul of the legal and institutional framework for doing business in India. Those reforms will help all firms, small, medium and large. Again, what is missing is a clear understanding, based on data, of what keeps India's “middle” of the firm distribution “missing in action.”

In the context of understanding India's industrial dynamics and drivers of growth, it is also unfortunate that the old “small and medium” category for enterprises was augmented with micro-enterprises. In this year's Economic Survey, much of the discussion shifts from MSMEs to just micro and small enterprises (MSEs). Just as in the case of the old small scale reservation policies, there is a danger that MSEs become a protected species, their smallness nurtured and prolonged, rather than policies being developed that support the growth of firms that deserve to grow.

The venture capital model is designed precisely to select and support companies that are candidates for high growth. It is not perfect, but it has fueled tremendous innovation. The Union Budget did not mention venture capital. The Economic Survey has a passing reference in the chapter on financial intermediation, though nothing in its discussion of MSMEs, despite several references to venture capital in the MSME Task Force report. India's missing growth driver is that it is not creating enough new firms that have the potential to grow rapidly and generate large-scale new employment. This issue should not be allowed to recede in policy thinking and policy priorities.

Getting India to Ten Percent Growth

June 16, 2011

The ten percent growth target for India has had a magical allure. It is hard to say if anyone first held it out publicly as something to strive for realistically, but I do remember Vijay Kelkar as being an early believer. The current Prime Minister has also mentioned this target several times. Yet that double-digit growth rate has remained stubbornly out of reach as a short-term forecast of actual growth. Indeed, it seems that when the Indian economy nears ten percent growth, inflation rears its ugly head, and fears of overheating spread. A few years ago, estimates of India's medium term potential growth rate tended to be in the 8-9 percent range. This may be about to change.

The latest OECD economic survey of India, its second ever, and coming four years after its first, offers this optimistic prospect, "the annual potential growth rate of the economy could rise to 10% in the next five years, and that this pace could be maintained for the remainder of the decade." What assumptions underlie this conclusion? There are a number, including the rate at which households increase their savings rates, greater government saving through fiscal consolidation, channeling of these savings to increased investment, and continued growth of total factor productivity (roughly, a measure of the gains from innovation rather than input accumulation) of 1.9 percent per year – its recent trend.

Much of this forecast is driven by India's favorable demographics over the next two decades. The young people entering the labor force may provide a boost to India's growth potential. Of course, these young people will be expecting the fruits of growth, perhaps much more than their predecessors of a generation ago. The OECD projection also assumes that the contribution of labor to growth will increase substantially, due to rising education levels and shifts of workers out of agriculture. This assumption reminds us of two huge challenges faced by India. One is the need to expand its education system, both in access and quality. The other is to create jobs for those who acquire more education.

The government is not capable of doing either of these on its own, because it lacks the needed financial resources and incentive mechanisms, but it can certainly improve the environment for

private sector provision of education and creation of jobs. It is starting from a poor base. According to the OECD survey, “Human capital in India is still low relative to a number of North-East Asian economies when incomes there were similar to those in India in 2010.” The comparison with South-East Asia is somewhat more encouraging, but it remains to be seen if the government can truly liberate the education sector. On the jobs front, the survey blames “intrusive product and labour market regulations” for holding back growth, and notes the lack of sufficient competition in industry, as well as India’s continued poor ranking among countries according to the World Bank’s Ease of Doing Business Index.

As one would expect, the survey also touches on infrastructure, land acquisition, inefficient subsidies, tax reform and financial sector reform. An unsurprising thread that runs through several of these areas, as well as education provision and the business environment, is the need to improve governance. What is important to understand is that improving governance goes well beyond the current focus on reducing corruption. While corruption is abhorrent, it may not be the worst obstacle to India’s development. Bad or poorly designed laws honestly applied can, in some ways, do more harm than corruption.

Despite the long list of reforms on the table, it is likely that not all of them are needed to achieve 10 percent growth for a few years. This is because of India’s favorable demographic trends. But this is no reason for complacency. India’s per capita income is only a third of China’s. And China has not yet guaranteed that it will avoid getting stuck in a middle income trap, as has happened to some developing countries. Even 20 years of 10 percent growth will not get India to where South Korea is now. So perhaps we should stop thinking of the lowest double digit number as an achievement to be prized. Instead, it could be transformed into a new baseline for Indian growth. If this seems far-fetched, recall that such growth rates were once considered miraculous for any country. And for India, getting beyond six percent growth was once remarkable.

In earlier columns, I have emphasized the importance of dealing with problems like malnutrition, of making growth inclusive, and of the intrinsic benefits of development. In debates about the role of growth targets in economic policymaking, I acknowledged, like some other economists, that these and other factors matter. But I also noted, like a different set of economists, that high economic growth is not to be dismissed lightly. Ten percent is not bad.

Virtuous Growth for India

September 8, 2012

India’s ruling coalition has promoted the idea of inclusive growth. What this means operationally is something that can be debated. One idea is that a broad cross-section of society should enjoy the fruits of growth. For example, Kaushik Basu has suggested measuring the income gains of the bottom quintile of the population as a concrete, specific indicator of growth. One can also

interpret inclusiveness to mean going beyond income. Amartya Sen has emphasized that there are other measures of development and well-being – literacy rates and life expectancy can also grow, for example. For others of Sen’s suggested dimensions of development, such as rights and capabilities, quantitative measures of growth may be difficult, but one can still speak of more inclusive development in a qualitative sense.

Material welfare and rights are reasonably well understood, though agreeing on how to measure gains, or manage tradeoffs between them, still can be a challenge. But there is a third dimension that has been stressed by philosopher Michael Sandel, who discusses the importance of virtue, in his books, *Justice: What’s the Right Thing to Do?* and *What Money Can’t Buy: The Moral Limits of Markets*. Sandel’s examples are mostly from the United States, and are germane to the current political debate in that country’s presidential race. But they also have relevance for India.

Basically, Sandel argues that welfare and rights (especially freedom of choice) are insufficient to guide us to just social outcomes. There has to be a consideration of morality that goes beyond these. He favours “cultivating virtue and reasoning about the common good.” What this means in practice is hard to generalize, but he argues through examples, and he gets at the heart of some of the issues that trouble ordinary people when they consider the role of market forces. In particular, a key idea that he advances is that market exchange based on commoditisation can crowd out moral considerations and make us worse off as a society. For example, market exchange can destroy the good itself – friendship cannot be bought and sold. But even if the good is tradable without being degraded (babies are an example he discusses), there is a loss to us individually and socially from such marketisation: the participants in the exchange are corrupted or degraded, rather than the object of exchange. A complementary possibility is that pure market-based allocation is undesirable because it is unfair, pricing all but the rich out of some goods (such as a visitor’s seat to watch Parliament in session) – this relates to more conventional notions of equity or egalitarianism, and the basic idea of inclusiveness.

Sandel uses his framework to discuss more concrete notions of citizenship, sacrifice, honour and responsibility. If markets intrude too much on social norms, then there is a loss of virtue. On the other hand, virtue is strengthened by its application – we learn to be good citizens through how we go about our civic duties. In particular, allowing the market to dominate the government will be problematic. Note that this does not constitute an argument against economic reform in India. In fact, the problem with the old system was precisely that it created opportunities for buying and selling government favours, in situations where open and transparent market allocation could have been more effective. My guess is that Sandel would have concerns about Kaushik Basu’s suggestion to decriminalize bribe giving where the bribe is demanded for a service to which the recipient of the service is entitled. This can increase efficiency and material welfare, but can have a corrupting or degrading effect on individuals and society.

Sandel’s idea of virtue as important for individual and social good is not new. There are conceptual links to Gandhianism or even Nehruvian socialism. But like Nehru and unlike

Gandhi, there is not a broad-based suspicion of material progress. And unlike Nehru, there is not a broad suspicion of markets. So I do not think that paying attention to virtue means neglecting traditional economic growth. Virtuous growth is not an oxymoron. If fairness is a virtue, then virtuous growth subsumes inclusive growth. But if inclusive growth means that rich and poor alike progress materially while becoming socially less engaged, or more corrupt, or materialistic in ways that are degrading, then even inclusive growth lacks something. It is possible that the sustainability of growth may require inclusion in the medium term, but virtue in the longer run. Virtuousness can align with intrinsic motivation, so that people do their jobs well, not only because they are paid for it, but because it is the right thing to do. It also focuses attention on how those jobs are experienced, so that dignity matters in itself, not just for the bottom line. There are implications for how the private sector chooses to conduct itself, aside from government regulation. The sharpest implications, however, are for the government itself, which in India, often fails to promote virtue or to practice it, while pretending otherwise.

Creating Virtuous Growth

September 14, 2012

In my last column, I introduced the concept of virtuous growth, which subsumes the idea of inclusive growth. Virtuous growth includes promoting fairness, but it also means avoiding societal change that corrupts and degrades positive human values. In this column, I want to spell out how India might create virtuous growth in practice. Virtue and inclusion, as characteristics of growth, may be the keys to sustaining that growth, besides having intrinsic societal value. However, it is important not to make the pursuit of virtue a pursuit of an unattainable utopia.

Michael Sandel, writing on the “Moral Limits of Markets,” sharply defines the conceptual issue for dealing with virtue. He quotes prominent American economist and policy maker Lawrence Summers: “We all have only so much altruism in us. Economists like me think of altruism as a valuable and rare good that needs conserving. Far better to conserve it by designing a system in which people’s wants will be satisfied by individuals being selfish, and saving that altruism for our families, our friends, and the many social problems in this world that markets cannot solve.” Instead, Sandel argues, virtuous attitudes are like muscles that grow stronger with exercise. In his view, altruism and similar virtues need to be pushed beyond family and friends, to the wider public sphere.

This gets to the heart of the Indian paradox. India’s leaders and its elite promoted a flawed implementation of virtuous growth after independence. Virtues such as fairness were sought to be achieved through legislation, in a society dominated by vertical and horizontal social cleavages. But India’s structures of governance became unintended arenas for the play of market forces, with government favours being bought and sold. Affirmative action made small inroads

into lessening social divisions, but India's masses have been seen as perennial children, to be managed without ever growing into well-functioning adults.

Like Lawrence Summers, India's policymakers thought of virtues such as altruism to be in fixed supply. They thought of themselves as possessing most of this supply, so unlike Summers, they favoured paternalism rather than market allocation. Parallel manifestations of this attitude have been a high degree of government centralization and extreme government control of the market.

The last point needs emphasizing. Unlike the United States, where Michael Sandel can rightly bemoan the overreach of the market, India's market system remains grossly underdeveloped. Economic reform in India has to correct that underdevelopment. India's *Dalits* have perhaps been helped as much by market-oriented reform that has created more economic opportunities for them as by affirmative action. At the same time, the point of seeking virtuous growth is to avoid moving too much in the direction of a society where everything in life is bought and sold.

What can government properly do? Much of the inculcation of virtue is done through family and religion. But Sandel's idea of promoting "reasoning about the common good" can be implemented in a couple of obvious spheres of action. One is civil society. India possesses a reasonably strong set of civil society institutions. These should be allowed to flourish, free of political interference and manipulation. These institutions, too, have a responsibility to seek change through reasoned debate and action, rather than agitation and knee-jerk reactions to the role of markets.

The largest arena for sowing the seeds of virtuous growth is at the level of local government. This is an ongoing process in India. Evidence is emerging that decentralization in India has not only improved the allocation of some public goods, but has also led to more engagement, more public debate, and more transparency. The gains are still small, but they do suggest that the old fear that public virtue is limited at the local level no longer holds. If anything, problems continue to be witnessed with schemes that are decided in far-away Delhi, and trickle down to the village. It would be far better to give local governments more fiscal capacity and with it, more real decision-making power. The common good will be promoted by debates at the local level on the best means of doing so, when the debaters know that they control the outcomes.

This does not mean that virtue will emerge spontaneously. Frameworks of participation have to be structured to be fair and inclusive – the reservations for women at the local government level are a good example. Just as when James Madison wrote, while debating the formation of structures of governance for the US, "men are not angels." And neither are women. Monitoring, accountability and checks and balances are still needed.

My conclusion, then, is a modest one. A start to implementing virtuous growth can be made by decentralizing more fiscal capacity to the local level. To do this in a politically feasible way will also require fiscal decentralization to the states, of revenue as well as expenditure authority. The Centre has to structure this decentralization to protect horizontal equity. The current system of

intergovernmental transfers does that in a very imperfect and limited way. Fixing this system will require a strong effort, so even this modest goal will not be easy. But exercising virtue often is not the easy thing to do.

The Great Rights Debate

July 20, 2013

India's food security bill has intensified a larger debate on where the country should be headed, with respect to questions of the rights of citizens. Naturally I want to weigh in as well. There are several issues, which to my mind are getting combined in ways that reduce the clarity of our thinking.

First, there is the grand philosophical challenge of what rights are and which ones, at some abstract level, we want to protect and promote in our society. For example, the United States Declaration of Independence called out (though not exclusively) the rights to life, liberty and the pursuit of happiness.

Second, there is the question of how to translate any abstract right into practical rules for society. In the US, the right to liberty was amplified and spelled out in their constitution's "Bill of Rights," to include freedom of speech. How that gets put into practice (for example, it is not a right to shout "fire" in a crowded theatre if there is no fire) depends on societal norms, laws, and the interpretation and enforcement of those laws.

Third, there is the issue of the motivations and objectives of those who are pushing for amplifications or extensions of rights in India, including influential people in and outside government.

Let's not worry too much about the third issue, since the first two are central. Of course, if the current approach to rights is wrong, understanding why it went wrong will be important for changing the process and for selecting new decision makers who can do a better job. Looking at the United Nations Universal Declaration of Human Rights, one can see that we have, in principle, agreed to an expansive set of rights, of varying character and tenor (the right to life vs. the right to marry, for example), some of which are derivative of others, and some of which may conflict at times with others. It is also clear that practice in India falls woefully short of many of the ideals laid out in this document.

So, with respect to the first issue, of what rights are, and which ones are desirable, as a first approximation, we have reasonable answers, the result of considerable global intellectual effort and historical experience. The real focus, then, should be on implementation. Of course, everyone falls short of ideals in practice, so the question is how we can do better. The economist's way of thinking is very useful here – one should establish where we are relative to a

“rights frontier,” how to move closer to the frontier, and where we should be on the frontier. The latter involves tradeoffs – should we spend more on subsidised food or on access to clean water? On public health centres in villages or on subsidised health insurance? On better and more equal treatment in the justice system or on maternal and neonatal health?

Of course, we would like to do all these things, but at some level choices have to be made, and one problem with India’s government decision making processes is that they do not support good spending choices in general. How to fix that was the subject of my last column. There is a second level problem once choices have been made. If we want to promote the right to health and well-being (as articulated in the UN Declaration) by focusing on food (rather than housing or medical care), then, is translating that objective into “the right to rice at two rupees a kilo, delivered through the Public Distribution System” the best way to do it? What is surprising is that this question has not been properly addressed by many policy makers and policy advisers. This is disheartening.

Of course, it can be counterproductive to criticise without offering a better alternative. So here is my suggestion, one I have made before. Focus above all on the health and well-being of two years in the life-cycle of every citizen, from conception to their first birthday. Put marginal public resources for the broad right to health and well-being entirely into this targeted group. This includes an integrated approach to food and nutrition, health care, and information and education. This will also have a big impact on gender issues and the rights of women, though in indirect and long-run ways. It is universal and easily targeted at the same time.

For complicated reasons, India does terribly on the interval (-1, +1) in its citizens’ lives. That alone would suggest that the bang for the buck would be highest here. Indian society has too many problems to fix all at once with the resources available. Getting this one piece of our lives right would be an excellent place to start. It will make a lot of other rights easier to attain over the longer run. Articulating citizens’ rights is a good thing. Using resources intelligently to achieve these rights effectively is also good, and ultimately where the proof of the pudding lies.

Can India Grow Faster Again?

August 1, 2013

India’s growth has slowed dramatically from the global boom years. What can it do to recover? Was the period before the financial crisis just a temporary, lucky window for India, now gone forever? The rich world is saddled with debt. An emerging market slowdown, partly a result of the industrialized countries’ own slowdown, and partly due to internal structural issues in China and elsewhere, is the latest shadow looming over India’s growth prospects. Is the gloom escapable?

There are possibilities for hope. Much as I dislike the idea of Indian exceptionalism, in this case it may be warranted to some extent. Most importantly, India is by far the poorest of the BRIC group, and probably one of the poorest of the more amorphous “emerging market” designation. That means it has more room to grow. It is quite far from having to worry about any so-called “middle-income trap,” that might be an issue for China and Brazil. Secondly, India’s demographics give it an opportunity that does not have to be sabotaged by a global slowdown. Thirdly, India’s slowdown is partly a result of its own policy missteps, and not just global conditions. These factors suggest to me that India can grow at 8 percent a year, even in the current economic climate. How can this be achieved?

The need to create productive employment at a very large scale is obvious. This is more complicated than just giving away money for rural make-work programs – that is just a transfer scheme for redistribution-cum-income insurance. India needs to create more new businesses and allow existing ones to expand more easily, and in employment-friendly ways. Clearly, labour market reform is needed, and it is not as difficult as it is made out to be. The core problem is political acceptability, and a grandfathering scheme, where existing employees are protected, but new ones in new firms, or certain classes of old ones, are allowed to be employed under more flexible conditions.

Next, the focus of new business creation should be in second and third tier cities and towns. These are best placed to absorb rural labour most efficiently and flexibly. To make this work, strengthening urban infrastructure at this level is critical – this means empowering urban local governments, increasing their capacity and incentives to raise revenues and build and manage new infrastructure. It also needs continued development of rural roads.

Another way in which India is somewhat different is in its geography. This geography actually makes it easier to develop internal supply chain networks, again provided that the internal infrastructure is in place. Currently, a wholesale review of India’s transportation sector is underway – hopefully its recommendations will be the basis for reform, not just in physical infrastructure for internal movement of goods, but also in the institutional infrastructure of regulation and taxation that often inhibits the development of internal production networks.

India also needs to think about patterns of production. Japan certainly grew by becoming an exporting powerhouse after World War 2, but it also produced for its domestic market. Durable goods industries making appliances and cars for domestic consumers were crucial to Japan’s inclusive growth. India is poorer, bigger and more heterogeneous than Japan. On the other hand, technology has made it easier to set up new industries (smaller-scale factories, for example), to manage production, and even to innovate inside a technology frontier that has itself been pushed out at an incredible rate. The key to inclusive growth is domestic production of consumer goods that are affordable to large numbers of Indian consumers – not just watches and bicycles, but mobile phones, kitchen appliances, energy generating devices and more.

This last point suggests that the idea of Track 1 and Track 2 reforms, so clearly articulated recently by economists Jagdish Bhagwati and Arvind Paanagariya, may be dominated by a reform agenda that integrates the need for growth with inclusion, and goes beyond mere redistribution or trickle down.

To support the growth path outlined above, there are three crucial areas where the national government needs to focus, beyond basic health and literacy. First is a large-scale, effective set of vocational training programs: there has been much talk on this front and little achievement. The private sector probably needs to be incentivized to make something happen quickly. Second, the government needs to fix the mess in electric power generation – this is well-documented as a prime constraint on growth. My earlier calculation suggested over a percentage point of growth is lost each year.

Third, and most difficult, the national government needs to overcome its own corruption and inefficiency by devolving responsibility and authority to the states, and from there down to cities. Old fears of national disintegration are no longer valid. Political power at the centre can be just as well sustained through sustained economic betterment, as opposed to short term handouts. Political parties at the national level need to understand that this is possible. A future Indian spring can be a true blossoming, or it can be like the Arab one so far.

How Can Indians be Happier?

September 15, 2013

The most obvious aspect of the Bhagwati-Sen debate on Indian economic policy is the question of trade-offs between growth and redistribution. A subtler and deeper issue, central to Amartya Sen's work, is that of goals. Gross Domestic Product (GDP, or its cousin, GNI – Gross National Income) per capita provides a single number, capturing purchasing power, and therefore a sense of the standard of living that people can afford. But this misses many complications, having to do with the imperfections and gaps in the ability of markets to value what we really care about.

The UN Human Development Index (HDI) creates a different numerical measure of well-being, including GDP, but also other dimensions of our lives, such as how healthy and how educated we are. But it is still somewhat arbitrary in its weightings of different outcomes, and it still misses some things that matter to us for our well-being. Can we do better in tracking average well-being?

The World Happiness Report (WHR) is precisely designed to get a better understanding of how well off people are in different countries, and what contributes to their sense of well-being. The data comes from asking people carefully calibrated questions about how they evaluate their own life circumstances, with answers chosen on a numerical scale. "Happiness" may be a fuzzy concept, difficult to pin down, but, on average, people can give an accurate sense of how they

view their lives. Different surveys can distinguish between temporary and transitory feelings and emotions on the one hand, and an overall, longer-run evaluation of life conditions.

The latest WHR is the second annual effort in what may be a major step forward in understanding systematically what contributes to our overall well-being. In turn, it may help policy makers do better in setting their priorities and choosing policies. To make this concrete, look at where India stands. First, the facts. In the 2013 WHR, India ranks 111th out of 156 countries surveyed. For comparison, the US is 17th, China is 93rd, Bangladesh is 108th and Pakistan is (a surprising) 81st. The IMF GDP per capita rankings out of 187 countries, on the other hand, are: US (6), China (93), India (133), Pakistan (141) and Bangladesh (154). And the HDI rankings, also for 187 countries, are: US (3), China (101), India (136), Bangladesh (146), Pakistan (146).

Note that, unlike the HDI, the happiness ranking does not directly include GDP/GNI per capita – it is based on asking people directly how well off they feel. Hence, by comparing the happiness ranking with GDP per capita, one can get a better sense of the importance of material conditions. For the world as a whole, and for most regions and countries, GDP per capita is the most important variable in explaining happiness (there is a larger, unexplained residual). But “social support” is a very close second. Social support is measured by yes-no responses to the question, “If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?” The remaining four important, identifiable variables that seem to explain happiness are, in order: healthy life expectancy, freedom to make life choices, generosity, and perceptions of corruption.

The initial take on the data does not provide anything new or surprising for India: material conditions (GDP per capita) matter, as does health. This is in concordance with our familiar indicators of progress. But there is one interesting nugget: India was significantly less happy in 2010-12 compared to 2005-07, despite being richer. What happened? The measure of perceived social support fell dramatically between the two periods. And this happened in a situation where the perception of social support in South Asia is far lower than in any other region of the world.

The data need further investigation and understanding before policy implications can be drawn from them. But the happiness index and its explanatory variables provide some beginning for possible policy innovations. If India’s lack of social support is a consequence of social fragmentation, low trust or erosion of extended family support structures, will government transfer programs address it, or are deeper changes needed? Indeed, is government action the place to look for possible improvements in societal structures that will increase perceived well-being? The WHR finds that trust in national government is not correlated with happiness (subjective life evaluations), but that government effectiveness, reflecting aspects of honesty and effective delivery of public services, is strongly correlated with life evaluations.

Perhaps the preliminary lesson of the WHR for India's policymakers is therefore the following one. Before trying to fix problems that have deeper social causes, stay focused on the basics, these being material well-being as measured by average income and by healthy lives; and before doing anything else, figure out how to make the government itself more honest and effective in whatever it needs to do most.

India's Other Missing Middle

November 18, 2013

The idea of a missing middle in India typically refers to the relative paucity of mid-sized firms. India has many very small firms, and a few very big ones (by Indian standards), but the small ones tend not to grow. This characteristic raises a host of questions about the efficacy of government policy and policy thinking, since it is the growth of firms that creates new jobs, and new jobs are sorely needed in India. But there is also a new angle on the missing middle, which looks at how economic activity is geographically distributed. Here, the missing middle is the lack of growth in medium-density clusters of economic activity. The big cities and now the villages (especially those connected by new roads) may be doing well – though starting from different bases – but the challenge for future growth will lie in India's towns and smaller cities.

Klaus Desmet, Ejaz Ghani, Stephen O'Connell, and Esteban Rossi-Hansberg have recently analyzed how employment density in India in the year 2001 was related to employment growth over the subsequent five years. Employment density is closely related to city size, with the big metros having the highest densities. In the case of manufacturing, the pattern they found suggested that subsequent growth was, on average, higher the lower the initial employment density. This pattern is indicative of employment spreading out to smaller cities and towns (with lower initial densities). It is what we would observe if the disadvantages of increased congestion outweigh the advantages of clustering in a location that already has infrastructure, both physical and social.

However, manufacturing in India is a small, anaemic sector of the economy. Fixing its problems relates to the first kind of missing middle, that of the size distribution of firms. The country's growth has relied heavily on the services sector. Here the evidence from India is different. In services, initial employment density that is either low or high is associated with subsequent employment growth, but this is not so much the case for the medium-density clusters. This result holds for informal as well as formal sector firms, and contrasts with the pattern for the United States and China, where one sees a dispersion of economic activity. India's second and third tier cities are not generating as many jobs as one might expect as the country grows richer.

Does increased geographic concentration matter? There are a couple of reasons for concern. One is the strain on the physical and social infrastructure of the big metros. But all towns and cities have to deal with this as they grow. Another, perhaps more important, is that the metros are

distant in many ways from India's rural majority. Their first step to climbing up the economic ladder may be interaction with the economies of towns close to their villages. This is what emerges, for example from the analysis of Shilpa Aggarwal, which I discussed in my last column. If that first step is a limited one, with few and low quality employment opportunities, building rural roads may not do much for inclusive growth.

Indeed, the four authors of the study of India's employment geography take a close look at what holds back India's medium-density clusters, and the results are clear and striking. In explaining the advantage of India's big cities over the second tier, access to basic utilities such as tap water or toilets does not matter. There are only two things that explain what is happening. One is the percentage of population with postsecondary education. The other is the percentage of people with access to telecommunication services. In the latter case, one can conjecture that the lack is not that of mobile phone service, which has penetrated India deeply, but rather the availability of reliable broadband infrastructure and services that such infrastructure makes possible.

The lesson that I would draw from these results is that India's policymakers, sitting in the capital, may have a blind spot with respect to their country. They may see the possibilities for cutting-edge economic growth in cities which are already dense with India's best and brightest, and where investment flows naturally. They may see the needs of India's villages, where poverty is the most pervasive, and where the big blocks of votes are. But they may not see the potential of the country's second and third tier cities and towns, which form the crucial rung in the ladder of India's growth. If they did, they would focus attention on increasing the economic potential of these clusters.

Indeed, the problem lies partly with centralization: the view from the state capitals is likely to be clearer and more balanced. If states were given funds and clear mandates to develop telecommunications infrastructure and increase access in targeted medium-density clusters, one might begin to break the barriers that hold them back. Of course, there is no magic bullet, and the governance capacity of these cities and districts needs to be built up for sustainable economic growth. But paying attention to the problem is a start.

New Year Wishes

January 1, 2014

It is always good to start out a new year on an optimistic note. Optimism leads people to make New Year's resolutions, which occasionally do get carried out. I have some resolutions as well, but they are resolutions for others, so they are really wishes. The others I am thinking of are important groups of people in India, people who can really make a difference to the lives of 1.2 billion of their fellow citizens. These are powerful, intelligent people, so they can actually be game changers. Of course there are so many things in India that can be improved, and so many obvious benefits to strive for, especially in health, education and job creation. But many of those

changes require large-scale efforts over several years. To some extent, that is true of any change that truly makes a difference in a country as large as India. But for the things I have in mind, change can truly start at the top. Here are my four wishes.

First, I wish that the 14th Finance Commission challenges the status quo of the system of intergovernmental transfers. Recently, a committee chaired by Raghuram Rajan, Chief Economic Adviser at the time, offered an alternative methodology for measuring underdevelopment, on which to base these transfers. This was more in the context of Planning Commission transfers and questions about the validity of the “special category” for some states, rather than Finance Commission tax sharing recommendations. But the committee’s suggestions were all in the wrong direction, in my view. India needs a simpler, more transparent, more unified, and more limited system of intergovernmental transfers, with the last goal being achieved by giving state and local governments greater tax authority. I wish that the Finance Commission proposes specific changes along these lines, to create foundations for better incentives for sub-national governments to manage their finances and their performance.

Second, I wish that the Union Finance Minister and the Empowered Committee of State Finance Ministers quickly comes up with a deal to implement the Goods and Services Tax (GST). The GST seems to have become an odd political football. The introduction of the Value Added Tax (VAT), which also took time but was accomplished smoothly, was much more of an innovation than the GST, which extends the VAT concept, but also broadens the tax base and the scope of centre-state coordination. India is under-taxed for its income level, and with import duties an inefficient and unattractive alternative in a world of complex production networks, failure to move the GST forward represents extreme negligence on the part of India’s political leaders. There is scope for increasing tax revenue enough to make sure that neither the centre nor any state suffers from the changeover.

My first two wishes are complementary, and doing one can help the other. My third wish risks being too broad, but I will try to narrow it down: it is a wish for Raghuram Rajan and the vast institution he heads. India’s system of financial intermediation is, on the whole, terrible. Financial savings are not being collected and channelled to good investment uses anywhere near what is possible. The possibility frontier has shifted out because of technological innovation, which improves information collection and analysis. Indian banking needs more competition and better monitoring to become more efficient and increase its reach. Capital markets need better regulation, with greater clarity but also greater freedom to innovate. Reliable systems of credit rating need to be developed for firms and households. India can quickly achieve much greater financial inclusion and better financial intermediation at the same time, if the wheels are put in motion.

My final wish is for India’s elite diplomats. India’s global aspirations are exposing the fact that this domestic elite has much lower status abroad. Nominally, foreign policy and global strategy are set by the political leadership, but I wish that the Indian Foreign Service (IFS) would rethink

its role, going beyond the polish of conventional diplomacy to direct the ground-level implementation of a global strategy that interweaves economic and political objectives. This will require greater resources in India's foreign missions, and creation of webs of influence in countries that matter most for India. The trick is to do this subtly enough so that it is not abrasive. India's politicians have to support this change, but the financial cost would be minimal, and the IFS can and should take the lead in conceptualizing this shift.

These are my four very modest wishes for India for 2014. Modest, in that they do not directly address the huge challenges of providing food, health care, education or jobs to the hundreds of millions who do not have enough. Modest in that their implementation can be started by relatively small groups of people, those who already wield power and influence. I think if these wishes come true, India will have a very Happy New Year.

Innovation

Schumpeter and Three Idiots

August 19, 2010

Economic headlines in India focus on macroeconomic management. Soaring inflation, a burgeoning fiscal deficit, or gyrating exchange rates all affect the economy's health, but prudent macroeconomic policies only go so far. Long run growth depends on factors like investment, innovation and trade (a different expansion of the initials IIT!), which do not receive as much attention. Investment is perhaps the most basic driver of growth, since capital accumulation raises labor productivity and per capita output. High rates of investment helped East Asia grow at rates never before seen. India, too, has seen higher growth associated with higher rates of investment.

International trade in goods and services has also helped India grow faster. According to economic theory, liberalizing trade in goods should have just a one-time effect on output, rather than a permanent effect on growth, but the one-time effect could be spread over decades. Openness to trade also brings new capital and ideas along with products and services, and these can give boosts to long-run growth.

India is a very different country now than it was two decades ago. Greater economic openness has contributed to that difference, changing attitudes towards foreignness, reducing the perspective of forbidden fruit. So did the openness of the United States, which allowed Indians to migrate there, succeed economically, and now start to bring back capital and ideas to their home country.

The hugely successful movie, *Three Idiots*, plays off the themes of globalization and economic success. One of the unsympathetic characters in the movie succeeds as one of those US migrants;

another, also apparently with US links, cares only about the prices of things, not the values of people. The heroes of the movie are more indigenous types, and carry the message that human values and love of learning for its own sake matter more than material success. In that sense, there are echoes of themes found over five decades ago in films such as *Shree 420*, or in the 1970s *Roti, Kapda aur Makaan*: the moral corruption of business, wealth and success. The source of this corruption is now multinational, but its essence is the same.

But in the past, the dilemma was that honesty meant poverty, or at best a struggling middle-class existence. Hard work was no guarantee of success, or even of a job. The heroes of *Three Idiots* have very different options. One hero is rewarded with a good job for being courageously honest; another successfully pursues his creative passion. And their inspirational friend, the son of a gardener who loves learning and problem-solving, has 400 patents to his name a decade after graduating. This is a world that did not exist for Indians a few decades ago. *Three Idiots* can decry the rat race and blinkered pursuit of success, while offering a much more glamorous alternative, based on creativity and innovation.

The alternative, though, remains elusive for the majority of Indians. The matching of education with talent requires reform of the system of education, which the film calls for repeatedly. A different system may produce graduates that are more creative and innovative. However, the other shoe that has to drop is the opportunities that await those new graduates. India's economy simply does not generate enough new jobs, especially given its demographic trends. Investment and trade always run out of steam as growth drivers, with innovation as the only source of sustained growth, in a process that Joseph Schumpeter called "creative destruction."

In Schumpeter's story, entrepreneurs are the vessels of creative destruction. Inventions have to be tested, refined, made cost-effective, and brought to market to make a difference to the economy. Entrepreneurs play this role, creating new companies and new jobs. To do this, they need an ecosystem that brings together money, ideas, specialized skills, and experience. India does not have that yet. Starting a business in India is difficult. Failure is still not accepted, making risk-taking harder. The legal system is unwieldy and inefficient. Reforms of corporate governance, bankruptcy procedures, and competition policy are all in the works. Legal system reforms are also on the agenda. For venture capital to flourish, a mix of financial sector reforms and tax policy changes are still needed.

So, to get from the struggles of simple Raj 55 years ago to the easy success of Phunsukh Wangdu, a set of coordinated policy changes are required, the impact of which will not show up in any single number like the inflation rate or exchange rate, but instead in the way that thousands or millions of new ideas get translated into market-ready products and services. Schumpeter was pessimistic about the ability of democracies to support entrepreneurship. The question is whether democratically-elected politicians have any incentive to do so, if simpler ways of winning votes are available. One answer might lie in fostering links between universities

and industry, to create incubators for commercialization of new ideas, so that higher education reform and job creation are aligned. These could be a creative construction.

Innovation and Taxes

September 16, 2010

India is continuing with major reforms of its tax system. These reforms began with liberalization, and included cutting tax rates and rationalizing enforcement and administration. Tax reform has been an important contributor to the country's improved economic performance. The latest effort on indirect taxes is the move towards a unified national goods and services tax (GST). On the direct tax front, the new direct taxes code (DTC) bill has just been tabled in parliament.

A major guiding principle for tax reform is the goal of reducing distortions in economic activity that taxes can create. Tax rates that are too high, or taxes that apply to narrow groups, are more distortionary than lower rates and broader tax bases. Reforms of indirect and direct taxes are meant to cut down on distortions and improve economic efficiency. Lower rates applied more broadly and evenly, without overlapping taxes or exemptions, are part of the GST and DTC. Another principle, aligned with the first, is simplicity. Simplicity makes tax administration easier and more transparent. It eases tax planning. The GST and DTC are both simpler than their predecessors.

Economic theory underpins these tax design principles. But economic theory also contains the seeds of complexity for tax systems. If the market does not work perfectly, there can be a theoretical case for using tax policy to ameliorate the problem. A carbon tax to deal with global warming is a good example. As we know from recent experience, capital markets can be very imperfect in their functioning. Sometimes it might make sense to tax capital market transactions, if they increase instability, though this is difficult to determine a priori, and so can be a dangerous argument to make. On the other hand, many imperfections in capital markets restrict borrowing and lending relative to what would be most efficient. This is bad, because investment is a driver of growth. This is even more true when investment comes with innovation (and not just "more of the same"). Innovation is the only driver of *long-run* growth, the "lever of riches."

Innovation-driven investment is subject to high risks, because it can be very uncertain whether the innovation succeeds or not. Hence there may be a case for giving such investment favorable tax treatment. This goes against the principles of simplicity and non-distortion, but so it goes. Indian business has slowly been earning credibility with policymakers, and the tax treatment of the nation's firms has steadily improved, rewarding the government with increased revenues to fund social welfare schemes and investment in basic needs (which is partly what taxes are for).

The new DTC, like the old law, provides generous tax treatment for research and development expenditures by corporations. This encourages investment in innovation, but it assumes that the

money is there to be spent in the first place. A thornier problem is how to encourage channeling capital to truly innovative ideas, ones where there is no company in the first place, maybe even no industry. This is where the idea of “venture capital” comes in: high-risk, high reward investment in really new ideas. Silicon Valley grew using this model of financing innovation. It does not work perfectly (recall the dot com bubble), but the venture capital model has fueled incredible innovation and worldwide growth.

Venture capital in India has come a long way in the last decade, but it is still a puny source of funding for innovation. Most of the money goes into firms and ideas that are not really that new, so that it is hard to distinguish from the more generic private equity investment. Part of the problem lies in non-financial barriers to entrepreneurship, but the tax system also plays a role. In fact, those other barriers give even more reason for using tax incentives to spur risk-taking and innovation.

Currently, favorable tax treatment for venture capital (VC) funds is restricted to nine arbitrarily chosen, bureaucratically defined sectors. Investors in other sectors have to use the archaic and unsuitable organizational form of “trusts.” Last year’s DTC proposal would have removed the sector restriction, but the current bill backtracks. Foreign VC investors can use offshore tax-treaty havens for favorable tax treatment denied to domestic funds. The new DTC may level the playing field, but only by going after the foreigners too, with new general anti-avoidance rules (GAAR), and that only works against risk-taking and innovation. And the new capital gains rules appear to disadvantage investors in VC funds where the exit is not an initial public offering, in which case the long-term tax rate will be higher than before.

The new DTC is a significant improvement over the existing tangle of arcane, archaic laws. It will achieve greater simplicity and reduce distortions of economic activity. But it misses a chance to do something positive for India’s innovation environment, by using tax reform to fuel high-risk, high-reward investment for sustained growth.

India’s Manufacturing Muddle

July 28, 2011

India’s new National Manufacturing Policy (NMP) is just around the corner. Newspaper reports have provided some glimpses of the thrust of policy changes, with stated goals of creating 100 million jobs and increasing the manufacturing sector share of GDP from 16 to 25 percent by 2025. Several innovative proposals have surfaced. One is to provide capital gains tax exemptions to small-scale enterprises, allowing them to raise equity by selling inherited land. Another is to create joint sinking funds in specified manufacturing zones, allowing speedier resolution of payments to labor that loses jobs. Much has been made of greater flexibility for environmental clearances. Unfortunately, this is probably going to result in greater social costs, and may not be

the main culprit in constraining manufacturing growth, despite the recent attention given to this issue.

The villain of the piece instead remains India's labor laws, not environmental regulations. It seems that the Labor and Employment Ministry remains reluctant to change, and this problem has to be overcome. The issue of labor laws has been debated for some time. But recently, Albert Bollard, a doctoral student at Stanford University, has provided a detailed and convincing empirical analysis of their consequences. He shows that labor regulations contribute to unduly high wages in the formal sector, and to the "missing middle" of medium sized firms in Indian industry.

But we know a lot more about Indian manufacturing than the negative consequences of labor laws. Nicholas Bloom, also at Stanford, together with various co-authors, has recently documented that management practices in India are often weak, by measurable criteria, and with measurable consequences in terms of reduced financial success. Several years earlier, Pankaj Chandra, now Director of IIM (Bangalore) – again with co-authors – carried out a rich and detailed survey of India's manufacturing competitiveness. Like Bloom, he found poor shop floor practices. More broadly, he also found lack of best practices in supply chain management and attention to innovation. Chandra and Bloom separately identify lack of trust along the value chain of Indian manufacturing, and specific practices that contribute to that lack of trust, such as delays in reimbursing suppliers. Hence, problems in India's manufacturing go beyond the obvious problems in the policy environment.

There are several inferences to be drawn from these detailed surveys and analyses. First, inefficiencies in management are most likely indicators of lack of sufficient competition. India needs a more effective competition policy. More broadly, it needs an overhaul of the legal frameworks governing the doing of business in the country. This is happening, but slowly.

Second, a more robust system of financial intermediation needs to be built. There are two aspects of this. One is lubrication of the supply chain, through short term credit from financial institutions – this needs to be complemented by more efficient legal enforcement of contracts and associated financial obligations. The other is better access to financing for investment and innovation. This will require innovations in legal structures for providing such finance, including venture capital. India's financial sector needs to do a much better job of serving small and medium firms: this issue is outside the area of manufacturing policy, but critical to the success of manufacturing.

Third, what comes across in the studies, as well as in interviews with entrepreneurs in manufacturing, is the extreme shortage of skilled workers in India. (But Bollard shows that the wage premium in the formal sector is not entirely explained by returns to skills.) The problem extends from traditional education at all levels to a wide range of vocational and practical training. Manufacturing policy will not succeed without correcting this problem of skilling the

population. The approach has to be broader than the envisaged training of rural migrants and the urban poor for employment in the new manufacturing zones.

So, the NMP helps to focus on a critical area for sustaining economic growth in India, and for creating jobs. It has glimmers of the right policy changes, including some innovations to increase access to capital and reduce transaction costs. But to succeed, complementary reforms in competition policy, financial sector functioning and education and training will be needed. This is different than the piecemeal measures included in the NMP: each of these areas needs broad and deep overhaul.

Finally, policy makers have to realize that active government policy has its limits. Plans for a Manufacturing Industry Promotion Board, and central guidance on the state governments' own industry policies, may be less effective in the Indian context than making sure that state-level policies are graded against best-practice benchmarks. India's failure to make any significant progress in its ranking on the World Bank's Ease of Doing Business Index – which provides such a benchmark – is telling. Active industrial policy cannot make up for policy-induced high costs of doing business.

Imagining India 2.0

May 6, 2012

Recently I attended the US-India Business Summit West, in Silicon Valley. The stellar array of speakers was capped by a closing keynote from former US Secretary of State, Condoleezza Rice, making the case for a global alignment of nations to promote “free people and free markets.” The US-India Business Council, which represents US business interests in India, naturally expressed concern over the policy uncertainties and lack of some key economic reforms in India. The pause on FDI in multi-brand retailing and the recent Budget pronouncements on taxes, seemingly threatening arbitrary discretion in making tax claims retroactively, figured prominently in these concerns.

Panels on innovation and investing were the most enlightening, however, almost exclusively featuring entrepreneurs and investors of Indian origin. As one would expect from those trying to make the future, either through implementing new ideas or funding them, there was a quiet optimism that provided some balance to the macro concerns expressed at other times during the day, which also dominate the headlines. This is not to say that the only optimism came from Indian Americans. Senior executives from Cisco, VMWare and Walt Disney International also gave examples of how India represents opportunities, or how it can take advantages of emerging opportunities.

One theme that I detected was the continuing potential of information technology to make a difference for India's future growth. One example was for low cost and better quality delivery of

educational content and services. Making this work will not be easy, but it represents a possibility for leapfrogging much of the conventional development of universal education in the West. Broadband access and low cost access to information devices (from mobile phones through tablets, laptops and desktop computers) can play an enormous role here, if not completely substitute for classroom education (vocational training and science and engineering education cannot do without physical facilities, of course).

Another information technology example is the proliferation of IT-enabled jobs, ranging from simple data entry, checking for accuracy and classifying photographs, to HD-animation and sophisticated software development and design. This process is well under way of course, but the message was that new possibilities are opening up all the time.

Another theme emphasized the potential for innovation in general. Several speakers suggested that the Indian market has reached a level of size and sophistication where indigenous innovation becomes more likely. Process innovations that promote efficiency and cost-savings – still epitomized by the Mumbai *dabbawallas*, Aravind Eye Hospitals and Narayana Hrudalaya – have great potential in India. One way to overcome some of the problems of inefficient supply chains may be through leapfrogging innovations that leverage increasing Internet access, as Flipkart has done. The UID system, as it rolls out, may provide an identity infrastructure that allows for innovations in payments, marketplaces, education and medicine, as well as in shopping.

A third idea was the importance of clusters. These can include conventional large cities, which have historically served as growth poles, but also medium and smaller towns, in geographic proximity. One emphasis here was on the need to provide the physical infrastructure for the inevitable rapid growth of these clusters, and to the extent that these are many smaller sets of infrastructure (housing, water and sanitation, power, broadband access) this may change the way that policymakers want to think about the scale and financing of these projects (as opposed to the enormous needs of individual transportation hubs and metropolitan cities).

Physical clusters go hand-in-hand with entrepreneurial ecosystems. Several speakers noted the lack of role models and mentors for entrepreneurship and innovation in India. This is changing slowly, and the shift in aspirations away from government jobs or politics as routes to success represents the gradual change in Indian societal attitudes towards business. Indian American entrepreneurs, as well as their home-grown counterparts, represent the development of these role models. So, too, do the venture capitalists and private equity investors that are now setting up offices in India, rather than flying in and out.

What can the government do to turn imagination into reality? Many of the speakers (including entrepreneurial legend Vinod Khosla) were pessimistic about the government's ability or capacity to play a positive role in innovation. Nevertheless, infrastructure and institutions are traditional areas where the government can create a fertile field for growth. One might argue that there could be more creative thinking within the government, to examine how it can promote

innovation at different levels, for the poor and middle classes, as well as the big businesses that will do well whatever the government does. It may want to consider whether short-term revenue extraction is worth the growth costs. For example, lower-cost spectrum with the right level of competition could translate into faster Internet penetration and access to new services and job opportunities. Forgoing revenue on this front means finding expenditure savings elsewhere. Indian governments promise everything, and hence cannot deliver. India 2.0 will need a government that prioritizes more intelligently for inclusive growth.

Manufacturing: Getting to 25%

May 14, 2013

India's manufacturing sector has played an unusual role in the national growth experience, compared to many other developing countries. In 1950-51, manufacturing was about 9% of GDP. By 1979-80, this ratio came very close to 15%, but thereafter has barely increased. In this context, the National Manufacturing Policy's (NMP) goal of increasing manufacturing's share to 25% by 2022 is ambitious indeed.

One of the motivations for focusing on manufacturing growth is, of course, its potential to generate employment for the unskilled or semi-skilled. South Korea provides a striking example, having increased the manufacturing sector's share of employment from 1.5% in 1960 to 26.9% in 1990. The NMP states, in fact, that "Over the next decade, India has to create gainful employment opportunities for a large section of its population, with varying degrees of skills and qualifications. This will entail creation of 220 million jobs by 2025 in order to reap the demographic dividend."

Recent assessments about achieving this goal are pessimistic. The Economist magazine titles its article on the subject with "What a waste: How India is throwing away the world's biggest economic opportunity." This article goes on to list the well-known case for reforms in labor markets, infrastructure, education and governance, and there is no need to go over them here. With respect to manufacturing, it is also helpful to understand the state of play at the ground level.

In 2002, Pankaj Chandra and Trilochan Sastry summarized the findings of the previous year's National Manufacturing Survey (NMS), which focused on the organized manufacturing sector, representing less than 1% of the country's firms at the time, but employing 19% of its industrial workers and contributing almost 75% of gross value added. They concluded, "[M]anufacturing strategy of most firms is still not addressing certain fundamental issues of competition: need to change product mix rapidly, need to introduce new products based on indigenous R&D, need to use process innovation and quality improvement process to reduce cost of operations and consequently price of product." They also noted the lack of spending on R&D, and the relatively

small numbers of employees with advanced degrees, as well as pervasive supply chain weaknesses.

In 2009, Pankaj Chandra analyzed the next NMS, which was conducted in 2007. Supply chain management remained a key weakness in the later survey, and investments in R&D remained low, despite perceptible benefits to innovation. The firms surveyed indicated a focus on quality, and of trying to achieve that through process improvement, but large scale and low cost were not major goals of the surveyed managers. Chandra's report also argued that management weaknesses contributed to lack of innovation, as well as to inefficiencies in plant location and supply chains.

My own reading of the evidence presented suggested that there was under-investment in both physical and human capital, reflecting high financial costs as well as an unfriendly policy environment. At the same time, Indian manufacturing firms were able to make strong profits in this period, despite their inefficiencies, suggesting a lack of adequate competition in manufacturing. In other words, a lack of competitiveness was partly traceable to a lack of competition.

A 2010 joint study by the National Manufacturing Competitiveness Council (NMCC) and the National Association of Software and Services Companies (NASSCOM) focused more specifically on information technology use, but it made several similar points as the two NMS studies, with newer survey data to back them up. It concluded, "ICT adoption levels in manufacturing firms were primarily influenced by their management team. More than three-fourth of the companies especially in the micro and small firms category are strongly influenced by the owner/management team for their ICT investments."

All of these analyses point to a somewhat neglected aspect of the deficiencies of Indian manufacturing, namely the lack of adequate specific human capital in management. The NMCC-NASSCOM report focuses on increasing IT adoption in Indian manufacturing, but its general recommendations for a systemic approach are more generally applicable. The key is broad participation from many parts of the business ecosystem. The report emphasizes the potential role that can be played by national and local industry associations in developing best-practice business process re-engineering guidelines to cope with the organizational changes that are often needed to benefit from investment in innovations. Human capital development to overcome lack of appropriate skills can be addressed through improving the quality of government provided training programs, and tax incentives for firms to spend on this training. In fact, the latter approach of incentivizing the private sector might be the most efficient.

The bottom line is that creating employment requires having enough people with the skills to manage employees in situations of competition and innovation. There are many larger issues of economic reform, across the board, which affect productivity and employment. Indian managers

operate in a difficult environment. It is a long haul to change that environment, but a more immediate impact may come from promoting managerial skill development.

Managing India's Manufacturing

May 19, 2013

In my last column, I suggested that the quality of management may be a critical stumbling block to increasing the size of India's manufacturing sector. The clues I gave last time came from studies supported by the National Manufacturing Competitiveness Council. But there is still more evidence, from different academic studies. For example, Nicholas Bloom and John van Reenen, in a study published in 2010, found that Indian firms with strong management practices are comparable to the best US firms on this dimension. However, there is a thick tail of badly-run (by their measure of management practices) Indian firms, which often neglect basic tasks such as collecting and analyzing data, setting clear performance targets, and linking pay to performance.

In another study, Bloom and different set of co-authors performed a controlled experiment with a sample of Indian textile firms, and found that the treatment firms improved productivity by 17% over the control group, by implementing specific improvements in operations. The focus was mostly on the basics of operations, such as the organization of the factory floor, how parts were stored or moved around, how inventories were logged and stored, how machinery was maintained, and so on. In the experiment, the advice came from high-priced consultants (whose services were paid for by the researchers), but the improvements were not rocket science, and did not seem to require expertise at the level of a modern business school graduate. Finally, in a study I did last year with Shruti Sharma, looking at the productivity effects of investments in information technology in Indian manufacturing plants, we found results consistent with the hypothesis that the quality of management mattered for determining these impacts.

Ultimately, the pressure to remove inefficiencies in manufacturing has to come from competition: last week I noted that inefficient firms still made high profits, and that also seemed to be the case with the sample of textile firms studied by Bloom and his co-authors. But this does not foreclose the possibility that removing constraints on management quality will make things better. Certainly, if and when regulatory and business environment constraints on Indian manufacturing get relaxed, the availability of appropriately skilled management will be critical.

How is this availability to be achieved? India has certainly expanded graduate management education very rapidly. However, there are problems of quality in many of the new institutions. Even in the best management schools in India, the focus is very much on fast tracks to success, typically through focusing on finance or marketing or general management. Just as in the United States, classic roll-up-your-sleeves, shop-floor management is quite neglected in India. However, for the US, the issues are different: focusing on finance and marketing has taken away from

high-end innovation. This is why many Silicon Valley firms still shy away from hiring MBAs, and prefer to train their managers with customized in-house courses. Such courses are difficult for smaller firms to afford, though, and will not provide the large-scale solution that India needs.

Indian manufacturing, if my reading of the evidence is right, needs basic managerial training, and lots of it – not just for fast-track executives, but for every level from factory supervisors on up. The implication is that not all of this training has to be in the form of MBA degrees or equivalents. Indeed, short certificate courses are probably best suited for many of the skill gaps that lead to basic inefficiencies on the shop floor. Given the shortage of faculty, the solution is going to have to include development of online materials that can be accessed by large numbers.

One can envisage this effort originating at the level of individual industries, since manufacturing processes can be quite specific to the nature of the product. Of course, there are many management techniques that are more generic, such as basic accounting or inventory tracking. The Indian information technology industry is well known for training its workers, most of whom are skilled professionals, and for using global standards of certification. In their case, they were able to generate the cash flow needed for internally supporting such efforts, but some kind of tax credits may be a good idea for manufacturing.

One hopeful example is the Munjal Global Manufacturing Institute, at the Indian School of Business's Mohali campus. This is being developed in collaboration with the Massachusetts Institute of Technology, and will probably be aimed at the high end of the market, but it may provide a role model for mid-market offerings. The key is for industry to be involved in shaping the curriculum and working with faculty (preferably including ex-managers), so that the connection to shop floor challenges remains strong. Programs that pull in experienced manufacturing managers from around the world to share their knowledge will also be more valuable. Of course, creating and delivering such programs has its own management challenges and constraints, but a start has to be made, otherwise national policy goals will remain pipe dreams.

Investing in India's People

January 13, 2014

My last column had some wishful thinking for the New Year, hoping for tax reform, financial sector reform and changes in how India pursues its global strategy on the ground. These were modest wishes. But perhaps the paramount concern should be what is good for those at the centre of it all: India's people. In 1955, economist Milton Friedman offered these remarks in a memorandum to India's Ministry of Finance, "In any economy, the major source of productive power is not machinery, equipment, buildings and other physical capital; it is the productive capacity of the human beings who compose the society." The implication that "investing in

people” is crucial for economic development has continued to rise in importance in policy thinking.

India’s version of this approach has included national missions for education and health, and now a major push to increase the availability of foodgrains. Like many policy initiatives, targeting and implementation have left much to be desired. But the overall goal of investing in people makes sense, and policy corrections can be made. Mothers and infants are getting somewhat better care, but need even more focused attention. More children are coming to school, and being fed there, but they are not learning enough. Many people in India need more calories (see Heather Schofield’s recent study of rickshaw pullers in Chennai), and may get them with the “right to food,” if distribution mechanisms can be made to work.

What else needs to be done? The next step beyond basic health, nutrition and education is that of skilling India’s burgeoning population of young adults. This challenge has not received the same attention as more basic needs, but it will rapidly grow in political and social salience. Of course there is a National Skill Development Policy (NSDP), in place since 2009. There was a target set of skilling 500 million Indians by 2022. However, it seems that so far only bureaucratic and regulatory bodies have been created. Part of the problem is that skilling is a very heterogeneous goal: it can include everyone from managers to carpenters, plumbers and technicians. Some skills are very specialized, like nursing. Others are more generic. The National Vocational Education Qualification Framework (NVEQF) takes a stab at defining learning standards, but it is short on detail, does not have the right structure, and lacks any specification of learning outcomes. Remember that this failure to focus on and achieve learning outcomes has plagued the expansion of primary education in India.

What else is missing? Four years after the NSDP was put in place, institutional change has not occurred. There has been talk of a community college model along the lines of the United States, but the most significant document, a white paper, on this idea comes from a US-sponsored organization. In September 2013, at a national workshop on skilling India, senior officials spoke of hundreds of existing institutions adopting the community college model and of projects underway, but I could not find a single case study detailing what innovations are being implemented, what works, and what does not. The Ministry of Human Resource Development separates vocational education at the secondary level from technical post-secondary education, and the latter is still disconnected from the traditional universities. One of the strengths of the US model is the articulation and coordination between high schools, community colleges and universities. In India, it seems that the effort is still to get buy-in from entrenched interests in higher education, rather than being at the stage of implementation on a scale that will make a difference.

One major problem with the Indian skilling effort is that it is government-led rather than industry-led. India’s government does not have a tradition of understanding business or industry. The NVEQF is supposed to have had input from industry, but I could not see the impact of that

input in the document. India has little in the way of internships and apprenticeships beyond what happens through the elite business schools. I have seen little or nothing in terms of efforts to learn from Germany on this front, or indeed, the US and its tradition of agricultural universities.

So where does one go from here? Given the institutional inertia, I would hope for a more targeted approach, honing in on specific sectors, occupations and skills to start with, and intensive experimentation with pilot institutions to get a new educational model jump-started. Drawing on a wider range of international experience is also essential in designing these pilots, as well as deeper international collaboration. And government has to allow industry to lead from the front – only those who actually run enterprises have a good sense of what their workers need. Reading government documents on the topic of skilling, I felt there was an air of unreality in them, an airiness in acknowledging the huge task ahead, exhortations and good intentions, but not one concrete example of how things have changed for the better since 2009. I hope I am wrong on this, and hope that I will be proved to be so.

A Blueprint for Reform in India

February 11, 2014

In my last column, I discussed the conduct of monetary policy in India. I suggested that the quality of technical analysis is improving, and that is a cause for optimism. I also noted that what is happening with the quality of leadership and organizational decision-making is another positive sign. While monetary policy is a relatively centralized undertaking, the idea that people and technology can combine to improve economic outcomes is a general one. Individuals acting within organizations need to have their incentives aligned to achieve broader goals, and technology can play an important supporting role in achieving this, as well as changes in organizational structures. Again, these innovations typically need to go hand in hand. In this column I offer three examples to illustrate this proposition: private sector management, public sector schools, and local government.

Evidence has accumulated that many Indian firms display poor management practices. Establishing this claim has required systematization of how to measure good management, and detailed surveys across a range of firms and countries. This knowledge is now firm. Less clear are the causes, but they include lack of training and awareness, as well as lack of external pressures for improvement in practices. Lack of competition plagues Indian industry. Less surprisingly, the same problems are manifest in schools and hospitals, where competitive pressures would be expected to be much lower, and asymmetries of information much higher. In the case of manufacturing firms, there is also evidence that information technology investments increase productivity. Such investments can improve the efficiency of resource use, quality of products, and attention to customer needs. In other words, information technology (IT) has the potential to substitute for the absence of adequate human management. Alternatively, it can serve

to enhance the effectiveness of human managers. Specific examples of this phenomenon are not well documented for India, but one that comes to mind is the early and widespread adoption of Tally accounting software by small Indian firms (not just in manufacturing).

Using IT to improve how businesses run is a natural idea, but there have been two roadblocks. One is that business requires complex coordination tasks, and a correspondingly complex and varied set of IT tools: these have not always been designed or adapted to the Indian context (Tally is again an example to the contrary). The second obstacle is the need for people in those organizations to have the knowledge and training needed to use IT. In fact, the problem of inadequate knowledge and skills is pervasive in Indian business, and not just for using IT. The roots lie in India's broken educational system. Recent research has been documenting the fact that increased government spending on education has not been translated into improved learning outcomes. One remedy that has been suggested is the use of teaching assistants (TAs), who may be more motivated and less expensive than teachers who are primarily government bureaucrats rather than educators. But TAs also lack training, and are likely to get sucked into the deadening education bureaucracy. On the other hand, a range of online efforts in developed countries show that technology can revolutionize education: these include the Khan Academy, the posting of videos of lectures by premier American universities, the spread of online university degrees, and even the numberless how-to-videos on YouTube. IT allows rapid scaling up of the dissemination of knowledge. What is needed is the adaptation or creation of context-appropriate educational content (e.g., dubbing Khan Academy videos in Indian languages), and low-cost access (including bandwidth as well as hardware). At an even more basic level, it is possible to build dedicated machines that teach reading and arithmetic through games. Or one can create smartphone apps.

A final example of using technology is that of local government. Certainly, local governments in India need more unrestricted funds, better trained functionaries, and clearer assignments of functions. But software that allows them to maintain their own financial accounts, see what other local governments are doing, and also to get a view of higher-level government spending and revenues will empower local governments in ways that lay the foundation for actually spending money effectively. The use of IT for governance has often been focused on citizen access to services, or top-level budget management, but providing local government leaders with the right IT tools tackles the weakest link in the chain of information and financial flows.

Of the three areas I have suggested for improving the synergy between people and technology, education is clearly the most important, since it involves young people with flexible minds and internal motivations. Giving India's young people access to educational content and guided learning through IT is an avenue that has not been adequately explored, whether for primary schooling or post-secondary vocational training, or any number of other specific educational needs. Information technology is not a magic bullet for improving learning, but it is a potential game-changer, empowering students and teachers alike.

Jobs and Manufacturing Growth

June 10, 2014

On June 2-3, the Stanford Center for International Development held its 15th annual conference on the Indian economy. Unsurprisingly, the theme was what the new government needs to do to get the economy moving again. Arvind Panagariya laid out a reform agenda for the new government, and highlighted the failure to create enough jobs, due to the lack of sufficient growth in labor-intensive manufacturing. He emphasized the need to create a better environment for business, including the vexed problem of labor regulations. Rana Hasan, presenting work that I have discussed earlier (*Financial Express*, 14 April, What to vote for), buttressed Panagariya's argument, giving evidence that indicators of financial development, business regulations that promote competition and flexible labor regulations have all been associated in India with larger reallocations of labor from lower to higher productivity sectors.

But these pointers on what India *should* do were tempered by the presentation for which I served as a discussant. Arvind Subramanian presented work with co-author Amrit Amirapu that called into question what India can actually accomplish. Building on the work of Dani Rodrik, they argued that within Indian manufacturing there is evidence of catching up of less productive units to more productive units, but there is much weaker evidence of catch up to the global productivity standards. Furthermore, they argued that India's manufacturing sector is shrinking, despite rising profits. These authors, similarly to Panagariya and Hasan, hypothesized that barriers to competition and inefficiencies in the markets for labor and for land contribute to this paradoxical situation. Rising wage premiums for skilled labor and insufficiently dynamic exports were also adduced as possible contributing factors.

This is all very worrisome, because labor-intensive, low-skilled manufacturing is the classic first step toward broad-based economic development. Indeed, inclusive growth arguably should be built around this process of manufacturing growth. Furthermore, Dani Rodrik has argued that the scope for export-led growth is lower than it was in recent decades, and that manufacturing, too, is becoming more skill-intensive and capital-intensive. Then where will the jobs come from that India desperately needs?

In seeking an answer, I went back to some of my own earlier work, revisited a case study from four years ago, and consulted India's foremost academic expert on manufacturing. Pankaj Chandra's own earlier work highlighted factors such as lack of competitive pressure and insufficient managerial quality (a theme in the work of academics like Nicholas Bloom as well), as well as a poor business environment, and he now noted the lack of adequate connections to global production networks that have blossomed especially in East and Southeast Asia.

The case study was an interview I had watched online, featuring Vinod Sharma, a successful electronics manufacturer who was expanding in China rather than at home. Mr. Sharma had

noted the high transaction costs of the tax regime and legislative frameworks for doing business, as well as the lack of an ecosystem for manufacturing, in addition to the usual culprits of costly and unreliable electric power and inefficient labor and land markets. When I asked Mr. Sharma how things are now, he noted the positives of a more competitive exchange rate and rising costs in China, but also the negatives of dented confidence among domestic entrepreneurs and multinationals, due to poor governance, and poor policy choices at the central and state levels, including capricious approaches to taxation and even outright extortion. As a successful entrepreneur, however, he seemed determined to work for improvement in the business environment for his industry, including the elusive manufacturing ecosystem.

Naushad Forbes, head of Forbes-Marshall, a large and successful Indian engineering firm, in his own comments on the puzzle of Indian manufacturing, noted that his firm had become accustomed to minimizing labor use. He also echoed a finding in several academic studies, that Indian industry, after a burst of dynamism in the 1990s, has seen a slowdown in new entry. This is consistent with the lack of competitiveness and industrial dynamism one observes. It is also consistent with the persistence of poor management and lack of investment in productivity enhancing features such as the use of information technology (a finding of my own work with Shruti Sharma).

So the solution to India's lack of growth in the number of "good" jobs that it needs for its growing population of working age is not necessarily a simple one. The evidence suggests that the new government has to combine several different policy reforms in a coordinated manner. This would also have to be done quickly and decisively, to send clear signals to entrepreneurs and foreign investors, since there are lags in bringing new capacity into play, or in innovating in existing units.

My sense of the last government was that it sometimes seemed to have no idea how business actually works for most entrepreneurs (excluding the tycoons with political connections). Listening to smart and dedicated manufacturers such as Vinod Sharma would be one way to fix the problem of incomprehension, and create a manufacturing ecosystem that supports efficient and innovative firms, not just those that are politically connected.