

## THE PARADOX OF INDIAN GROWTH: A COMMENT ON KOCHAR ET AL

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The paradox of India's current success, we learn from Kochar et al., is that it is rooted in what were once seen as some of its most egregious policy failures. In particular, in the 1980s and even the 1990s, one always heard complaints about how India invested so much more in tertiary education compared to countries at similar levels of development, and how primary education, by comparison, was under-funded and not enough of a priority. And it did look like the critics were right: Highly qualified engineers, educated at great public expense, worked as bank officers or sales representatives for large multinationals, or cooled their heels as minor functionaries in the overfilled bureaucracies of large public companies. If they were exceptionally brilliant or fortunate, they won a scholarship to do an advanced degree somewhere in the west. Few came back.

If there was one thing that has worse press in the community of economists today than India's education policy, it was its policy of self-reliance. This meant making everything at home, often behind gargantuan walls of tariffs and quotas. This created an industrial sector that was enormously diversified, at least compared to other economies at the same level of development, and probably in many ways quite inefficient.

Yet, according to Kochar and company, it was the combination of these two "policy errors" that were instrumental in shaping the Indian economy of today. The two things that distinguishes India from any other economy at its level of development are the skill-intensity of its exports and the diversity of what it produces. Indeed, fifteen years after liberalization began the Indian economy seems to be even more diversified than it used to be.

Kochar et al. interpret this as evidence for the importance of experimentation. In the case of the high-tech sector, a version of what they have in mind could be something like this: In the 1980s, the Indian economy had a lot of underemployed engineers who worked in private firms that produced imitations of foreign goods for the domestic market or in public sector firms where there was very little to do, while dreaming of projects that would really challenge them. Sometimes they got lucky; often it was a friend from college who had emigrated and made their way up the corporate ladder in the U.S. and or somewhere else in the west, who needed something done and was willing to take a small gamble, provided the price was low enough.

In the beginning it was mainly a labor of love. The terms were pretty harsh---most contracts for new firms in the customized software industry used to be on a fixed price basis (Banerjee and Duflo, 2000), so that the firm was supposed to bear the entire risk, and the rates were low. But for many this was their one chance to escape to a more interesting life, and in any case the opportunity cost of their time (they often kept their day jobs) was not particularly high and someone often had a room to spare.<sup>1</sup> They worked

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<sup>1</sup> I recall the time in the mid-1990s when, looking for a firm that was a pioneer in doing outsourced work for British Airways, I ended up at Hindustan Aeronauticals (HAL), the public sector firm that made

hard and it paid off. Suddenly everybody started talking about how wonderfully cheap it was to get your low-end software work done in India, and the near miracle of the Indian software industry began.

More generally, the closed economy of the 1950s, 60s, 70s and 80s meant that there was demand for a diverse range of products from the domestic markets. The public sector sometimes invested even where there was no real demand. The rather draconian anti-monopoly regulations meant that most industries tended to be quite competitive; finally, there was an abundance of skilled people. The combination made for many interesting experiments that probably would not have happened in a less dirigiste economy. Most of these trials probably did not get anywhere, but a number probably did. Some people discovered that they were so good at doing certain things that they could actually be competitive at world market prices, even though this was entirely against the broad pattern of comparative advantage, and they would have never thought of trying it out, had it not been for the trade restrictions and public sector subsidies.

I am completely convinced that there is something to this view; there are clearly many things at which Indians turned out to be better than expected. But it seems unlikely that they are better at everything; one would still presume that there would be a lot of churning once the internal prices converge towards their world market values, and that should move the economy in the direction of greater specialization. Nor is it clear why the fact that India experimented with software first (among the developing countries) should mean that it would continue to dominate; now that we know that software can be done in South Asia, why are there not more buyers flocking to Pakistan?

To understand what has been happening in India in the recent years, we need some other ingredients. For the case of the high-tech customized software business, that ingredient is reputation. The money you pay for the software is often a small part of what it costs you; the more important constraint is often time---you have to wait many months or even years to get what you want. If at the end of the period you discover that it does not do what you want and you have to go to someone else, you are now that much behind, and that might cost you much more than the software itself. There is also little hope of getting the software producer to compensate you for your losses—he might not have enough money--and in any case, given how complicated software tends to be, the courts are typically in no position to judge whether the seller had fulfilled what was asked of him. Therefore, you would not want to entrust a firm with an important contract for software development unless you had some faith in its competence and reliability.

In other words, success in the software business is all about acquiring the right reputation. In Banejee and Duflo (2000) we show some evidence of how important this can be. In the late 1990s, firms starting out in the software business had only fixed price contracts, which as we said before makes them bear all the risk, but for the firms that had survived until they are seven or eight years old, less than half the contracts are fixed price. In the rest, the buyer bears all or at least a significant part of the risk even if this is the first

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warplanes. It turned out that the firm was staffed entirely by HAL employees and was run in one part of HAL's extensive premises. My suspicion is that they were not paying for the equipment either.

contact between the buyer and the seller, signaling that they have earned the market's trust. We also observe a similar shift in contracts when the buyer has come back to the same seller for the second time.

Once you have the right reputation, it does a lot for you. You are somewhat shielded from price competition because, as I argue above, what the buyer pays you is only a part, and often a small part, of what it would cost him to not get the right software on time. What is more, it gives you a chance to take on the biggest and the most challenging projects and, as long as you carry it off reasonably well, you become the right person for all the other big projects, while newcomers may never get a chance to demonstrate their caliber. In other words, reputation builds on reputation. Finally, you can leverage your reputation outside your immediate domain of competence—the buyer knows that you value your good name, and you have a demonstrated record of success in what you have done so far.

For the Indian software industry, this has meant that they are now competitive for the most challenging contracts in the business and at the high end of the business; the scale, and the potential for growth they can offer, puts them in a very good position to dominate. It has also meant that they are increasingly thinking of their brand name as their primary asset; this means that they are willing to move parts of their work to other countries, where better or cheaper skills may be available. We will see the top Indian IT companies emerging as full-scale multinationals in the coming decade. Finally, it has meant that many of the biggest IT companies have been able to successfully jump into the IT-enabled sector, where the actual work is quite low-tech (answering phone calls, entering data, etc.) but there is a need for efficiently managing technology.

The same story, *mutatis mutandis*, would also go for the other Indian high-tech success, the biotech industry. Once again, there was a supply of underemployed biochemists, doing research in under-funded university labs, or making slight variants of patented drugs for the Indian market. Once again reputation was key since research (which is what most of the Indian firms do) is probably even harder to purchase on a purely contractual basis than customized software. The Indian industry is successful because it has built a reputation for delivering on its promises, and this should go a long way to ensure its continuing success and growth over the next decade and more.

While I am sure that some of the same elements went into the other well-known Indian success stories—automobile parts, gems, jewelry, etc. —in the vast majority of the domestic-focused manufacturing and service sectors, the continuing diversity of Indian industry is probably at least partly driven by other forces. I suspect that a lot of the story is quite mundane. It is simply that the Indian buyer wants many things that are either uniquely Indian—sarees, spices, spice grinders—or where the Indian buyer is looking for a particular trade-off between quality and price which may be quite different from what the average consumer elsewhere wants—low horsepower motorbikes, cars and vans that can transport many people at low speeds, spare parts for aging machines, etc.

To the extent that this is true, the Indian market is likely to remain relatively closed to foreign competition, at least until Pakistan or Bangladesh or some country with a similar consumption pattern emerges as a potential supplier.

The other big part of the story of India's persistent diversity, in my view, is the failure of the financial sector to pull the plug on firms that ought to have long been shut down. It is well known that there is a lot of "evergreening" of loans in the Indian banking sector--bankers seem to prefer to lend more money to potential defaulters so that they can continue to service the loan, even though this just increases the likelihood of a bigger default in the future. This is consistent with the observation in Topalova (2004) that there seems to be very little exit at the firm level in Indian industry data and the observation in Banerjee and Duflo (2004) that the cross-sectional correlation between the probability of getting a bigger loan and either predicted or realized sales or profits is close to zero. Moreover, at least in some of the faster growing states there seems to be evidence that the slowest growing industries are actually shrinking (Kochar et al., figure 16), and diversification is going down, which is further evidence that at least some of the diversity is a product of sclerosis and as such, a disequilibrium phenomenon.

If the Indian economy continues to grow as it has been, many of these firms will find it harder and harder to survive. On one side, they will find it harder and harder to hold on to their most skilled workers. On the other, especially if they are located in one of the bigger towns, they will want to sell their land. This is already happening--the conversion of factory land in and around big cities into real estate is going apace wherever incomes are growing fast--and may be the reason why Kochar et al. find that diversification is going down in some of the faster growing states.

From the point of view of the banking system, land sales are good news; typically, the land is part of the collateral held by the bank, and it is not easy to sell it without repaying the bank. On the other hand, a firm that is closing because it can longer find the right people may be happy to default on its loans before closing shop. If this ever starts happening in large numbers, which is not unlikely, and in other respects may indeed be desirable, the stability of a number of the banks that have portfolios heavily weighted towards the slower growing states, may become dangerously unstable.

As I have argued elsewhere (Banerjee, Cole and Duflo, 2005), the best way to avoid this is to give the bank's loan officers stronger incentives to help the bank identify potential future defaulters (in part by protecting them from the consequences of the default). The government can then offer firms that are heading towards default some rewards for agreeing to a negotiated exit.

These reforms of the banking sector will also help with the fact, observed by Kochar et al., that the average firm in India is extremely small compared to the average firm in that sector elsewhere. As I have emphasized elsewhere (Banerjee and Duflo, 2005), this is potential source of major inefficiency in the Indian economy, and seems plausibly driven by the widely observed fact that loan officers in Indian banks do not want to lend. In Banerjee and Duflo (2004) we show evidence of extensive under-lending: One particular

instance of this is the fact that two-thirds of loans in one of the leading banks remained at exactly at the same nominal level from year to year, despite rapid growth in sales. Cole (2002) confirms that, as has been widely claimed, under-lending is partly driven by the fact that loan officers are afraid of being subject to an investigation for fraud in the case there is a default on the loan. He shows using panel data from a group of banks that in the months following an investigation of a bank officer lending *from that bank* goes down by 3-5%. Reforming incentives in banking is key

The particular reform that Kochar and company emphasize is in higher education. Given that India can now use all the engineers and scientists it can get, this seems obvious. Indeed greater participation of the private sector, which is what Kochar et al. recommend, is already happening; indeed one might worry that it is happening too fast. The problem is how to staff the many private science and engineering colleges that are coming up, given that every competent engineer and scientist has a very good market elsewhere. Raising teacher salaries will of course help, and is happening in dramatic ways, but it is not clear that the market can continue to bear the consequent increases in salaries, as the demand for potential teachers keeps growing. Moreover, it has obvious negative consequences for equality of access.<sup>2</sup>

The natural solution to this problem is to scale up the number of people that can be reached through a single good teacher by using various technological means, such as video classes and chat-based tutoring. The worry, of course, is that as the conventional checks on quality from the supply side (teacher-student ratios, teacher attendance) become less important, and overall quality could fall precipitously. Indeed, this is already a major concern and there are many well-documented examples of outright fraud in the private educational sector. The most effective way to improve regulation of the quality of education provided by these institutions may be to institute national certification exams (along the lines of the GREs) and publish league tables of how various institutions did. With all the problems of selection, performance of the students on these exams will provide at least some check on the quality of the teaching.

The big open question that Kochar et al. leave us with is how all this fits into the broader picture of exploding regional differences in growth and institutional quality across the Indian states. The fact that the slowest growing states are also the ones with the highest population growth obviously poses a major threat to the stability of India's current relatively pro-growth policy regime. It is easy to imagine a sequence of events where the average voter in the numerically dominant northern states starts feel so isolated from the growth process that he votes for a set of extreme populist policies that derail the growth process.

Migration of course is one possibility. Unfortunately, inter-state migration has been extremely slow in India. This, in part, is a result of the linguistic differences, but also a consequence of the lack of any social protections, which makes it dangerous to travel

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<sup>2</sup> See Banerjee (2004) for theoretical arguments for why a rising skill premium can undermine growth through its effect on the supply of education.

outside the reach of one's social network.<sup>3</sup> The lack of cheap urban housing for poor migrants, a consequence of badly designed and corrupt legal regimes and poor planning, has no doubt also discouraged migration.

In the short run, we therefore need to think of development in these areas. There is now some emphasis on building roads, which should certainly help. The central government also has a backward regions policy but it has nowhere near the priority it ought to be given; in particular, the goal needs to be reformulated to focus on getting at least one thing going in every backward district, so that people feel that they are part of something bigger. This has to be something that is both visible and widely appreciated, and most importantly, it has to be successful, or it will add fuel to the already dangerously high levels of cynicism in these areas. This will take both money and more critically, a real effort to identify what works and how to do it.

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<sup>3</sup> Munshi and Rosenzweig (2004).

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