Discussion

of

Sources of Growth in the Indian Economy

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Introduction

In this thought provoking paper, the authors raise several interesting issues regarding the empirics of growth in India. Their analysis builds on their earlier work and on the study by Sivasubramonian (2004). I want to use this discussion to highlight some of the issues raised in the paper.

The paper is an exercise in Growth Accounting -- a task that is challenging to undertake in India due to a large informal sector, major statistical revisions and a lack of systematic annual surveys. The paper brings quantitative rigor to bear upon assertions that have heretofore been part of the conventional wisdom. Its basic conclusions are:

a. India's success has not been based on strong growth in the manufacturing sector.
b. It is a result of a rapid expansion in service producing industries.
c. Physical capital accumulation has not been impressive.
d. Illiteracy remains high.

The paper is agnostic in identifying the takeoff year for the Indian economy. Given the major revisions that have been undertaken to the National Accounts, I believe that this is the correct perspective.[1]

Methodological Issues

The paper starts out by presenting a general production formulation with time varying shares. However, the framework for analysis that is ultimately used

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[1] These revisions are probably responsible for the current debate between Rodrik and Subramanian (2005) and others.

is standard Cobb-Douglas with fixed shares and constant returns to scale. For example, for the agricultural sector the functional form used is:

$$y_A = A k_1^{\alpha_1} k_2^{\alpha_2} l^{\alpha_3}$$
$$k_1 : \text{capital}$$
$$k_2 : \text{land}$$
$$l \ : \text{labour}$$

with shares $\alpha_1 = 0.25$, $\alpha_2 = 0.25$ and $\alpha_3 = 0.5$. For the industrial and service sector the shares are $\alpha_1 = 0.4$, $\alpha_2 = 0$ and $\alpha_3 = 0.6$.

I have some reservations regarding the authors' methodology. They use fixed factor shares, which may be appropriate to analyzing advanced industrial economies (which presumably are in "steady state") but this mode of analysis does not readily translate to an economy in transition. Further, abstracting from returns to scale very likely overstates TFP.

There is a well-established literature documenting the importance of taxes as a factor in investment and labor supply decisions. Thus, it is surprising to see no analysis regarding the role of taxes and other distortions in this paper.[2]

From the perspective of neoclassical growth theory, one can analyze economic growth and identify anomalies by undertaking two related, but in principle distinct, exercises. The first examines whether changes in employment, investment or capital accumulation are consistent with a given TFP growth rate while the second is an analysis of the TFP growth rate itself. The distinction is important, because each has a different methodology and different results. The paper would have benefited from drawing a distinction between these two exercises. For example, to analyze the problem of changes in employment, investment or capital stock, one should compute the growth model for a given time path of TFP. Conclusions such as "India's priority is to generate

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[2] See the section on 'A Puzzle' in this discussion.

employment in industry" could be misleading because industry employment may in fact be optimal, *given the TFP in industry.*

Similarly, the conclusion that "(it is a) surprise that agricultural employment continues to grow" may be misleading. Hayashi and Prescott (2006) found a similar pattern of agricultural growth in Japan prior to the Second World War.[3] They attributed this to the sizable transaction costs of moving from agriculture to other sectors. It would be interesting to compare results and see, for instance, whether the implied transaction costs in pre-war Japan and current day India are of similar magnitudes. This issue may be related to the problem of low educational attainment. If, for example, the transaction costs of moving from agriculture are high, there are fewer incentives to invest in education.

In the absence of a well-established theory of TFP, one typically needs to resort to anecdotal evidence to do the second exercise and identify puzzles in TFP growth. For example, I would expect the liberalization reforms in the 1980's and 1990's to be related to increases in TFP. The authors compare changes in services across various East Asian countries and conclude that the TFP growth in services is puzzlingly high. It would make sense to likewise compare TFP growth rates across East Asian countries.

Meaningful price level deflators are a crucial parameter input for growth accounting. The lack of a comprehensive price index in India that adjusts for quality and technical innovation is a major impediment in this context. The authors do not discuss this important issue in any substantive way. Typically, the inflation rate for different sectors varies, often considerably. This could potentially bias reported growth rates; in particular, the growth rate for the service sector may be overstated. This is especially likely to be the case in a sub-period where there was a substantial pay increase for the civil service or the public sector, or where there was general wage inflation due to a skill shortage.

This is documented by Young (2004) for the Chinese economy. After correcting for what he believes to be a systematic understatement of inflation, Young recalculates growth rates and concludes that from 1986 to 1998, they averaged 6.2 percent per year, "3 percent less than the officially reported figures of 9.2 percent."

The paper documents an interesting finding that unlike in other countries productivity growth in agriculture has been higher than in industry for most sub periods documented in table 5[4]. On the face of it, this suggests that the reallocation of workers from farms to industry could, at the margin, have an adverse effect on overall growth. However, this conclusion is probably incorrect since the *level* of productivity is likely to be higher in industry.

On the other hand, since both the productivity level and growth rates are higher in services than industry, farmers should switch to services instead of manufacturing. Almost all developed countries have seen a shift toward services and India is experiencing this at even lower levels of income. Why not capitalize on this rather than turn to manufacturing for growth?[5] The authors argue that the service sector is unable to generate sufficient employment or incentives for education. On the contrary, a large return to human capital will induce more accumulation and growth; there are gains from specialization and India is specializing!

A Puzzle

The low level of investment and investment growth in India relative to other developing countries is a puzzle. Given the large labour pool and respect for property rights, neoclassical economic theory would predict that rates of return on capital would be high with a concomitant high level of investment. Why then

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[3] I thank Marek Kapicka for bringing this to my attention.
[4] A notable exception is the period 1999-2004.
[5] See the section on Social Instability, below, for a non-economic reason.

has the level and growth rate of investment been disappointing?

One way to address this would be to undertake an exercise similar to the one performed in "Business Cycle Accounting" (Chari, Kehoe and McGrattan (2005)) and identify what the authors term "wedges", which are, essentially, discrepancies in first order equations in the neoclassical growth model. If investment is too low, it may be due to sizable wedges that distort investment decisions.

A partial answer can be found in the Indian labor laws. The neoclassical prediction is based on the assumption that a labor surplus would translate into low wage rates. This is not, however, the case: hiring a worker implicitly involves a dual cost, a wage rate and unemployment insurance -- since termination is a costly transaction -- and results in raising the effective wage rate. While this benefit accrues to a relatively small portion of the labour force, the potential distortions are significant.

Given the well articulated bargaining power of Indian labour unions, it is probably politically infeasible or inexpedient to change these laws. One solution could be to "grandfather" the current workers and have new laws apply to new hires,[6] a solution that has, historically, met with less resistance from unions.

Miscellaneous Comments

Growth through Outsourcing

If the current growth rates in the service sector persist into the future, income from outsourcing, as a percentage of GDP, will be substantial over the next 10 to 15 years. This will make the Indian economy sensitive to the US and

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[6] Another response to get around labour laws is domestic outsourcing. A senior Indian executive recently told me that his company, instead of starting an in house IT department, decided to sub contract it. I am told the practice is becoming increasingly prevalent.
Yet another response is the lack of enforcement by some states in a bid to attract investment.

other countries' business cycle fluctuations. In fact, the Indian BPO will manifest an "amplified fluctuation" because of the lack of equivalent job placement in the domestic economy. A worker laid off in the outsourcing industry will experience a substantial drop in income since there are few, if any, jobs that are substitutes. This in turn would impact on consumer demand and through the multiplier effect could precipitate a recession. It may also affect the banking sector. Currently, local banks are making consumer loans with a 5 to 10% down payment. In the event of a severe downturn, the possibility of a large-scale default could undermine if not threaten the stability of the banking system.

A time consistent solution would be to explicitly recognize this possibility and to tax a portion of service sector wages, with the proceeds being used to create a contingency fund, invested in assets whose performance is orthogonal to the economic well being of the US economy. This fund should be earmarked for partial unemployment insurance or as reserves, to bail out banks should the above scenarios occur.

Implications for Social Instability

The one billion plus Indian population can be roughly divided into three groups: the illiterate 400 million, the semi - literate 400 million and the 200 million with secondary and post secondary education[7]. The current trend in growth through services concentrates the vast majority of the gains in the hands of the 200 million. This is in contrast to the scenario in China where manufacturing plays a major part and the semi literate also share in the gains.

In the case of India, this pattern of growth is creating an increasing skewness in the wealth distribution with concomitant implications for social instability. As an example, witness the election results in several states with a flourishing service sector and the noticeable increase in Naxalite activity.

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[7] See Table 8 in the paper.

References

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