What Constrains Indian Manufacturing?

Discussion of paper by Poonam Gupta, Rana Hasan and Utsav Kumar

by

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"Truth has a thousand obstacles to overcome before it can get safely down on to paper and from paper back into a head."

Georg Christoph Lichtenberg

What Constrains Indian Manufacturing?

- Before I get into any details, I must say that I like this paper.
- It fits well into the growing and increasingly convincing literature on the constraints to economic growth in India and on understanding the uneven impact of reforms.

Other closely related papers in the literature (only in the last 5 years)

- Aghion et al. (2007)
- Mitra and Ural (2007)
- Topalova (2007, forthcoming)
- Kochhar et al. (2006)
- Banerjee and Iyer (2005)
- Burgess and Pande (2005)
- Topalova (2005)
- Besley and Burgess (2004)
- Hasan, Mitra and Ramaswamy (2003)

What is this paper about?

- How do industrial characteristics—dependence on external finance, labor intensity and infrastructure intensity—interact with economic reforms?
- Have certain elements of the institutional and regulatory environment prevented industries from taking full advantage of reforms?

How do the authors do it?

- Use industry level data from the ASI 1973-2003
- Use Aghion et al measure of dilicensing, which varies by industry and over time.
- Interact this dilicensing dummy with three characteristics of industry:
  - Reliance on infrastructure
  - Reliance on labor
  - Reliance on external finance

Main Result

- Measured by growth in value added, industries with greater need for infrastructure; greater dependence on external finance; and greater labor intensity have performed relatively worse in post-delicensing period.

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Comments, questions and suggestions

- Confounding the effects of industrial characteristics with the effects of the regulatory environment?
- The beauty of Rajan-Zingales methodology is that the categorization of industries tries to capture the “inherent” technological aspects of the industry, rather than the demand/supply equilibrium that derives in any particular country.
- By characterizing industries using Indian data, the authors risk confounding two different and very important effects—inherent characteristics of an industry with the way it has developed in a constrained environment.

Comments, questions and suggestions

- Paper would be significantly more convincing if results are checked with:
  - R-Z measure of external financial dependence based on US data
  - Measure of labor intensity used in Rajan-Subramanian (2005) and Kochhar et al. (2006)
  - Measure of infrastructure intensity using a country or group of countries with nearly “frictionless” supply of infrastructure

Comments, questions and suggestions

- Number of industries: Data are highly aggregated possibly because authors had to bundle up industries to deal with changes in industrial classification
- As a robustness check they could use the much more disaggregated data at the industry level from 1980 onwards

Comments, questions and suggestions

- The industry fixed effects only control for time-invariant heterogeneity across industries.
- Authors’ interpretation of the results is correct if there were no differential pre-reform trends in gross value added, employment, investment across the industries.
- Authors could perform a simple check to see whether this assumption holds, by regressing the growth of left hand side variables of interest prior to liberalization on the three industrial characteristics.

Comments, questions and suggestions

- Using employment and investment elasticities, the data show no statistically significant results.
- The authors may be demanding a bit too much of the data. Why should employment or investment elasticity will be differentially affected by reforms? It could just be a level effect—i.e., employment and investment growth is lower for constrained industries after the reforms.
- Could check this using the same specification as for value added for the employment and investment regressions.

Comments, questions and suggestions

- Number of factories as a dependent variable—what is the expected outcome? Expansion in the number or consolidations and acquisition of scale?
- Drop this as a dependent variable unless there is a good sense of what reforms should have done to the number of establishments.

Comments, questions and suggestions

- Standard errors need to be corrected for potential serial correlation in gross value added, employment, etc.
- The authors mention that they have done it as a robustness check, but it should be incorporated in the main results.

Comments, questions and suggestions

- Finally, check if results work using the top third and bottom third of the distribution of industries by the chosen characteristic, instead of just above- and below-median.

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