Financial Sector Reforms and Implications for Macroeonomic Volatility and Growth.

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The Great Indian Growth Turnaround

- Large literature on India's growth turnaround in the eighties.
  - Early eighties (Virmani, 2006; Rodrik and Subramanian, 2005).
  - Late eighties (Panagariya, 2008; Singh, 2011;Ghate and Wright, 2012)
- No work on the Indian economic reforms and their impact on the business cycle in the Indian context.
- In particular, very little work on implications of liberalization on volatility.

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The 1991 Reforms and Business Cycles

- Ghate, Pandey, Patnaik (2011) fill this gap.
- Document changes in the Indian business cycle in the pre and post 1991 period
- India's business cycle is becoming more like the OECD business cycle in key respects, but looks like a emerging market economy in others.
- Reduction in volatility similar to other Asian economies that have experienced structural transformation.

Developing/Emerging versus Developed Economies

Developed economies	Developing economies
Output is less volatile	Output is more volatile.
Consumption is less volatile than output	Consumption is more volatile than output
Investment is volatile: 3 times relative to output- U.S	Investment is highly volatile
Government expenditure is counter-cyclical	No consistent relation
Consumer prices are counter-cyclical	No consistent relation
Investment is procyclical	Investment correlation is weak
Imports are procyclical	Imports correlation is weak
Weakly counter-cyclical net exports	Strongly counter-cyclical net exports

India: Annual Data from 1950 - 2010

	Pre-reform period 1951-91			Post-reform period 1992-09		
	Std. dev.	Rel. std. dev.	Cont. cor.	Std. dev.	Rel. std. dev.	Cont. cor.
Real GDP	2.13	1.00	1.00	1.78	1.00	1.00
Pvt. Cons.	1.82	0.85	0.69	1.87	1.05	0.89
Investment	5.26	2.46	0.22	5.10	2.85	0.77
CPI	5.69	2.66	0.07	3.49	1.95	0.29
Exports	7.14	3.34	0.07	7.71	4.31	0.33
Imports	11.23	5.26	-0.19	9.61	5.38	0.70
Govt expenditure	6.88	3.22	-0.35	4.60	2.58	-0.26
Net exports	0.9	0.4	0.24	1.1	0.65	-0.69
Nominal exchange rate	6.74	3.15	0.10	5.35	3.00	-0.48

India: Quarterly Data from 1999 - 2010

	Std. dev.	Rel. std. dev.	Cont. corr.	Persistence
Real GDP	1.18	1.00	1.00	0.73
Private Consumption	1.54	1.31	0.51	0.67
Investment	4.08	3.43	0.69	0.80
CPI	1.30	1.09	-0.29	0.70
Exports	8.79	7.40	0.31	0.77
Imports	8.93	7.52	0.45	0.54
Govt expenditure	6.69	5.53	-0.35	0.005
Net exports	1.24	1.04	-0.15	0.45
Real interest rate	2.11	1.77	0.38	0.372
Nominal exchange rate	4.61	3.88	-0.54	0.82

Main Findings

- Consumption volatility has gone up. Similar to other Asian economies.
- Output volatility has gone down but is still high
- Investment is more pro-cyclical
- Imports are more pro-cyclical
- Exchange rate is more counter-cyclical
- Inflation is more cyclical and more predictable
- Government expenditures less volatile

What is the fact here?

- Depends on our theory of business cycles. Assume that

$$\log y_{t+1} = \alpha \log y_t + \beta g_t$$

  where g_t is a set of growth shocks with positive mean.
- Positive relation between volatility and growth driven by differences in β
- Is India more volatile because it is growing faster ? Should we scale volatility by growth?
- Negative correlation between volatility and growth. Ramey and Ramey
- Suggest that the above is not the right model.
- Essentially we want to link growth and volatility to the policy regime

Pre 1991 Financial Sector

- Monetary policy played an accommodative role to fiscal policy
- Financial sector's primary function was to lend support to the government's funding needs.
  - Credit market was captive: only 25% of the savings was available for private sector commercial borrowing
  - Financial sector's support of fiscal policy resulted in financial repression

1. Statutory preemptions
2. Regulated interest rates
3. directed credit programs

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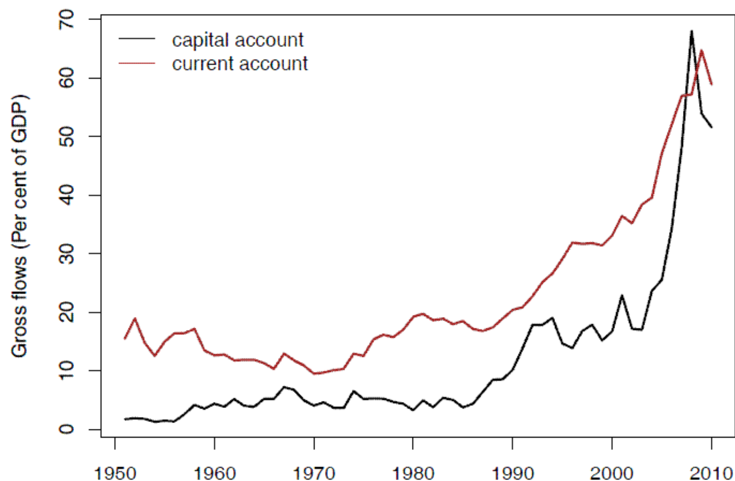
Post 1991 Reforms

Financial repression has steadily declined since early - mid 1990s

- Private institutions allowed to operate in the banking space
- Sharp reduction in the preemption of financial savings by the government.
- SLR, CRR reduced. Implementation of several prudential norms
- Trade liberalization has been substantial. Increases consumption volatility
- Liberalization of the capital account (inflows), although outflows are still controlled.

Gross Capital Flows on the Capital and Current Accounts



From a growth perspective...

- Presumption underlying the neo-classical argument is that countries with low k are necessarily constrained by a lack of domestic savings.
- Availability of foreign savings would increase investment and growth, and poor countries would benefit from capital inflows.
- Capital scarce poor countries have a high MP_k
- Investment and growth would increase if foreign savings came in.
- Rodrik and Subramanian: India is savings constrained.

A Puzzle

- Roland (2005) suggests that the contribution of foreign capital to domestic cap. formation is insignificant.
- Why is there this apparent disconnect between the typical World Bank/IMF/OECD conclusions about the importance of financial sector liberalization and the country-specific findings?
- Important and deserves greater analysis.
- Contrary to the prediction of the financial liberalization process
- If so, why press ahead with more reform?
- Clear benefit: increased competition and improved efficiency

From a volatility perspective

- Chief benefit of financial liberalization is that it allows countries to better smooth consumption through international risk sharing.
- $\Rightarrow$Consumption volatility should fall.

Another Puzzle

- (Ang, 2009) finds that financial liberalization magnifies consumption growth volatility in India.
- Consistent with other empirical work suggests that increasing international financial integration is associated with higher consumption volatility in developing countries
- Kose, Prasad, and Terrones (2009): no evidence of international risk sharing in an emerging market sub-sample (including India).

Policy issues

- Sources of consumption volatility in household data versus aggregation bias.
- How costly is consumption volatility?
- The welfare gains large for developing countries.
- The bigger cost is not volatility but the underlying inefficiency.

Explaining Consumption Volatility.

- Consumption volatility remains high because of mostly permanent productivity shocks (Aguiar and Gopinath, 2008).
- Output, investment increases; trade balance deteriorates.
- Why do shocks to trend growth occur? Black box

Financial frictions

- Productivity shocks get amplified by frictions.
- Implication: consumption volatility driven by shocks to income that are larger or more persistent than they should be.
- Aghion, Bachetta, and Banerjee.
- Role of public sector in this framework?

Banking Sector: Other Puzzles

- Why do public banks appear to voluntarily allocate relatively more resources to finance the fiscal deficit?
  - Limits the gains from financial liberalization
  - Does this reflect a lack of private sector lending opportunities, or a lack of alternative liquid assets (e.g., the lack of a corporate bond market)
- Definition of Financial Stability
  - Has such stability has been delivered primarily through close and tight controls, rather than through effective intermediation and good risk pricing?
- Is India at risk of being in an undesirable place in terms of the trade off between financial stability and development and growth?
  - And will this be accentuated by the implementation of Basel 3 and other international regulatory reforms?

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Thank you