Multinationals and the erosion of effectiveness of capital controls against foreign borrowing

Ila Patnaik
Ajay Shah

September 16, 2009

India's capital controls against foreign borrowing

- Borrowing of upto $0.5 billion per firm is on 'automatic route'. (not automatic).
- End-use restrictions.
- The minimum maturity is three years.
- A ceiling on the spread above LIBOR that can be paid.

The rise of Indian multinationals

- Hundreds of Indian firms are now MNCs
- Foreign affiliates / subsidiaries can borrow
- In effect, global treasuries are now being run out of India
- In the literature we know that global operations are used for tax optimisation and minimising the cost of capital
- The hypothesis of this paper : this leads to a loss of effectiveness of capital controls.
- The misinvoicing dimension.

What this paper does

- Does MNCness cause a bigger exposure for Indian firms, to global credit conditions?
- We do this two ways:

Among all companies	Are more exposed firms MNCs?
Among MNCs	More exposure than non-MNCs?

What this paper does

- Does MNCness cause a bigger exposure for Indian firms, to global credit conditions?
- We do this two ways:

Among all companies	Are more exposed firms MNCs?
Among MNCs	More exposure than non-MNCs?

- To preview the answer: Yes.

The natural experiment

- From June 2007 till January 2009: sharp variation in the Moody's Baa Spread
- Use this to measure the exposure of Indian firms.
- A key concern: deterioration of the Moody's Baa spread proxies for a general deterioration of global economic conditions, in this period.

The dataset

CMIE Cospi index members + observed for 2007-08: yields 2,162 firms. Define a firm as “MNC” when over 1% of assets are outside.

	Not MNC	MNC	Sum
Not Exporter	827	44	871
Exporter	1003	288	1291
Sum	1830	332	2162

Compare exposure of MNCs against non-MNC exporters.

Part I

Which firms are more exposed?

Measuring the exposure of a firm

Augmented market model:

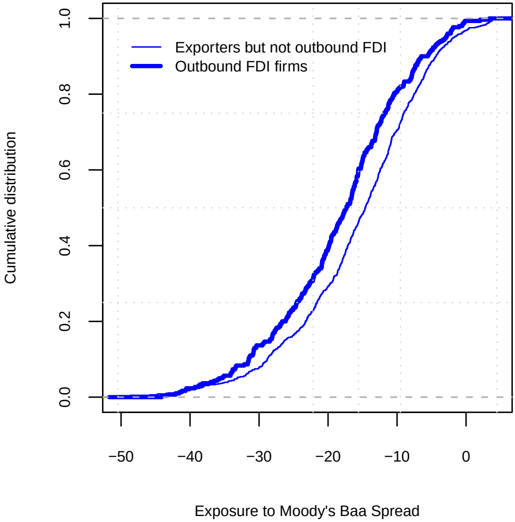
$$r_j = \alpha + \beta_1 r_{M1} + \beta_2 r_{M2} + \beta_3 (1 - L) S + \epsilon$$

Issues in estimation:

- Switch r_{M2} and $(1 - L)S$ to innovations
- Orthogonalisation of effect on r_{M1}
- HAC inference for the overall exposure.
- By having Nifty and INR/USD in the model, we control for the extent to which the Moody's Baa spread proxies for global business cycle conditions.

Use exporting but non-MNC firms as a control which picks up the impact on broad economic conditions.

Distribution of $\hat{\beta}_{3,j}$ for MNCs vs. non-MNC exporters



Cross-sectional variation in $\hat{\beta}_{3,j}$

- Simple OLS of $\hat{\beta}_{3,j}$
- MLE of a measurement error model, where each $\beta_{3,j}$ is measured with known error.
- Answer: MNCs have bigger exposure.

Part II

Are multinationals more exposed?

Just look at stock prices of MNCs?

1. Individual stock prices contain substantial idiosyncratic risk. The signal (of the extent to which Indian MNCs are influenced by the Moody's Baa spread) would be weak when compared with the noise (of idiosyncratic stock price fluctuations).
2. It could be argued that MNCs are firms with significant international *trade* exposure.
3. It could be argued that MNCs tend to be large firms with more leverage. All large leveraged Indian firms are likely to have some borrowing abroad, and would be adversely affected when the Moody's Baa spread rises. Interpreting this as a consequence of outbound FDI would be incorrect.

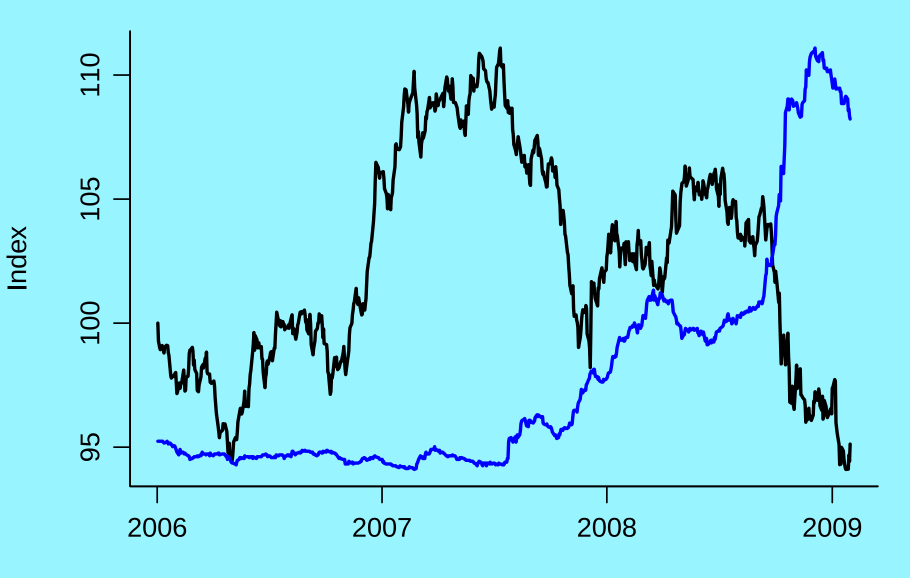
Estimation strategy

- Match each MNC against a non-MNC exporting firm with similar size and leverage.
- Setup a portfolio which is long MNCs and short their partners.
- All other factors – Indian economy and politics, global trade exposure, etc. – are common to both.
- The question: Is this portfolio exceptionally sensitive to global credit conditions?

Examples of matching

Firm	Standardised Size	Standardised Lev.	Best match	Standardised Size	Standardised Lev.	Distance
Info-drive Software	3.24	1.16	Intellvisions Software	3.21	1.16	0.0122
Infosys	9.71	1.28	Sterlite	9.68	1.41	0.0752
Infotech Ent.	6.38	1.19	Mahindra L. Devp.	6.37	1.16	0.0171
IPCA Labs	7.10	2.10	Kalyani Steels	7.06	2.20	0.0541
J B Chemicals	6.49	1.61	Jagatjit Inds	6.56	1.56	0.0402

The $H_t^{I/DX}$ time-series



Regression of $H_t^{I/DX}$ on change in the Moody's Baa spread

	Coefficient	Std. Error
Intercept	-0.02	0.02
Change in Baa spread	-1.5	0.43

Robustness checks

- Could it be that MNCs are just more internationally oriented (with more trade exposure) than the partner?
  To address that, we focus on the non-MNC exporters, and break them into two groups: above-median exports and below-median exports. We do a similar matching exercise to construct a portfolio which is long hi-exports and short lo-exports. This is a control for pure trade exposure to the international economy.
  The results are robust to this.
- Could it be that the stock market picks up these things with a lag? We include ten days of lags. The results are robust to this.

Conclusion

- Once a firm becomes an MNC, it runs a global treasury
- This is likely to diminish the effectiveness of capital controls.

Conclusion

- Once a firm becomes an MNC, it runs a global treasury
- This is likely to diminish the effectiveness of capital controls.
- We start out by scanning all firms, and ask: Are the ones that are more exposed the MNCs? They are.
- Then we focus on the MNCs, and match each one to a similar non-MNC firm. The long MNC + short partner portfolio is quite sensitive to the Moody's Baa spread.

Conclusion

- Once a firm becomes an MNC, it runs a global treasury
- This is likely to diminish the effectiveness of capital controls.
- We start out by scanning all firms, and ask: Are the ones that are more exposed the MNCs? They are.
- Then we focus on the MNCs, and match each one to a similar non-MNC firm. The long MNC + short partner portfolio is quite sensitive to the Moody's Baa spread.
- Narrow interpretation: Once a country throws up MNCs, capital controls against foreign debt lose effectiveness
- Broader story: the lack of effectiveness of capital controls, once an economy becomes more sophisticated.

Thank you.