

Exchange Rate Exposure and Firm Dynamics

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THE PAPER

- Studies
 - the portfolio choice of domestic and foreign currency borrowing;
 - how the availability of foreign currency borrowing affects the dynamics of firms and aggregate investment.
- It first characterizes some stylized fact and then constructs a model with heterogeneous firms.
- The calibrated model captures several stylized facts. It is then used to conduct various quantitative exercises.

EMPIRICAL REGULARITIES

1. **Positive** correlation between productivity and FC borrowing.
 - More productive firms borrow more in foreign currency
2. **Negative** correlation between capital FC borrowing.
 - Smaller firms borrow more in foreign currency

GENERAL COMMENTS

1. The paper is motivated by interesting empirical facts in Hungary.
2. The focus of the micro heterogeneity is very interesting.
3. The model is well-suited for understanding the trade-off between domestic and foreign currency borrowing at the micro level.
4. However, the paper is somewhat incomplete in describing all mechanisms underlying the results.
5. Some of the (policy) considerations that followed the simulation exercises may not be well founded.

MODEL

- Standard model with heterogeneous firms

$$y_{t+1} = z_{t+1}k_t^\alpha$$

- Extended with foreign borrowing

$$k_t = e_t + q_t b_t + q_t^* s_t b_t^* - d_t$$

- Next period equity

$$e_{t+1} = z_{t+1}k_t^\alpha + k_t - b_t - x_{t+1} s_t b_t^*$$

- Costly default if $e_{t+1} < 0$.

Trade-off local vs. foreign borrowing

1. UIP violation, $q_t < q_t^*$.
 - Foreign borrowing is cheaper
2. Foreign borrowing increases the probability of default due to currency depreciation.
 - Foreign borrowing is riskier

For more productive firms it is less likely that $e_{t+1} < 0$.

Due to decreasing returns, lower capital is more productive.

It this the whole story?

No equity financing, $d_t \geq 0$

- With this assumption, the equity of the firm becomes important

$$e_t = z_t k_{t-1} - b_{t-1} - s_t b_{t-1}^*$$

- With low equity, it is risky to have a large scale of production. By down scaling, firms are more productive and less exposed to the currency risk.

It this the whole story?

- Firms that are more productive in 2000, are likely to have more equity in 2005. This is why they choose more FC borrowing.
- Firms that have low capital in 2000, may have more equity in 2005 relatively to k and, therefore, they choose more FC borrowing.

	Foreign Currency Loan Dummy			
	Model		Data	
	(1)	(2)	(3)	(4)
Log productivity	0.046*** (0.002)	0.045*** (0.001)	0.020*** (0.002)	0.012*** (0.002)
Log capital		0.020*** (0.002)		0.032*** (0.002)
Sector FE			Yes	Yes
R^2	0.006	0.012	0.028	0.053
N	152,706	152,706	33,327	33,327

Notes: *, **, *** significant at the 10, 5, and 1 percent level. Standard errors in parenthesis

It this the whole story?

Moment	Group	Model	Data
		(1)	(2)
1. Firm share (%)	LC debt only	21	21
	LC & FC debt	8	6
	FC debt only	1	3
2. Relative productivity*	LC debt only	0.97	0.99
	LC & FC debt	1.07	1.02
	FC debt only	1.08	1.05
3. Relative capital*	LC debt only	0.95	0.97
	LC & FC debt	1.10	1.06
	FC debt only	1.05	0.99
4. Investment rate (%)	LC debt only	10	9
	LC & FC debt	15	18
	FC debt only	17	19
5. FC Share (%)	LC debt only	0	0
	LC & FC debt	41	50
	FC debt only	100	100
6. Leverage (%)	LC debt only	21	17
	LC & FC debt	33	25
	FC debt only	21	18

Another mechanism

When firms are more productive and are large, it is more likely that in the future will have more equity compared to z . This means that they need to borrow more to be at the optimal scale. But if they need to borrow less, it is less risky to use foreign currency borrowing.

This mechanism may be more important than what described in the paper.