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Abstract

When debt obligations have fixed nominal value, a monetary expansion reduces the real burden of existing debt and boosts firm performance, which applies even when firms reside in foreign countries. Investigating Mexican and Brazilian publicly listed companies with substantial dollar-denominated debt, we show that a more dollar-indebted firm experiences higher increases in equity value, capital expenditure, and sales after a U.S. monetary expansion, especially when such dollar-denominated debt has long maturity. Moreover, we document that a larger net export position amplifies the responses of dollar-indebted firms to the U.S. monetary shocks.

Highlight

- How does monetary policy (MP) impact firm's stock performance and real decisions?
 - Mainstream: sticky price
 - Alternative channel: sticky leverage (Gomes, Jermann, and Schmid, 2016)
- New empirical evidence to support [sticky leverage channel](#) and [debt overhang](#)
- Investigate the effects of U.S. MP shocks on Latin American companies borrow in both foreign denominated debt (FDD) and locally denominated debt (LDD)
 - firms with more FDD experience higher abnormal stock returns after expansionary U.S. MP shocks
 - investment growth and sales growth of these firms also increase.
 - the sticky leverage channel is more prominent for firms with longer term debt

Model and Hypothesis

Theoretically, we build a tractable model based on Leland (1994) to allow investment and FDD. In this model, a domestic firm operates locally but borrows debt denominated in U.S. dollars to finance its activities. An unexpected monetary shock in U.S. lowers the local currency value of this dollar-denominated. This lower value of debt in local value alleviates the debt overhang problem faced by the firm. As a result, a local firm with more FDD has more equity price appreciation and more real investment after a foreign monetary expansion. In the model, such effects are more pronounced with firms with more FDD and when FDD has longer terms.

The model generates three testable hypothesis:

- Hypothesis I:** Equity value of firms increases following an expansionary U.S. MP shock. Furthermore, firms with more FDD have stronger positive response to than those with less FDD, given other firm characteristics unchanged.
- Hypothesis II:** Firms with more FDD tend to invest more after an expansionary U.S. MP shock.
- Hypothesis III:** Stock prices of firms with more long-term FDD are more sensitive to U.S. MP shocks than those with more short-term FDD.

Data

- Two major Latin American countries: Brazil (2002-2018) and Mexico (1996-2018).
- Company data: Economatica
 - Daily returns, quarterly financial, and FDD
- U.S. MP shocks
 - high-frequency identification following Nakamura and Steinsson (2018).
- Commodity-level annual trade data from UN Comtrade

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Regressions

I. Key Specification:

$$R_{jt} = \beta_1 FDD_{jt} + \beta_2 Lev_{jt} + \gamma_1 (FDD_{jt} \times Shock_t) + \gamma_2 (Lev_{jt} \times Shock_t) + Control_{jt} + \delta_j + \alpha_t + \varepsilon_{jt} \quad (1)$$

- R_{jt} : stock price response at FOMC
- γ_1 : role of FDD relative to other debt
- γ_2 : the conventional investment channel of MP transmission.
- δ_j, α_t : firm and time fixed effects.

II. International Trade Positions

- Add trade position to Regression (1)

III. Debt Overhang

- Change dependent variable of Regression (1) to: change of investment, change of sales, FDD or Leverage

IV. Long- Versus Short-Term Debt Overhang

- Split FDD in Regression (1) to short-term and long-term FDD

Table 1. Regression Results

	Stock Return	$\frac{\Delta Inv}{Assets_{t-1}}$	$\frac{\Delta Sales}{Assets_{t-1}}$	FDD	Lev
Shock*L.FDD	-8.414** (4.071)	-0.133** (0.055)	-0.302 (0.477)	-1.023*** (0.160)	0.100 (0.103)
Shock*L.Lev	11.541 (3.173)	0.040 (0.033)	0.236 (0.283)	0.059 (0.060)	-0.089 (0.067)
L.FDD	0.243 (0.221)	0.005 (0.006)	0.037 (0.040)	0.871*** (0.013)	-0.000 (0.009)
L.Lev	0.004 (0.220)	0.009 (0.006)	0.044 (0.052)	-0.016** (0.006)	0.861*** (0.014)
Controls	Y	Y	Y	Y	Y
Fixed effects	F,S	F,YQ	F,YQ	F,YQ	F,YQ
Observations	27,841	10,009	10,082	10,057	10,069
Adj. R^2	0.117	0.503	0.815	0.934	0.963

Note: stock return regression is at FOMC date level. The other regressions are at quarterly level.

Empirical Finding

I. Stock Return:

- MP shock that increases 1-year treasury yield by 100 basis point (1 p.p. $\uparrow i$) + 1 standard deviation higher of FDD (1 sd \uparrow FDD) \Rightarrow -1.3%

II. International Trade Positions

- Firms with a higher net-export position with the U.S. are more sensitive to the U.S. monetary shocks due to the combined effects of the sticky leverage and the sticky price channels.

III. Debt Overhang

- Investment growth: 1 p.p. $\uparrow i$ & 1 sd \uparrow FDD = -1.7%
- Sales growth: 1 p.p. $\uparrow i$ & 1 sd \uparrow FDD = -3.93%
- FDD holding: 1 p.p. $\uparrow i$ & 1 sd \uparrow FDD = -13.4%

IV. Long- Versus Short-Term Debt Overhang

- Firms with longer-term debt show stronger sticky leverage effect.

Additional Complementary Exercise

- We do NOT observe significant effects through the FDD channel following European Central Bank (ECB) MP shocks, because FDD of the Latin American Firms are mostly dollar denominated.
- The channel we identified is not contaminated by the liquidity channel of MP transmission.
 - Restrict sample to firms not-cross-listed at the U.S. market: we find similar results.
 - Firms hold higher FDD in the flexible FX regime do not have stronger connection with the U.S. during the fixed FX regime.
 - Firms with a stronger net export exposure have lower FDD holding in general. Thus, the NX position does not affect firms' access to FDD.

Reference:

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