The Dominant Currency Financing Channel of External Adjustment

Casas, Meleshchuk and Timmer

Discussion by Laura Castillo-Martínez
Duke University

7th International Macroeconomics Workshop
Bank of England - Banque de France - Banca d’Italia

8th Nov 2021
**Summary of Paper**

Big picture: How do exchange rate shocks affect output?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.
- Most papers are theoretical. Empirical identification is tricky!
- This paper provides an empirical test of the balance sheet channel.
- It proposes the 2014-15 Colombian peso depreciation as a pseudo-natural experiment.
- Main hypothesis: firms with a larger share of foreign denominated debt experience a larger decline in production.
- It exploits the maturity structure of foreign debt to overcome endogeneity of currency choice.
Summary of Paper

Big picture: How do exchange rate shocks affect output?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.
- Most papers are theoretical. Empirical identification is tricky!
- This paper provides empirical test of the balance sheet channel.
- It proposes the 2014-15 Colombian peso depreciation as a pseudo-natural experiment.
- Main hypothesis: firms with a larger share of foreign denominated debt experience a larger decline in production.
- It exploits the maturity structure of foreign debt to overcome endogeneity of currency choice.
Summary of Paper

Big picture: How do exchange rate shocks affect output?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

This paper provides an empirical test of the balance sheet channel. It proposes the 2014-15 Colombian peso depreciation as a pseudo-natural experiment. Main hypothesis: firms with a larger share of foreign denominated debt experience a larger decline in production. It exploits the maturity structure of foreign debt to overcome endogeneity of currency choice.
Summary of Paper

Big picture: How do exchange rate shocks affect output?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

- Most papers are theoretical. Empirical identification is tricky!
Summary of Paper

Big picture: How do exchange rate shocks affect trade through firms?

▶ Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

▶ Most papers are theoretical. Empirical identification is tricky!
**Summary of Paper**

Big picture: How do exchange rate shocks affect *trade through firms*?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

- Most papers are theoretical. Empirical identification is tricky!

- This paper provides *empirical test of the balance sheet channel*. 
Summary of Paper

Big picture: How do exchange rate shocks affect trade through firms?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

- Most papers are theoretical. Empirical identification is tricky!

- This paper provides empirical test of the balance sheet channel.

- It proposes the 2014-15 Colombian peso depreciation as a pseudo-natural experiment.
Summary of Paper

Big picture: How do exchange rate shocks affect trade through firms?

- Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

- Most papers are theoretical. Empirical identification is tricky!

- This paper provides empirical test of the balance sheet channel.

- It proposes the 2014-15 Colombian peso depreciation as a pseudo-natural experiment.

- Main hypothesis: firms with a larger share of foreign denominated debt experience a larger decline in production.
Summary of Paper

Big picture: How do exchange rate shocks affect trade through firms?

▶ Literature proposes different mechanisms: (i) expenditure switching, (ii) real income, and (iii) balance sheet channel.

▶ Most papers are theoretical. Empirical identification is tricky!

▶ This paper provides empirical test of the balance sheet channel.

▶ It proposes the 2014-15 Colombian peso depreciation as a pseudo-natural experiment.

▶ Main hypothesis: firms with a larger share of foreign denominated debt experience a larger decline in production.

▶ It exploits the maturity structure of foreign debt to overcome endogeneity of currency choice.
\[
\ln (1 + Y_{ft}) = \beta \times FCE_f \times Post_t + controls_{ft} + \epsilon_{ft},
\]
where \(Post_t = 1\) if \(t > 2014Q3\) and \(FCE_f\) stands for

Main Specification & Findings

\[
\ln (1 + Y_{ft}) = \beta \times FCE_f \times Post_t + controls_{ft} + \epsilon_{ft},
\]
where \(Post_t = 1\) if \(t > 2014Q3\) and \(FCE_f\) stands for
Main Specification & Findings

\[ \ln(1 + Y_{ft}) = \beta \times FCE_f \times Post_t + \text{controls}_{ft} + \epsilon_{ft}, \]

where \( Post_t = 1 \) if \( t > 2014\text{Q3} \) and \( FCE_f \) stands for

1. \( FCL_{ft} \): outstanding amount of debt in foreign currency as a share of assets in 2014 Q1.
Main Specification & Findings

\[ \ln(1 + Y_{ft}) = \beta \times FCE_f \times Post_t + \text{controls}_{ft} + \epsilon_{ft}, \]

where \( Post_t = 1 \) if \( t > 2014Q3 \) and \( FCE_f \) stands for

1. \( FCL_{ft} \): outstanding amount of debt in foreign currency as a share of assets in 2014 Q1.

2. \( LS_{ft,t'} \): change in repayment value of foreign denominated debt that is due before \( t' \) as a share of assets.
**Main Specification & Findings**

\[ \ln(1 + Y_{ft}) = \beta \times FCE_f \times Post_t + \text{controls}_{ft} + \epsilon_{ft}, \]

where \( Post_t = 1 \) if \( t > 2014Q3 \) and \( FCE_f \) stands for

1. \( FCL_{ft} \): outstanding amount of debt in foreign currency as a share of assets in 2014 Q1.

2. \( LS_{ft,t'} \): change in repayment value of foreign denominated debt that is due before \( t' \) as a share of assets.

3. \( WS_{ft,t'} \): change in repayment value of all foreign denominated debt as a share of assets.
Main Specification & Findings

\[ \ln(1 + Y_{ft}) = \beta \times FCE_f \times Post_t + \text{controls}_{ft} + \epsilon_{ft}, \]

where \( Post_t = 1 \) if \( t > 2014Q3 \) and \( FCE_f \) stands for

1. \( FCL_{ft} \): outstanding amount of debt in foreign currency as a share of assets in 2014 Q1.

2. \( LS_{ft,t'} \): change in repayment value of foreign denominated debt that is due before \( t' \) as a share of assets.

3. \( WS_{ft,t'} \): change in repayment value of all foreign denominated debt as a share of assets.

▶ Main result: \( \beta < 0 \) only for imports.
Main Specification & Findings

\[ \ln(1 + Y_{ft}) = \beta \times FCE_f \times \text{Post}_t + \text{controls}_{ft} + \epsilon_{ft}, \]

where \( \text{Post}_t = 1 \) if \( t > 2014Q3 \) and \( FCE_f \) stands for

1. \( FCL_{ft} \): outstanding amount of debt in foreign currency as a share of assets in 2014 Q1.

2. \( LS_{ft,t'} \): change in repayment value of foreign denominated debt that is due before \( t' \) as a share of assets.

3. \( WS_{ft,t'} \): change in repayment value of all foreign denominated debt as a share of assets.

- Main result: \( \beta < 0 \) only for imports.
- Results driven by non-exporters \( \rightarrow \) exporting as a natural hedge.
Main Specification & Findings

\[ \ln(1 + Y_{ft}) = \beta \times FCE_f \times Post_t + controls_{ft} + \epsilon_{ft}, \]

where \( Post_t = 1 \) if \( t > 2014Q3 \) and \( FCE_f \) stands for

1. \( FCL_{ft} \): outstanding amount of debt in foreign currency as a share of assets in 2014 Q1.

2. \( LS_{ft,t'} \): change in repayment value of foreign denominated debt that is due before \( t' \) as a share of assets.

3. \( WS_{ft,t'} \): change in repayment value of all foreign denominated debt as a share of assets.

▶ Main result: \( \beta < 0 \) only for imports.

▶ Results driven by non-exporters → exporting as a natural hedge.

▶ Dynamic version of regression: effect accumulates over time.

▶ Rest of paper: robustness and further evidence of financial frictions.
Some Remarks

Great paper: very important question, detailed data & smart identification strategy.

Summary of my comments

1. Unclear what the liquidity shock truly captures.
   - Timing and role of expectations.

2. This is a paper about foreign currency financing.
   - The emphasis on dominant currency is unnecessary.

3. Other minor comments.
**Comment I: Constructing the Liquidity Shock**

\[ \text{LS}_{ft,t'} = \sum_{i \in \Lambda_{f,t}} 1_{T(i) \leq t'} L_i \Delta e_{t,T(i)} \frac{A_{ft}}{A_{ft}}, \]

where \( t = 2014q1 \) and \( t' = 2015q3 \).
Comment I: Constructing the Liquidity Shock

\[ LS_{ft, t'} = \frac{\sum_{i \in \Lambda_{f,t}} 1_{T(i) \leq t'} L_i \Delta e_{t, T(i)}}{A_{ft}}, \]

where \( t = 2014q1 \) and \( t' = 2015q3 \).

- Shock is interacted with \( Post_t \rightarrow \) change in value only starting in 2014q3.
**Comment I: Constructing the Liquidity Shock**

\[
LS_{ft,t'} = \frac{\sum_{i \in \Lambda^F_{f,t}} 1_{T(i) \leq t'} L_i \Delta e_{t,T(i)}}{A_{ft}},
\]

where \( t = 2014q1 \) and \( t' = 2015q3 \).

- Shock is interacted with \( Post_t \rightarrow \) change in value only starting in 2014q3.

- Arbitrary choice of \( t' \): Colombian peso keeps depreciating until 2016q1.
Comment I: Constructing the Liquidity Shock

\[
LS_{ft,t'} = \frac{\sum_{i \in \Lambda_{f,t}^{F}} 1_{T(i) \leq t'} L_i \Delta e_{t,T(i)}}{A_{ft}},
\]

where \( t = 2014q1 \) and \( t' = 2015q3 \).

- Shock is interacted with \( Post_t \rightarrow \) change in value only starting in 2014q3.

- Arbitrary choice of \( t' \): Colombian peso keeps depreciating until 2016q1.

- Is perfect foresight a good assumption? What about heterogeneity of expectations?
Comment II: why frame it as a DCP paper?

- This is a paper about foreign currency financing.

- In the data, US is by far Colombia's largest trading partner.
- In the aggregate, closer to LCP for imports, PCP for exports.

- DCP weakens exporting as a natural hedge.
- Depreciation leads to a negligible impact on export quantity.
Comment II: why frame it as a DCP paper?

- This is a paper about foreign currency financing.
- No need for DCP in the model.
Comment II: why frame it as a DCP paper?

- This is a paper about foreign currency financing.
- No need for DCP in the model.
  - In fact, model does not feature nominal rigidities.
  - Real exchange rate shocks also generate the balance sheet effect.
Comment II: why frame it as a DCP paper?

- This is a paper about foreign currency financing.
- No need for DCP in the model.
  * In fact, model does not feature nominal rigidities.
  * Real exchange rate shocks also generate the balance sheet effect.
- In the data, US is by far Colombia largest trading partner.
  * In the aggregate, closer to LCP for imports, PCP for exports.
Comment II: why frame it as a DCP paper?

- This is a paper about foreign currency financing.

- No need for DCP in the model.
  * In fact, model does not feature nominal rigidities.
  * Real exchange rate shocks also generate the balance sheet effect.

- In the data, US is by far Colombia largest trading partner.
  * In the aggregate, closer to LCP for imports, PCP for exports.

- DCP weakens exporting as a natural hedge.
  * Depreciation leads to a negligible impact on export quantity.
Foreign currency borrowing is overall small in Colombia (Table 2).
   * Results driven by few very large firms?
   * Positive correlation between LS and firm size (Table 3).

What share of total imports do imported intermediate inputs represent?

Preferred placebo test: use share of imported intermediate inputs as dependent variable.

Is there evidence that firms with higher shares of exports contract less? Potential to exploit the intensive margin too.

In Figure 2, 2014q1 is significantly different than zero while 2014q3 and q4 are not.

Quantification exercise is purely speculative.