

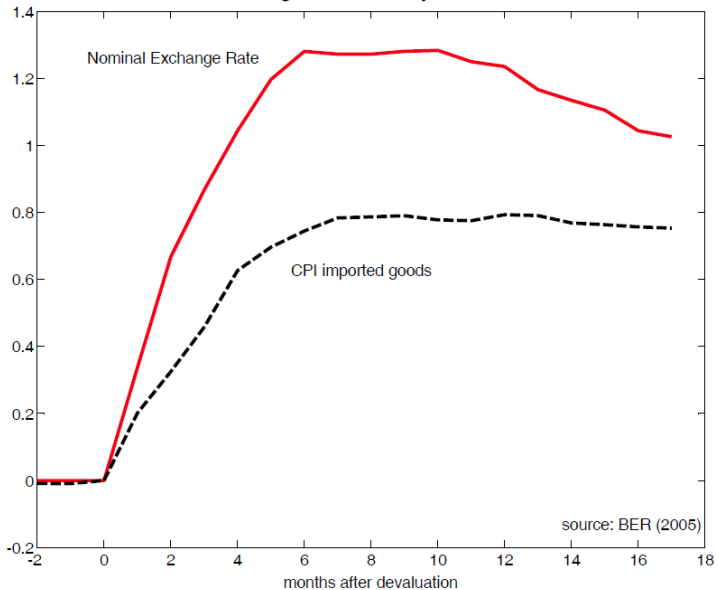
Key trade dynamics in devaluations

Understand Δ 's in imports and prices after large devaluation

Devaluation: large increase in relative price of imports at dock

- 1 Slow increase in import prices at retail level

Argentina: January 2002



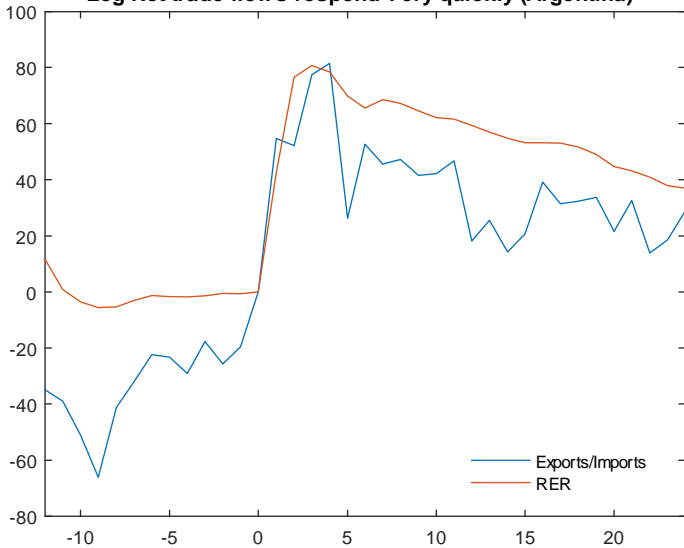
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Log Net trade flows respond very quickly (Argentina)



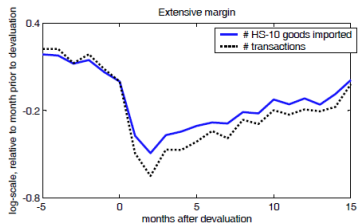
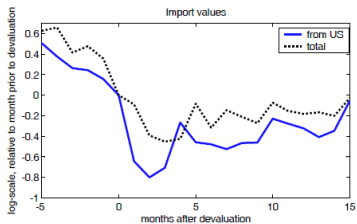
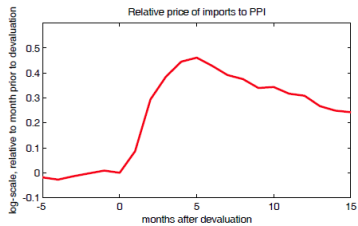
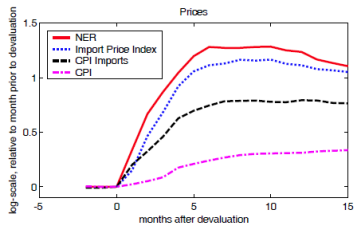
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Figure 1: Devaluation in Argentina 2002



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Common to: Argentina, Brazil, Mexico, Korea, Thailand, Russia.

Overview

- 1 Document: evidence of the key frictions
 - ▶ Delivery lags & fixed transaction costs
 - ▶ Importer's inventory behavior
 - ▶ Lumpy international transactions



Fact 1: Trade friction: delivery lags

Lags between order and delivery: 6-8 weeks

- Shipping lags (Hummels 99)
 - ▶ 2-6 weeks by vessel, 1 day by air
 - ▶ most trade with developing countries by vessel: 70%
- Customs/paperwork (World Bank "Doing Business" survey)
 - ▶ Adds 2-5 weeks

WB logistics survey: <http://lpi.worldbank.org/>

Fact 1: Trade friction: fixed transaction costs

	Argentina	Russia	Mexico
Documents preparation	\$750	\$437	\$206
Customs clearance & technical control	\$150	\$500	\$224
Port & terminal handling	\$600	...	\$165
U.S. export costs	\$625	\$625	\$625
Fraction of mean shipment	0.04	0.02	0.01
Fraction of median shipment	0.17	0.07	0.11

- Also, freight ($\approx 1/2$ above costs) has fixed component

Fact 2: Inventory problems bigger for traders

Chilean plant-level data (Hsieh-Parker 07)

- Unbalanced panel from 90 - 01

$$i_{jt} = c + \alpha_M \cdot s_{jt}^M + \alpha_X \cdot s_{jt}^X + e_{jt}$$

- i_{jt} : inventory to materials ratio
- s_{jt}^M : imports as share of material purchases
- s_{jt}^X : exports as share of shipments

Inventory problems bigger for importers/exporters

Regression Results of Inventory Holdings on Import Content

	c	α_M	α_X
Inventory w control for L	0.18 (18.4)	0.187 (15.6)	
Inventory w control for L (t-stat)	0.22 (18.4)	0.15 (15.6)	0.25 (2.7)

- Non-importer 2.5 months, 100% imp/exp. holds 7.5 months
- Inventory premium holds
 - ▶ Separately for materials & finished goods
 - ▶ Industry FE, controlling for employment
- Nadais (17) confirms findings for India, Peru, & Colombia

Inventory problems bigger for exporters/importers

Regression Results of Inventory Holdings on Import Content

U.S. Data	c	α_M	α_X
Inventory w controls for labor	0.22	0.193	0.197
(t-stat)	(31)	(11.4)	(4.8)

- Similar premia to Chilean data
-

Fact 3: International transactions are lumpy

Two bits of evidence:

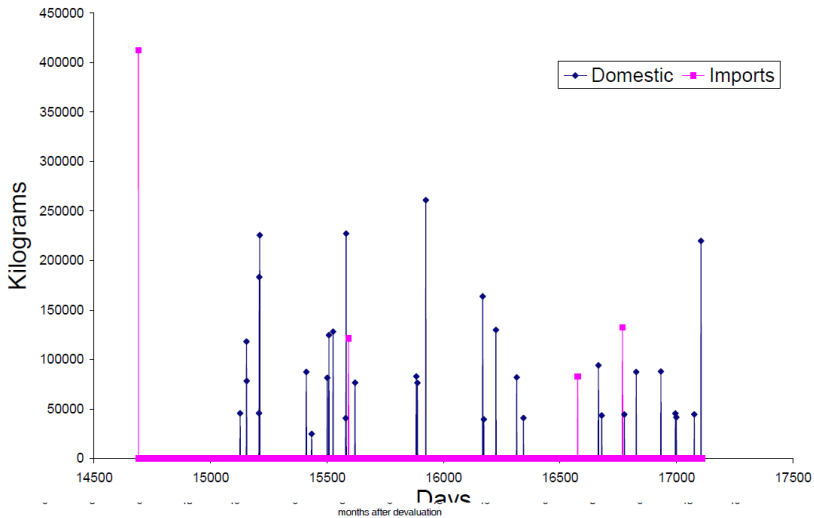
- US Steel Wholesaler
- US Exports (highly disaggregated)
-

Fact 3: International transactions are lumpy

U.S. steel importer (Hall-Rust)

- Transaction-level data, identical goods from home & imported
- 3573 goods, 18104 transactions, 9 years of daily data

Purchases of Hot Rolled Steel Coils (1/4 inch by 48)



Fact 3: International transactions are lumpy

U.S. steel importer (Hall-Rust)

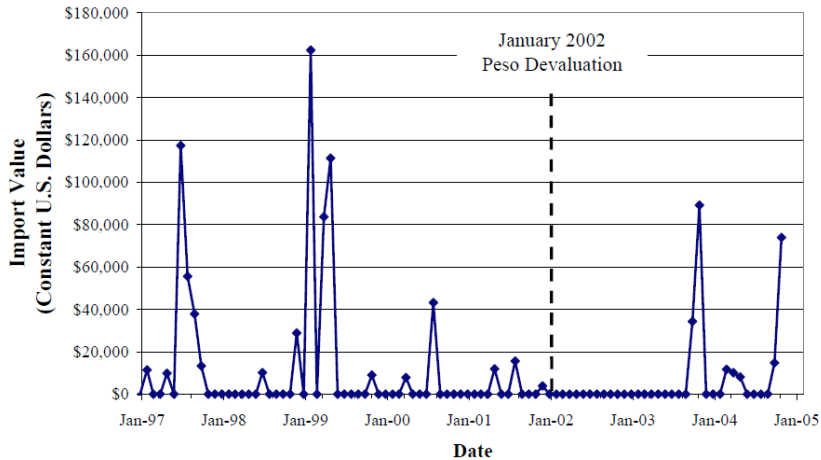
- Transaction-level data, identical goods from home & imported
- 3573 goods, 18104 transactions, 9 years of daily data
- Imports premia:
 - ▶ Purchases 50 percent larger
 - ▶ Mean interval: 205 vs 100 days (median: 140 vs 56 days)

Fact 3: International transactions are lumpy

Data:

- All U.S. export goods, monthly, 1990-2005
- Variables: values and quantities, # of transactions
- “Good” = HS-10 commodity x port of exit
- Data available online from USITC.

Sample of Import Lumpiness:
TABLEWARE AND KITCHENWARE, OF PORCELAIN
OR CHINA, NOT FOR HOTELS OR RESTAURANTS



Fact 3: International transactions are lumpy

	Argentina	Russia	Mexico
fract.of mos. good exported	0.47	0.43	0.90
Hirschmann-Herfindahl index	0.40	0.45	0.21
fract. of annual trade in top mo.	0.50	0.53	0.27
fract. of annual trade in top 3 mos.	0.83	0.85	0.53
# of trans. (in periods w/ trade)	2.2	2.7	32.3

Hirschmann-Herfindahl index

$$HH = \sum_{i=1}^{12} s_i^2,$$

where s_i = share of annual trade values in month i

- ranges from $1/12$ to 1
- If equal values in months with positive trade:
 - ▶ $1/HH$: number of months with positive trade
 - ▶ i.e., $HH = 0.45$: 2.2 months of trade during the year

Fact 3: International transactions are lumpy

Not due to seasonalities:

	Argentina	Russia	Mexico
Within Year, Across Month			
Hirschmann-Herfindahl index	0.40	0.45	0.21
fract. of annual trade in top mo.	0.52	0.53	0.27
fract. of annual trade in top 3 mos.	0.85	0.85	0.53
Across Year, Within Month			
Hirschmann-Herfindahl index	0.5	0.75	0.15
fract. of annual trade in top mo.	0.60	0.80	0.25
fract. of annual trade in top 3 mos.	0.96	1.00	0.54
# years traded	8.0	4.0	8.0

Fact 3: International transactions are lumpy

Pervasive across goods:

	Food	Int	Cap	Auto/ Parts	Cons
mos. export (%)	0.33	0.45	0.36	0.68	0.45
HH index	0.53	0.40	0.52	0.35	0.41
Top mo.	0.59	0.49	0.61	0.42	0.51
Top 3 mos.	0.89	0.83	0.90	0.74	0.84
Share US Exports	0.02	0.42	0.13	0.06	0.07

Research Question: How is lumpiness related to cyclicity of trade?