Global Exchange Rate Pass-Through and Heterogeneous Firms

Christopher Johns[1] Dennis P. Quinn[2]

December 31, 2024

[1]Department of Economics, Georgetown University, cwj20@georgetown.edu
[2]McDonough School of Business, Georgetown University, quinnd@georgetown.edu; SIPA, Princeton U., dq4051@princeton.edu

Big Picture

- Exchange rate pass-through (ERPT) is the effect of a country's exchange rate changes on its domestic and trade prices
  - *ERPT thru to domestic prices is our focus*
- ERPT has significant implications for trade policy, multinational value chains, and macroeconomic management policies.
- Firm and policy characteristics jointly determine ERPT
  - However, evidence combining micro and macro determinants of ERPT is limited due to demanding data requirements

Our Contribution

- We propose a new procedure to estimate ERPT to firm-level producer prices without directly observing price data.
    - Our procedure utilizes firm-level financial data from various countries and periods to estimate pass-through accurately.
    - *Producing ERPT to firm producer prices across time and space*
- The novel method allows us to answer consistently:
    1. Does ERPT decrease with macro policies such as inflation targeting and central bank independence?
    2. Do multinational firms experience lower ERPT?
    3. Does external financial openness counteract these two forces?
    4. How does firm financing affect ERPT?

Firm Data: ORBIS, 47 Countries, 1995–2022

- ORBIS firm-level database provided by Moody's-BvD
- Balance sheets, income statements, detailed ownership, and 4-digit NACE industry classification
- Private and public non-financial firms
- Sample of 2.5M firms
- Coverage and start date differs by country

Advantage of our Methodology

- **Macro studies**:
  - *Pros*: cross-country results; industry and national policy determinants of ERPT
  - *Cons*: misses ERPT heterogeneity within countries and/or industries
- **Micro studies**:
  - *Pros*: captures ERPT heterogeneity within countries and/or industries
  - *Cons*: single-country results; not always applicable to other countries

Both approaches miss crucial information in determining ERPT.
Our goal: bridge the gap between micro and macro.

- jointly investigate firm-, industry-, and country-level determinants of ERPT

Empirical Framework

We directly estimate:

$$\Delta \log \left(\text{Markup}_{i,t}\right) = [\alpha^{'} + \beta^{'} \text{Import Intensity}_{i,t-1} + \gamma \text{Market Share}_{i,t-1}]\Delta e_{c,t} + \theta X_{i,t-1} + \epsilon_{i,t} \quad (1)$$

Pass-through to domestic producer prices is:

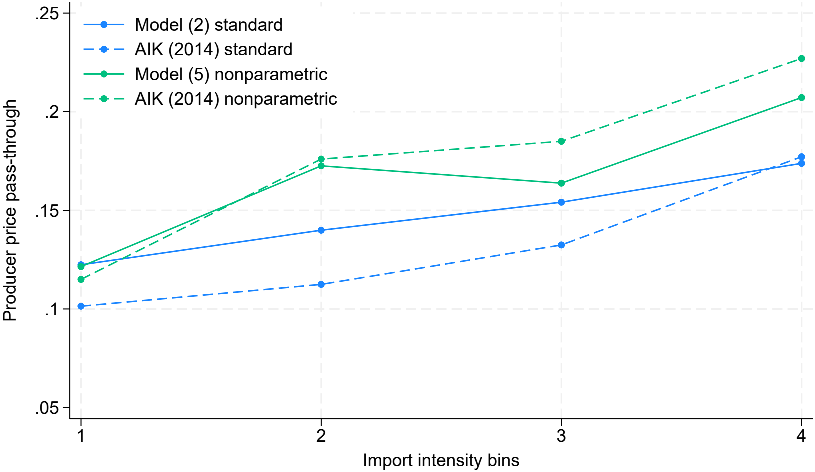
$$ERPT_{i,t} = \alpha^{'} + \Psi^{C} - \frac{1}{\bar{\Gamma}}\beta^{'} \text{Import Intensity}_{i,t-1} + \gamma \text{Market Share}_{i,t-1} \quad (2)$$

where

- $\Psi^{C} = 0.054$ is the average pass-through to costs of a nonimporting firm
- $\bar{\Gamma} = 0.730$ is the average markup elasticity wrt. its prices

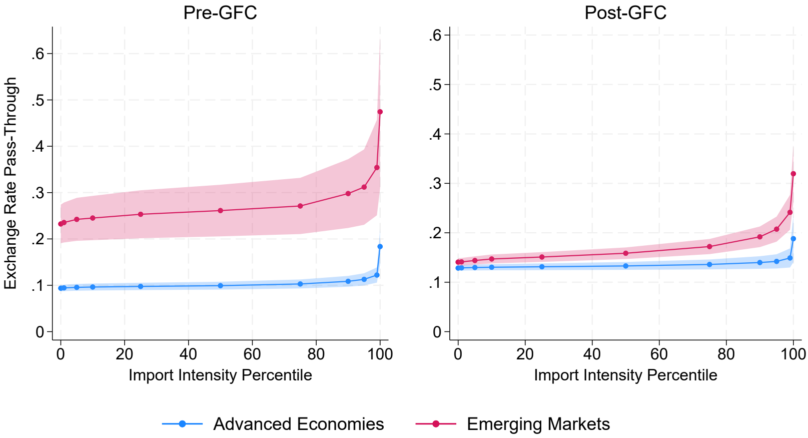
are estimated in sample.

External Validity: Belgium Comparison (2000–2008)



Pass-Through by Quartile of Import Intensity

Results: Headline



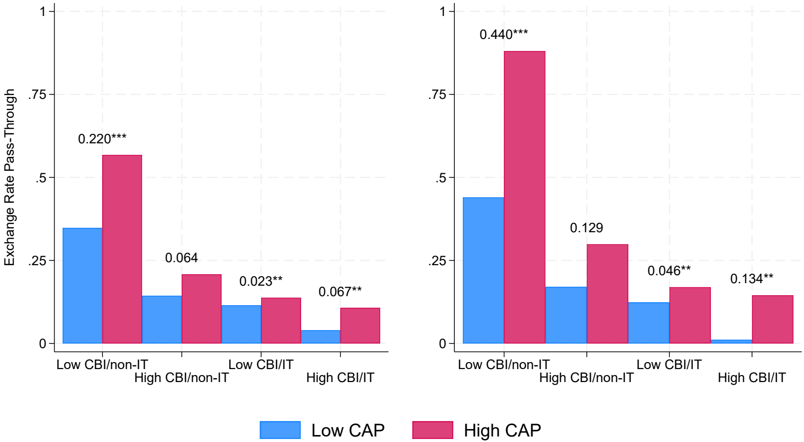
Pass-Through by Import Intensity

Results: Headline Comparison

	AEs	EMs
Domestic Prices (macro studies)		
Campa and Goldberg (2008), 1975–2003	15%	
Gagnon and Ihrig (2004), 1984–2003	5%	
Carrière-Swallow et al. (2024), 1990–2022	7.5%	28%
Choudhri and Hakura (2006), 1979–2000	14%	26%
Jašová et al. (2019), 2009–2017	6%	20%
Caselli and Roitman (2019), 1990–2013		22%
Average	9.5%	24%
Our results: Pre-2008	10.1%	26.7%
2009–2022	13.4%	16.5%
Import Prices (micro studies)		
Chen et al. (2021), UK 2010–2017	30%	
Gopinath and Itskhoki (2010), US 1994–2005	16%	
Gopinath, Itskhoki and Rigobon (2010), US 1994–2005	30%	
Gopinath and Rigobon (2008), US 1994–2004	22%	
Amiti, Itskhoki and Konings (2014), non-EA 2000–08		80%
Gopinath et al. (2020), 1992–2015		77%[3]
Average	24.5%	78.5%
Our results: Pre-2008	20.7%	63.4%
2009–2022	11.2%	35.6%

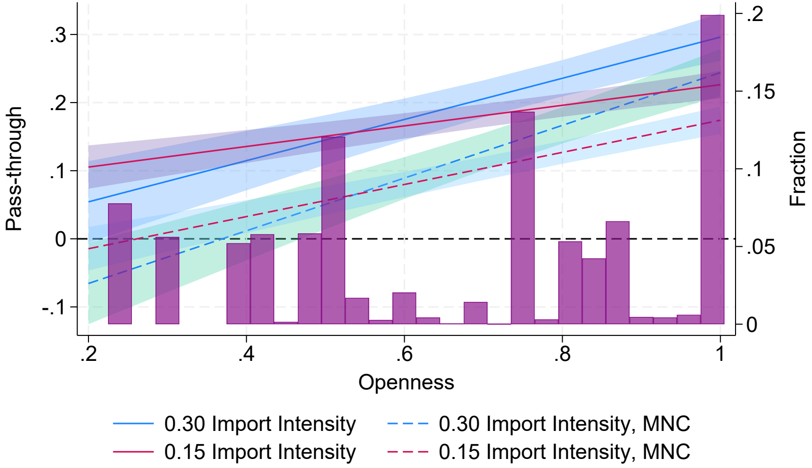
[3] Sample of EMs and AEs.

Results: Macro Policy Mix



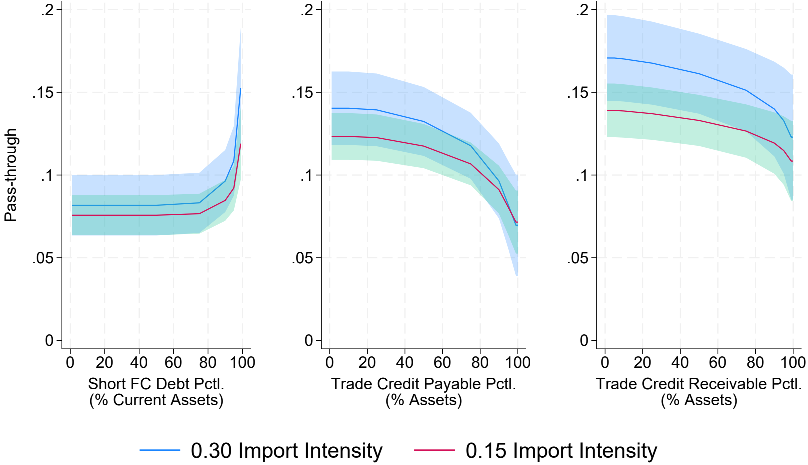
Emerging Market Pass-Through by Policy Mix
(CAP = Capital Account Openness from Quinn (1997))

Results: Multinationalism and Openness



Emerging Market Pass-Through by Multinationalism and Openness

Results: Firm Financing



Emerging Market Pass-Through by Firm Financing

In summary

Our study of ERPT and firms

- joins the study of the complex mechanisms of ERPT at the firm level
- to the impact of economic structure and policy environment at the macro level
- which can inform better policy decisions to manage the impacts of exchange rate fluctuations on different types of firms and economies.

Amiti, Mary, Oleg Itskhoki, and Jozef Konings, "Importers, Exporters, and Exchange Rate Disconnect," *American Economic Review*, 2014, *104* (7), 1942–78.

Campa, José Manuel and Linda S. Goldberg, "Pass-Through of Exchange Rates to Consumption Prices: What Has Changed and Why?," in "International Financial Issues in the Pacific Rim: Global Imbalances, Financial Liberalization, and Exchange Rate Policy," University of Chicago Press, 08 2008.

Carrière-Swallow, Yan, Melih Firat, Davide Furceri, and Daniel Jiménez, "State-Dependent Exchange Rate Pass-Through," *Oxford Bulletin of Economics and Statistics*, 2024.

Caselli, Francesca G. and Agustin Roitman, "Nonlinear exchange-rate pass-through in emerging markets," *International Finance*, 2019, *22* (3), 279–306.

Chen, Natalie, Wanyu Chung, and Dennis Novy, "Vehicle Currency Pricing and Exchange Rate Pass-Through," *Journal of the European Economic Association*, 2021, *20* (1), 312–351.

Choudhri, Ehsan U. and Dalia S. Hakura, "Exchange rate pass-through to domestic prices: Does the inflationary environment matter?," *Journal of International Money and Finance*, 2006, *25* (4), 614–639.

Gagnon, Joseph E. and Jane Ihrig, "Monetary policy and exchange rate pass-through," *International Journal of Finance & Economics*, 2004, *9* (4), 315–338.

Gopinath, Gita and Oleg Itskhoki, "FREQUENCY OF PRICE ADJUSTMENT AND PASS-THROUGH," *The Quarterly Journal of Economics*, 2010, *125* (2), 675–727.

— **and Roberto Rigobon**, "Sticky Borders," *The Quarterly Journal of Economics*, 2008, *123* (2), 531–575.

— **, Emine Boz, Camila Casas, Federico J. Díez, Pierre-Olivier Gourinchas, and Mikkel Plagborg-Møller**, "Dominant Currency Paradigm," *American Economic Review*, 2020, *110* (3), 677–719.

— **, Oleg Itskhoki, and Roberto Rigobon**, "Currency Choice and Exchange Rate Pass-Through," *The American Economic Review*, 2010, *100* (1), 304–336.

Jašová, Martina, Richhild Moessner, and Elöd Takáts, "Exchange Rate Pass-Through: What Has Changed Since the Crisis?," *International Journal of Central Banking*, September 2019, *15* (3), 27–58.

Quinn, Dennis, "The Correlates of Change in International Financial Regulation," *American Political Science Review*, 1997, *91* (3), 531–551.