



# Exchange Rate Pass-Through: First versus Second-Round Effects

**Yan Carrière-Swallow**

(joint work with Bertrand Gruss, Nicolás Magud  
and Fabián Valencia)

Madrid, Spain | June 23, 2016



# Outline

- **Motivation**
- **Estimating ERPT**
- **Can benchmarks help us assess ERPT estimates?**
- **What determines ERPT?**
- **Policy conclusions**

➤ **Motivation**

➤ Estimating ERPT

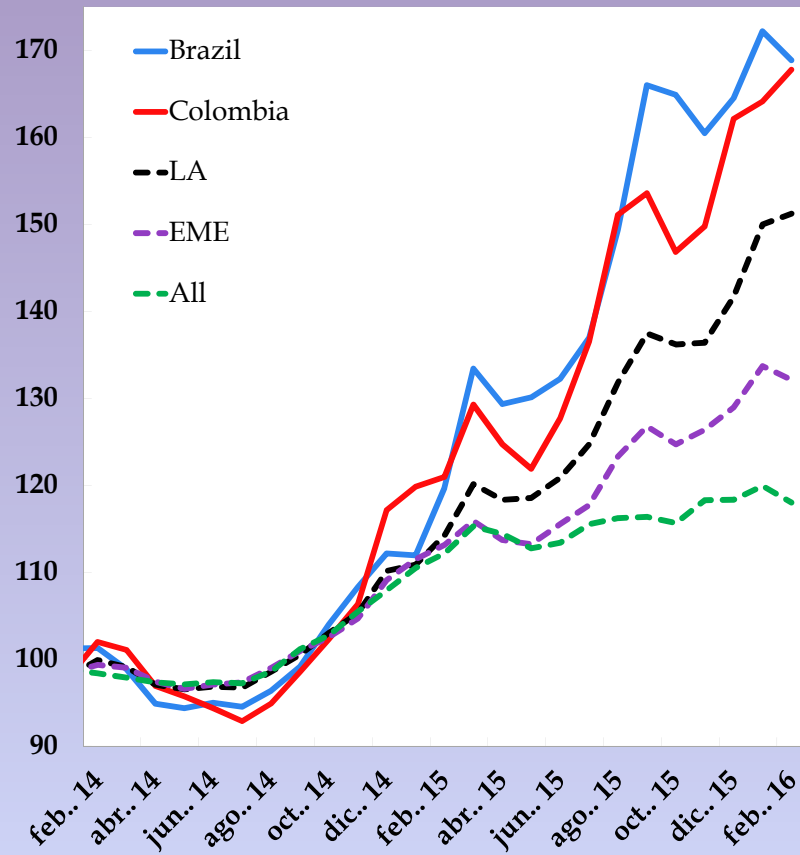
➤ Can benchmarks help us assess ERPT estimates?

➤ What determines ERPT?

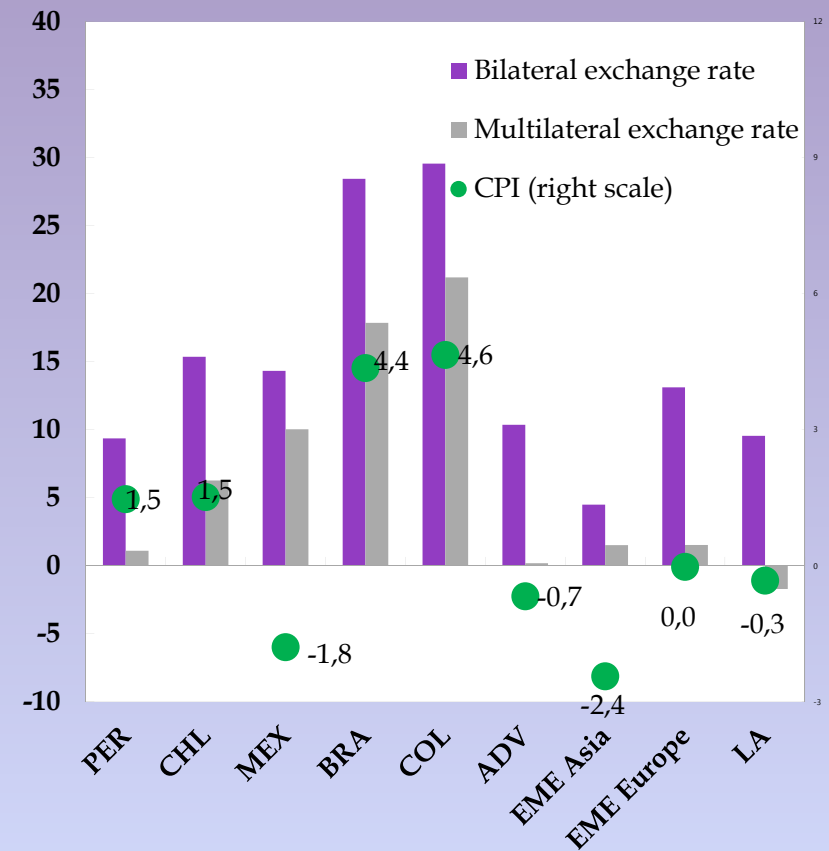
➤ Policy conclusions

# Depreciation and Inflation in Latin America: 2013-2015

*Bilateral Exchange Rates; Index: 2014=100*



*Depreciation and Inflation, Dec. 2013-Dec. 2015*



➤ Motivation

➤ **Estimating ERPT**

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➤ Policy conclusions

# Estimating Exchange Rate Pass-Through

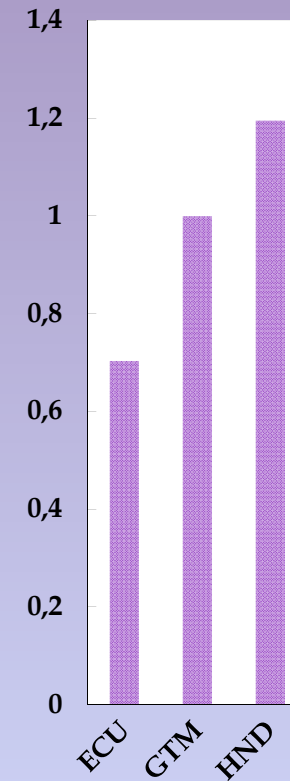
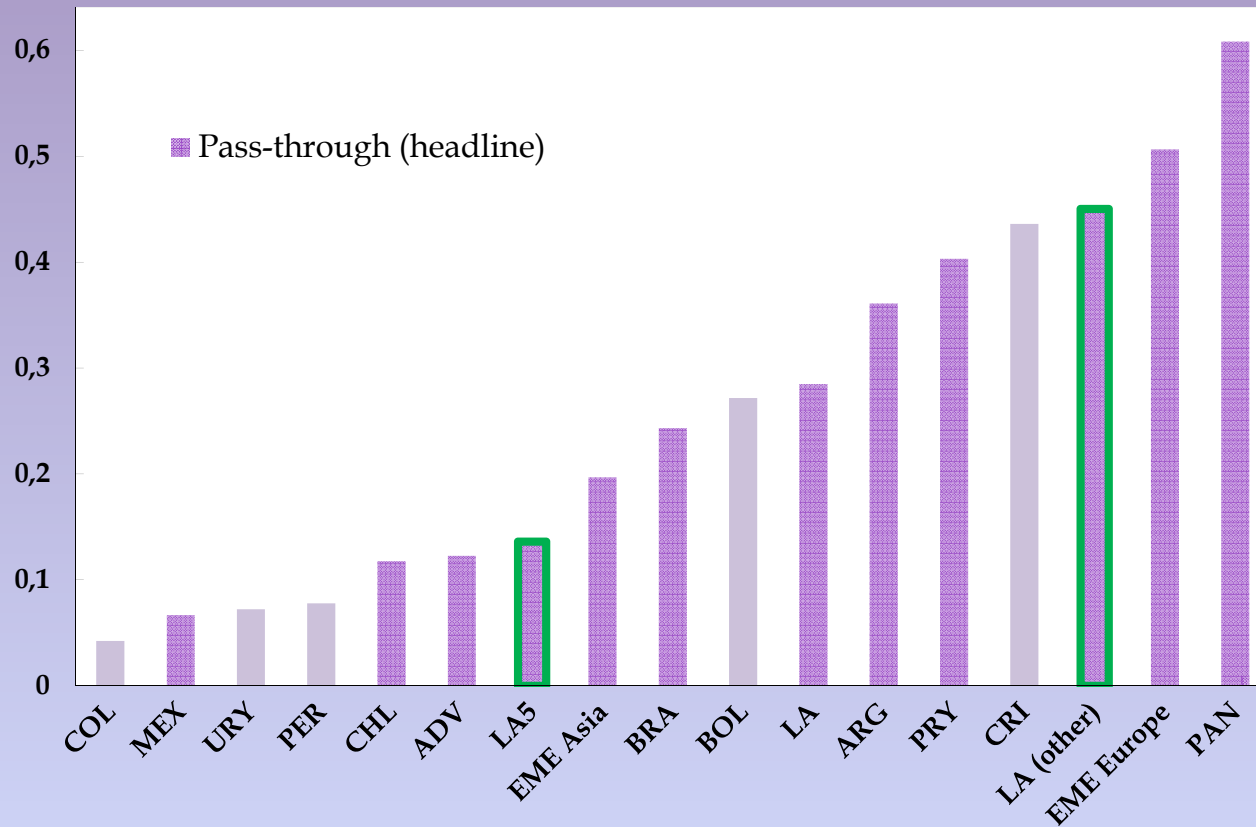
- ▣ Estimate ERPT to headline inflation in a sample of 62 countries
- ▣ Reduced-form cumulative impulse-response functions estimated using local projections method:

$$p_{i,t+h-1} - p_{i,t-1} = \alpha^h + \sum_{j=0}^6 \beta_j^h \Delta NEER_{i,t-j} + \sum_{j=1}^6 \rho_j^h \Delta p_{i,t-j} + \gamma_j^h \Delta X_{i,t} + \mu_i^h + \varepsilon_{i,t}^h$$

- ▣ The vector  $X_{i,t}$  of controls includes:
  - ▣ World price of oil and food in U.S. dollars
  - ▣ Domestic output gap
  - ▣ Production cost of trading partners (trade-weighted PPI)

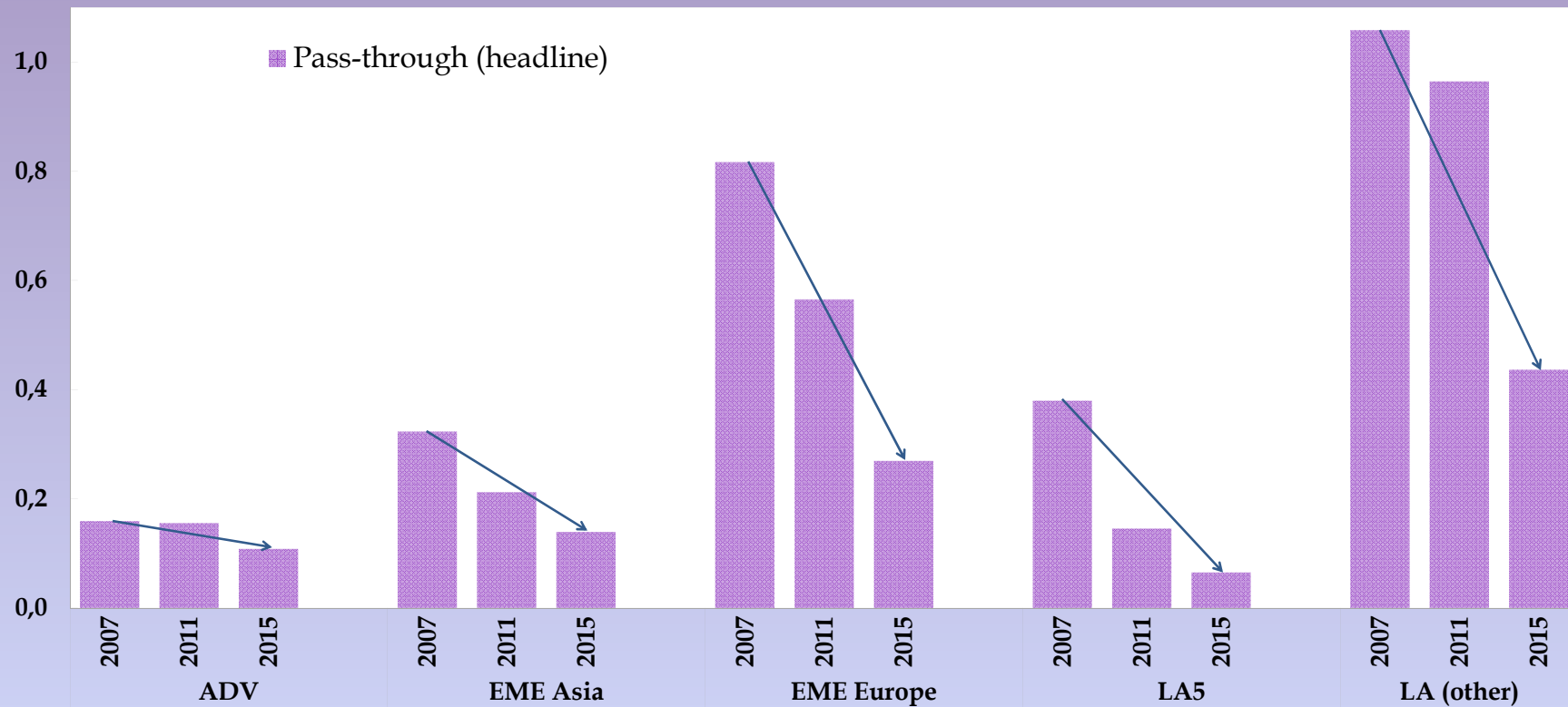
# Pass-through varies across countries...

*(Estimated pass-through to headline CPI after 24 months)*



## ... and has fallen over time

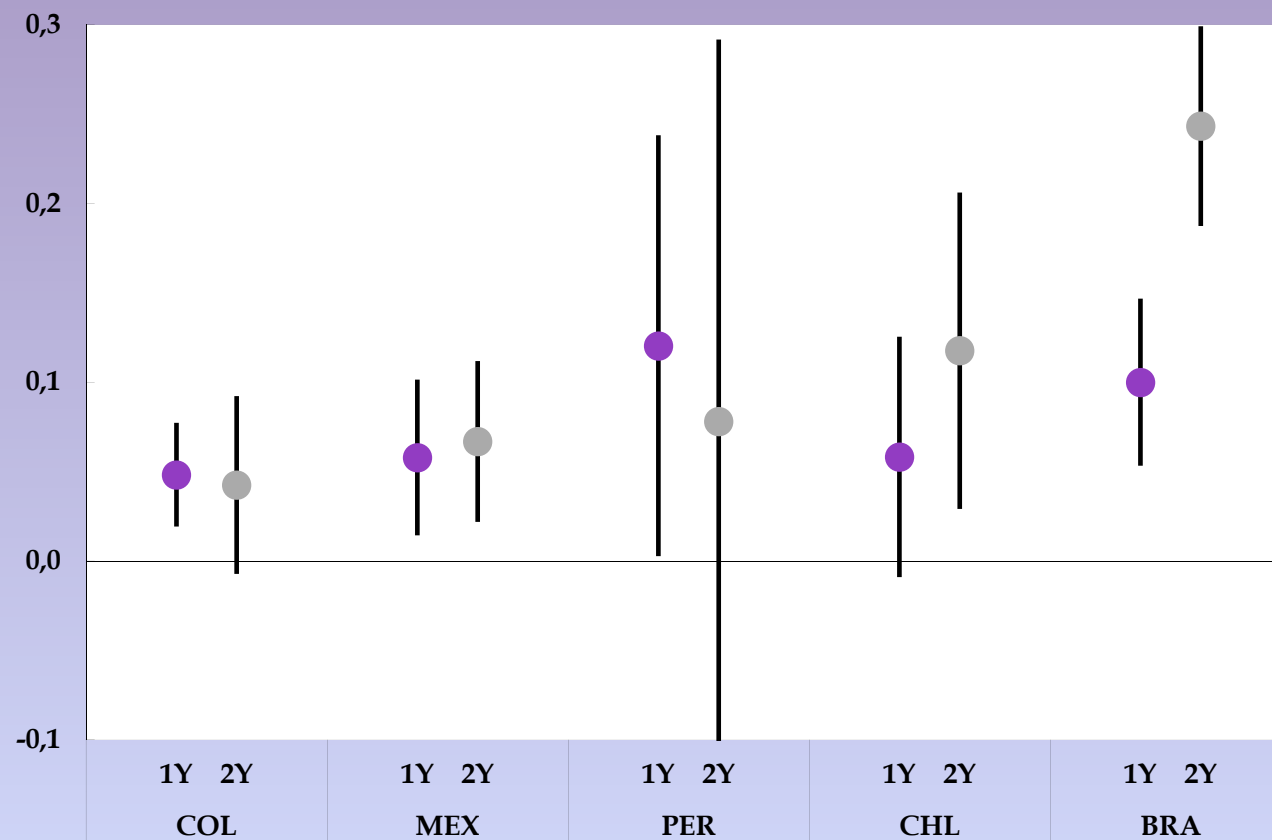
*(Estimated pass-through to headline CPI after 24 months;  
12-year rolling windows)*





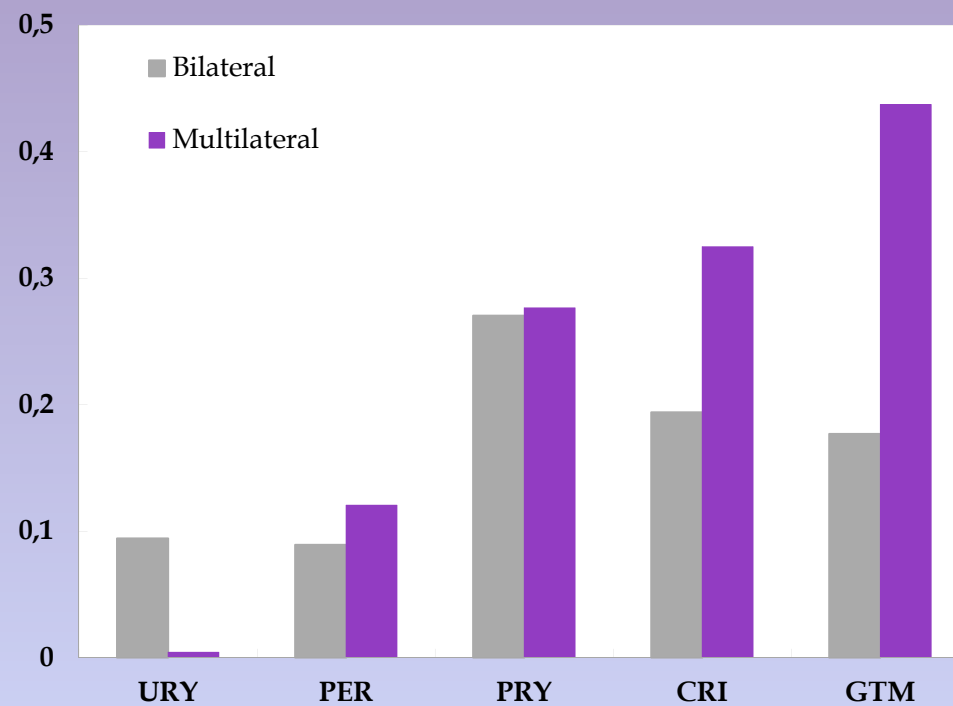
# Pass-through Dynamics: Fast and Slow

*(Estimated pass-through to headline CPI after 12 and 24 months)*



# Bilateral vs. Multilateral Pass-through

*(Estimated pass-through to headline CPI after 12 months)*



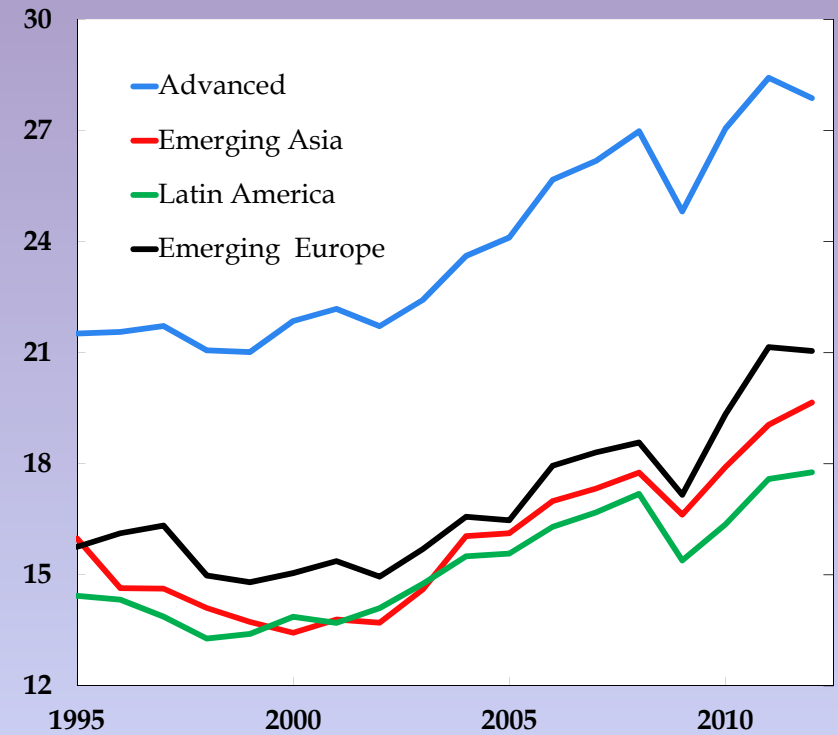
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# Assessing Exchange Rate Pass-Through

- ▣ How to tell whether a given ERPT estimate is *big* or *small*?
- ▣ Following Gopinath (2015) and Burstein, Eichenbaum and Rebelo (2005), we calculate the import content of domestic consumption.
  - Provides a benchmark for ERPT under complete import-price pass-through, consistent with absence of second-round effects.
- ▣ Use global input-output matrices to measure both *direct* import content and *indirect* import content of consumption.
  - EORA data allows measurement for all countries, by year.

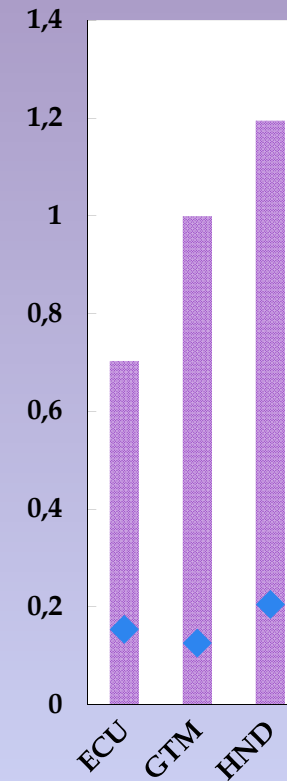
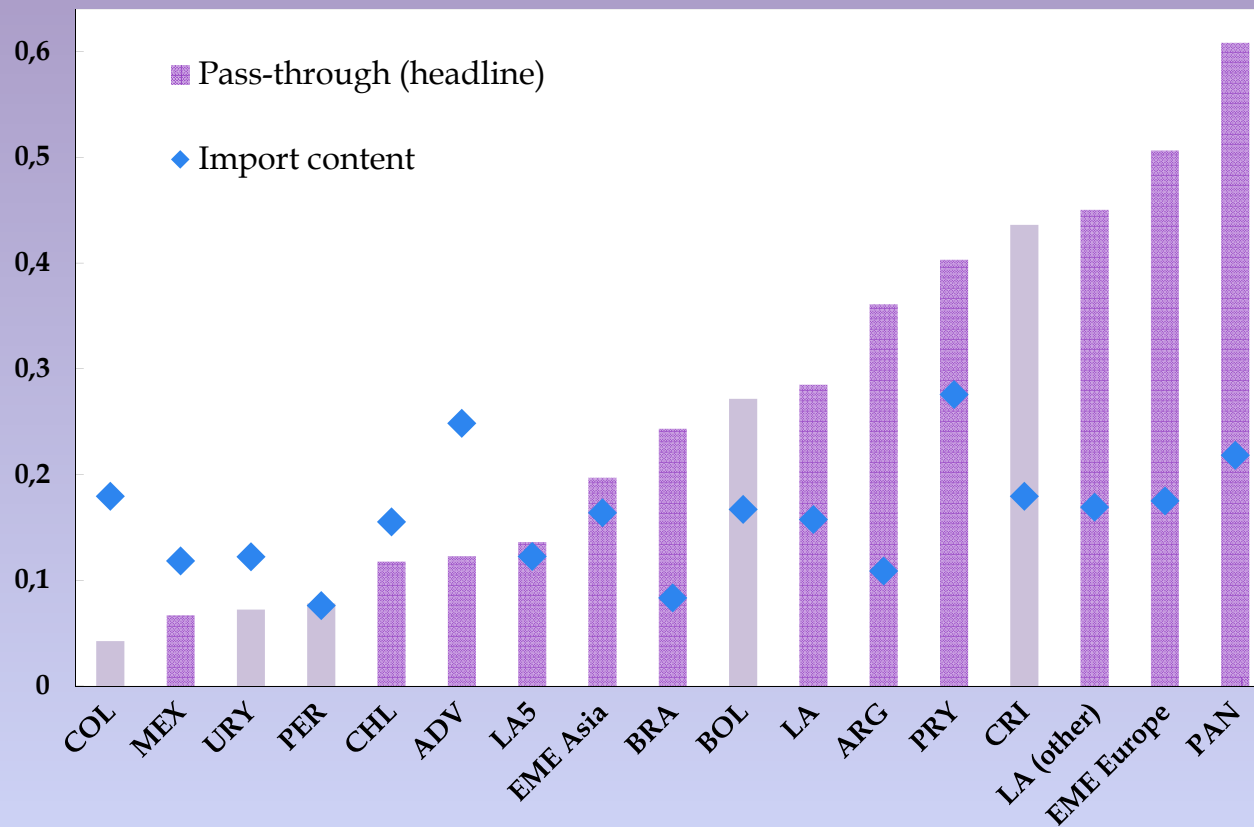
# Import content varies across countries and has risen over time

*(Share of domestic consumption)*



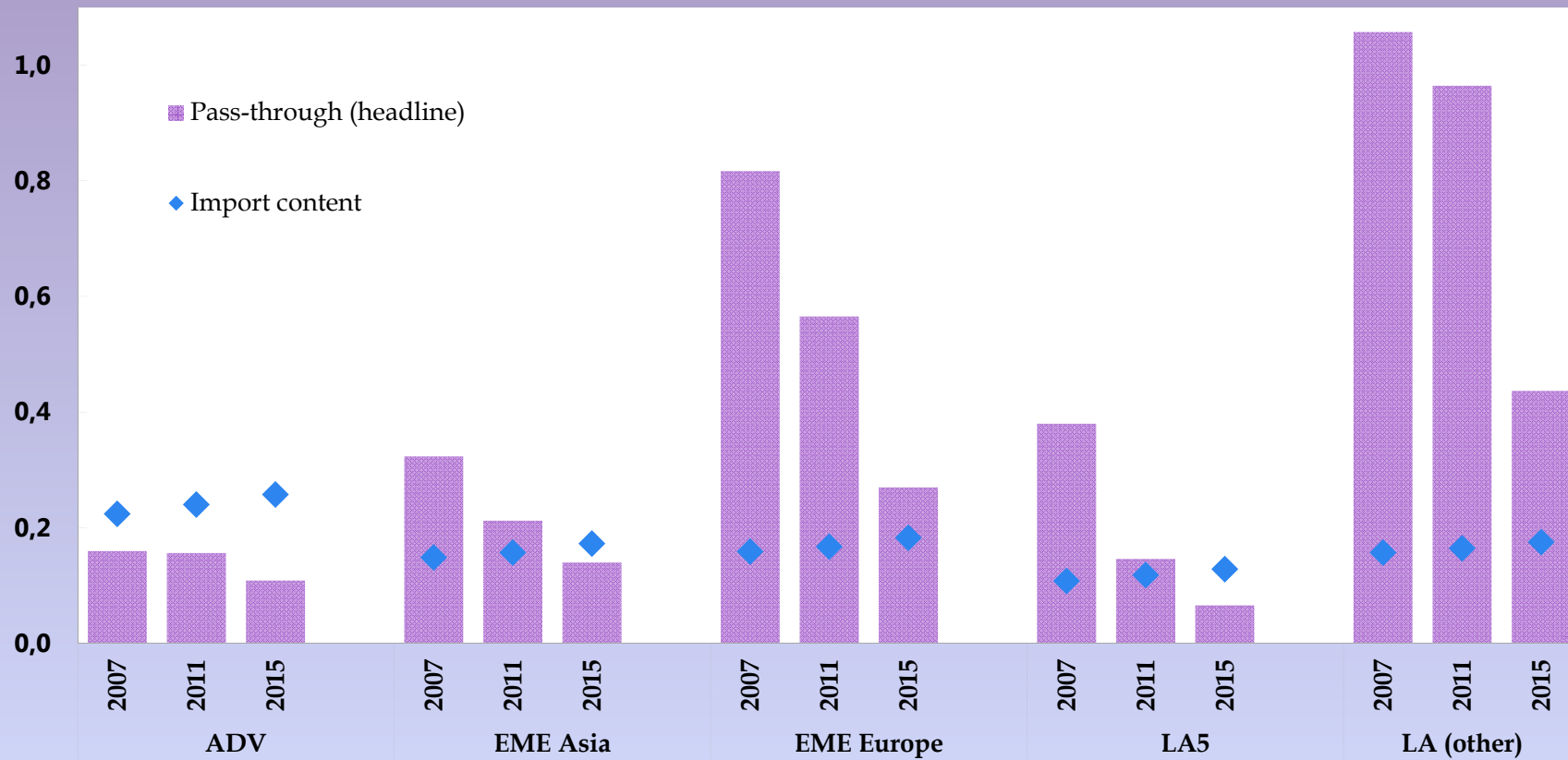
# Pass-through and benchmarks vary across countries

*(Estimated pass-through to headline CPI after 24 months)*



# Among EMEs, convergence to benchmarks

*(Estimated pass-through to headline CPI after 24 months;  
12-year rolling windows)*

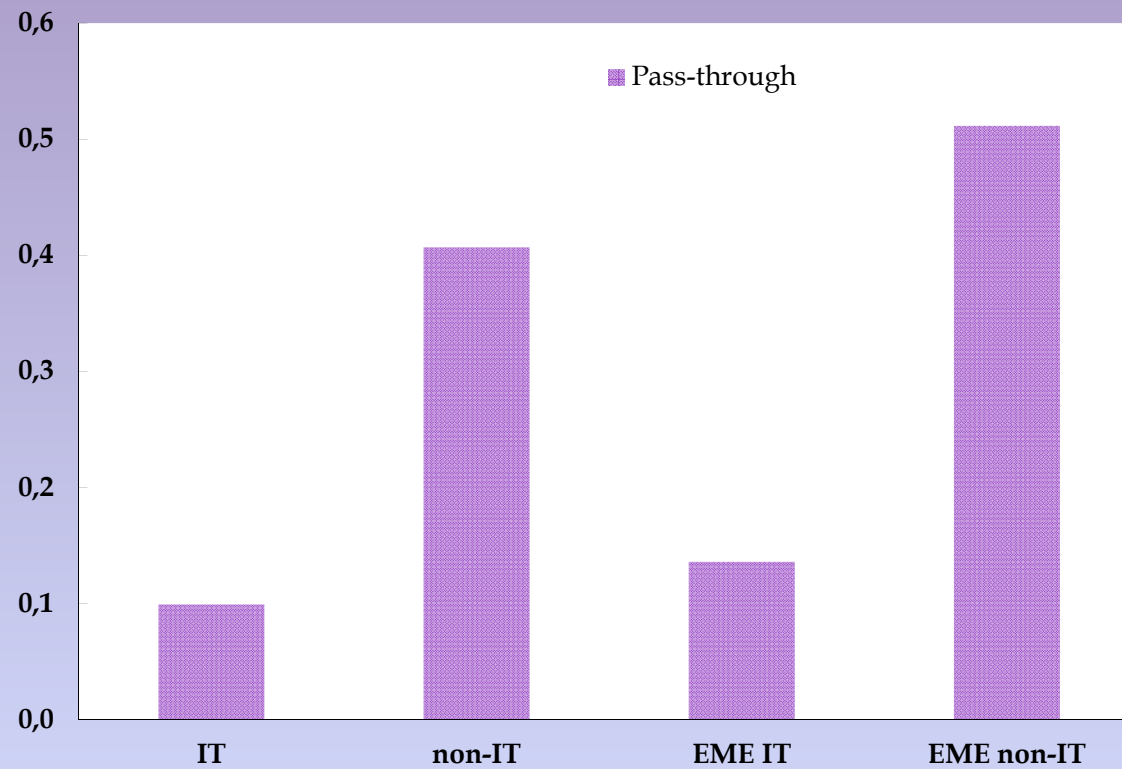


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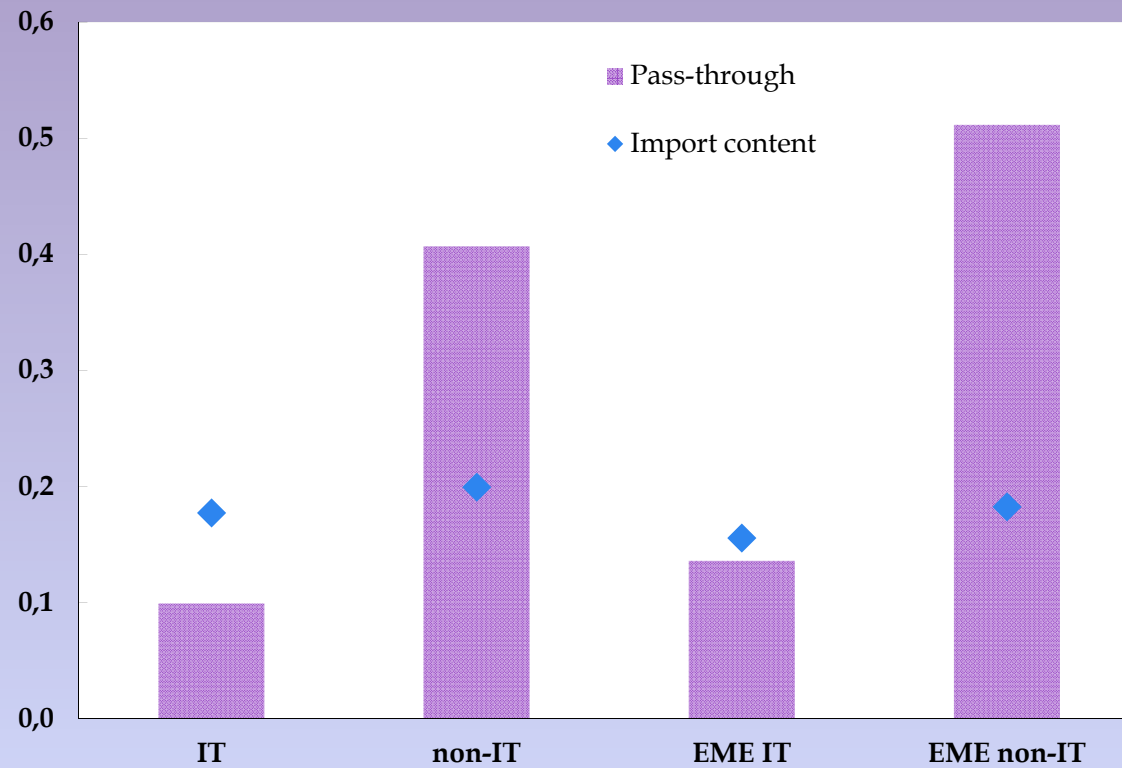
# What determines ERPT?

*(Estimated pass-through to headline CPI after 24 months;  
by monetary policy framework)*



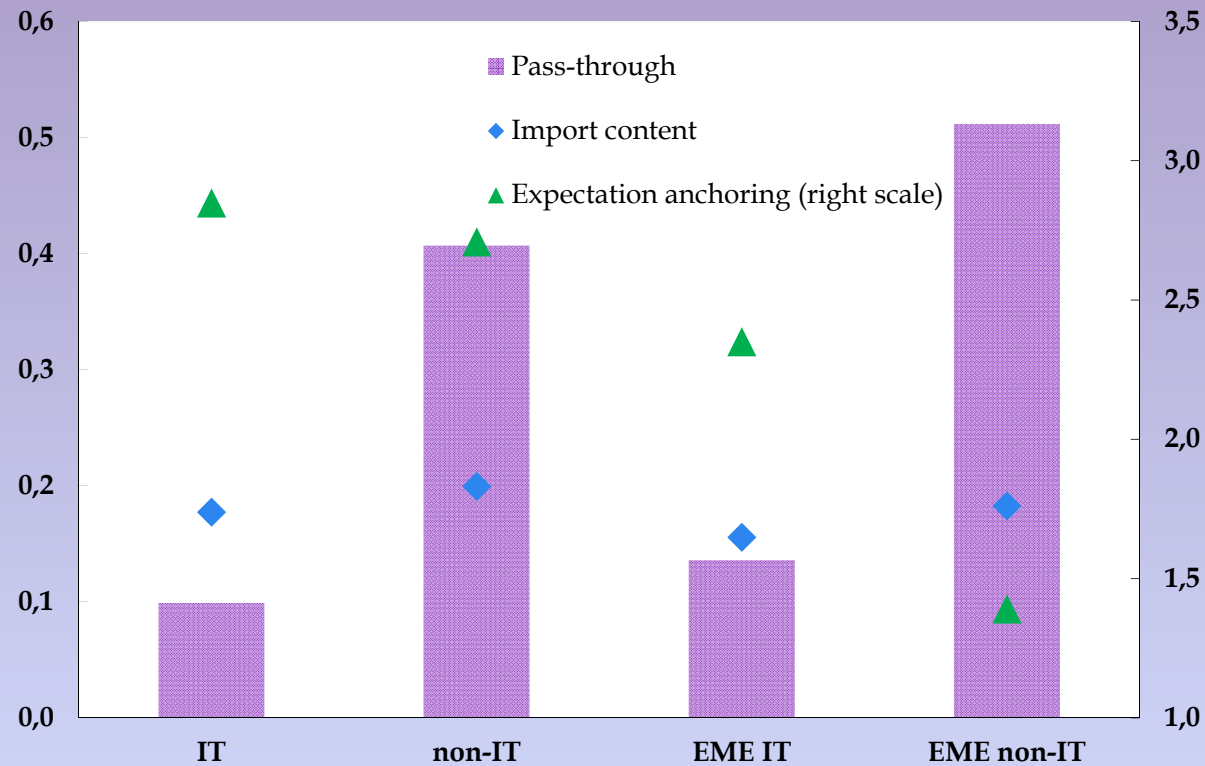
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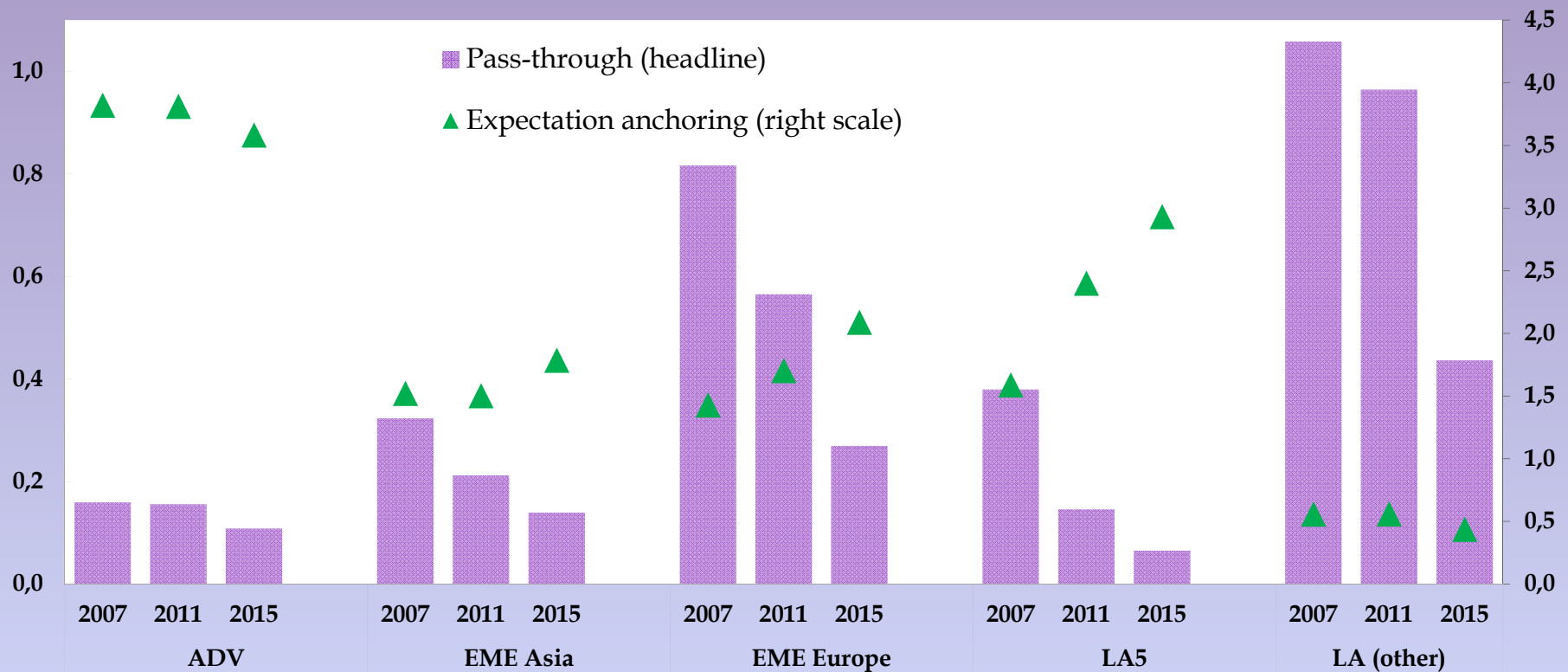
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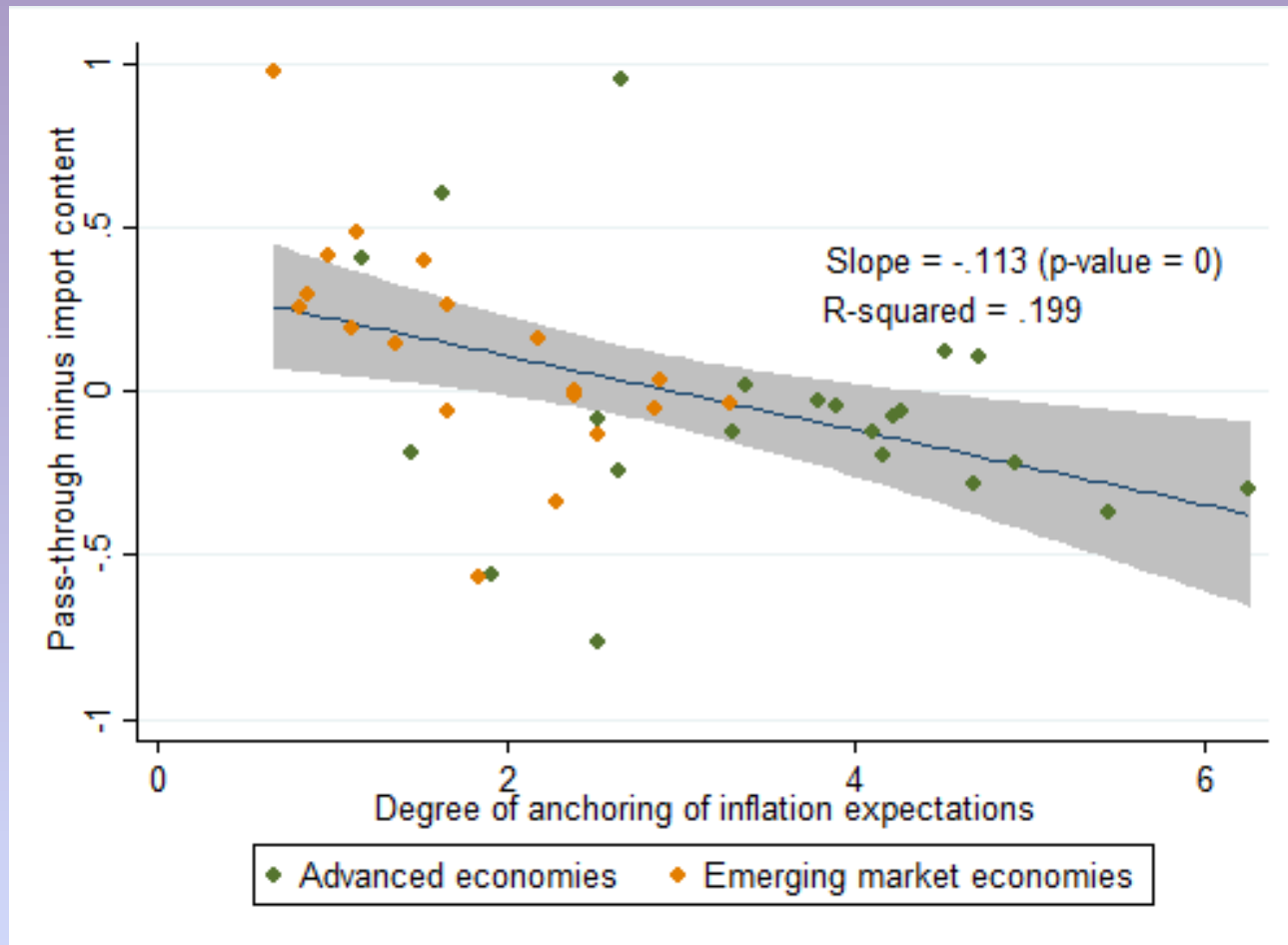
# What determines ERPT?

*(Estimated pass-through to headline CPI after 24 months;  
12-year rolling windows)*



# What determines ERPT?

*(Better-anchored inflation expectations related to smaller deviation of pass-through from benchmark)*



# What determines ERPT?

*(Second-stage regressions with dependent variable:  
estimated ERPT at 24-months minus import content)*

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Degree of Anchoring of Inflation Expectations	-0.072*** (0.007)	-0.085*** (0.022)	-0.083*** (0.022)	-0.075*** (0.022)	-0.097*** (0.022)	-0.084*** (0.022)	-0.078*** (0.022)	-0.098*** (0.022)
Average inflation			0.001 (0.003)					0.013 (0.009)
Inflation volatility				0.007*** (0.003)				0.022*** (0.006)
Average depreciation					-0.007** (0.003)			-0.019*** (0.005)
Exchange rate volatility						0.000 (0.001)		-0.000 (0.001)
Volatility of near-term inflation forecasts							0.005 (0.004)	-0.019 (0.013)
Constant	0.179*** (0.023)							
Time fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	327	327	327	327	327	327	327	327
R-squared	0.222	0.726	0.726	0.734	0.731	0.726	0.728	0.757

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# Policy implications

- Improvements in macroeconomic frameworks have been associated with lower exchange rate pass-through.
  - Easier for monetary policy to focus on stabilizing domestic demand while allowing the exchange rate to facilitate adjustment of relative prices following external shocks.
- Where inflation expectations are well anchored, second-round effects are expected to be small and monetary policy can afford to remain accommodative following depreciations.
- However, where second-round effects continue to predominate, monetary policy needs to be more pro-active to preserve price stability.





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