"Heterogeneity in Exchange Rate Pass-Through to Import Prices in Thailand: Evidence from Micro Data" By Tosapol Apaitan, Pym Manopimoke, Nuwat Nookhwun, and Jettawat Pattararangrong

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Overall

- An interesting paper that is easy to read
  - The paper has many visualizations
  - It is good reading for a general audience and undergraduate students
- I will
  - summarize what the paper does
  - discuss how I interpret the findings

Summary

- Consider a fundamental question: how large is the exchange rate pass-through on import prices

$$\triangle E_t \Rightarrow \triangle P_t$$

- Local Currency Pricing (LCP) versus Producer Currency Pricing (PCP)
  - Example: Hong Du-sik (Chief Hong) exports fish from Gongjin, South Korea, to Bangkok, Thailand. The price can be 1,000,000 baht (LCP) or 36,000,000 South Korean won (PCP).
  - Very short run: valuation effects
    - ⋆ Under LCP, $\triangle E$ does not affect import prices
    - ⋆ Under PCP, $\triangle E$ has a large effect on import prices
  - Later
    - ⋆ The seller and the buyer can renegotiate the price.
- Introducing Dominant Currency Pricing (DCP)
  - Chief Hong can also choose 27,000 dollars (DCP)

Estimation

- A simple model

$$\triangle P_t = \beta \triangle E_t + \varepsilon_t$$

- The model used in the paper

$$\triangle P_t = \sum_{k=0}^{8} \beta_k \triangle E_{t-k} + \boldsymbol{\Gamma} \boldsymbol{Z}_t + \varepsilon_t$$

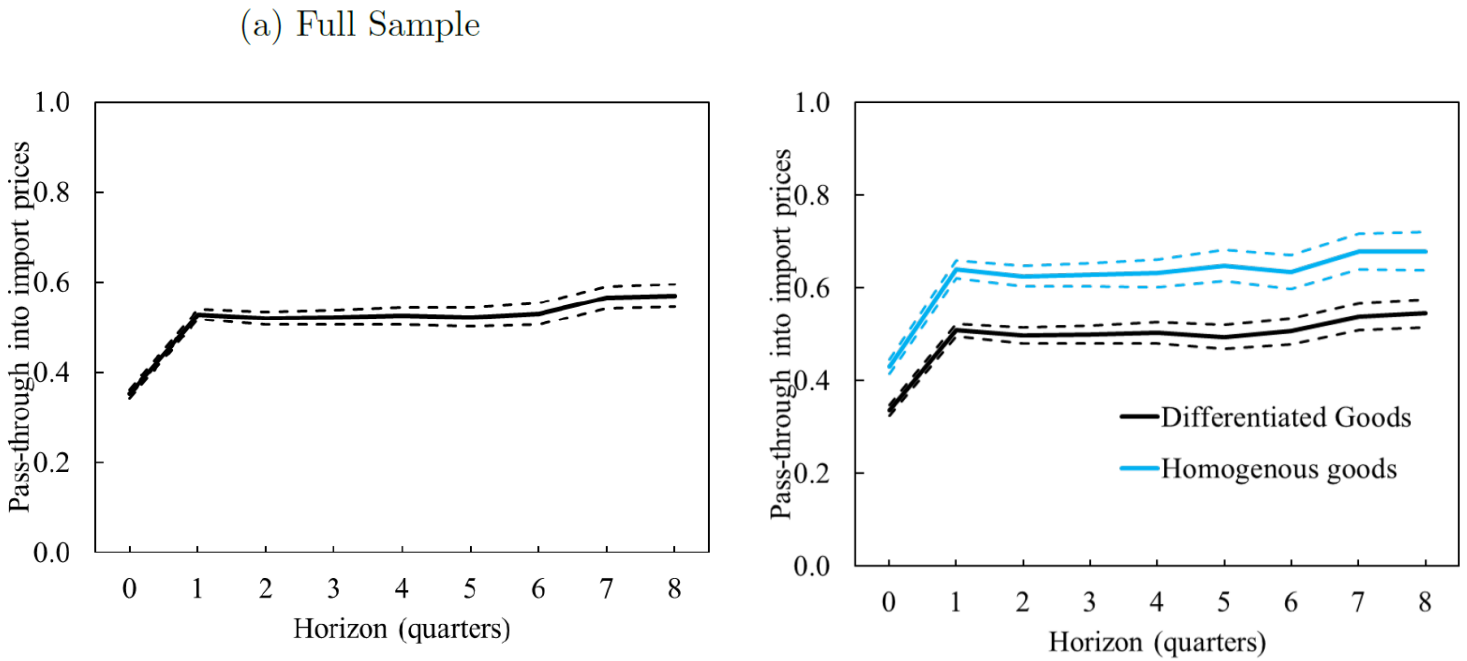
  - includes 8 lags for different pass-through effects over 8 periods
  - includes controls $\boldsymbol{Z}_t$: exporter country's PPI and GDP, Thailand's CPI and GDP, and oil prices
  - includes fixed effects such as firm FEs, exporting country FEs, origin country FEs

- This paper mainly discusses the cumulative effects

$$\beta(m) = \sum_{k=0}^{m} \beta_k$$

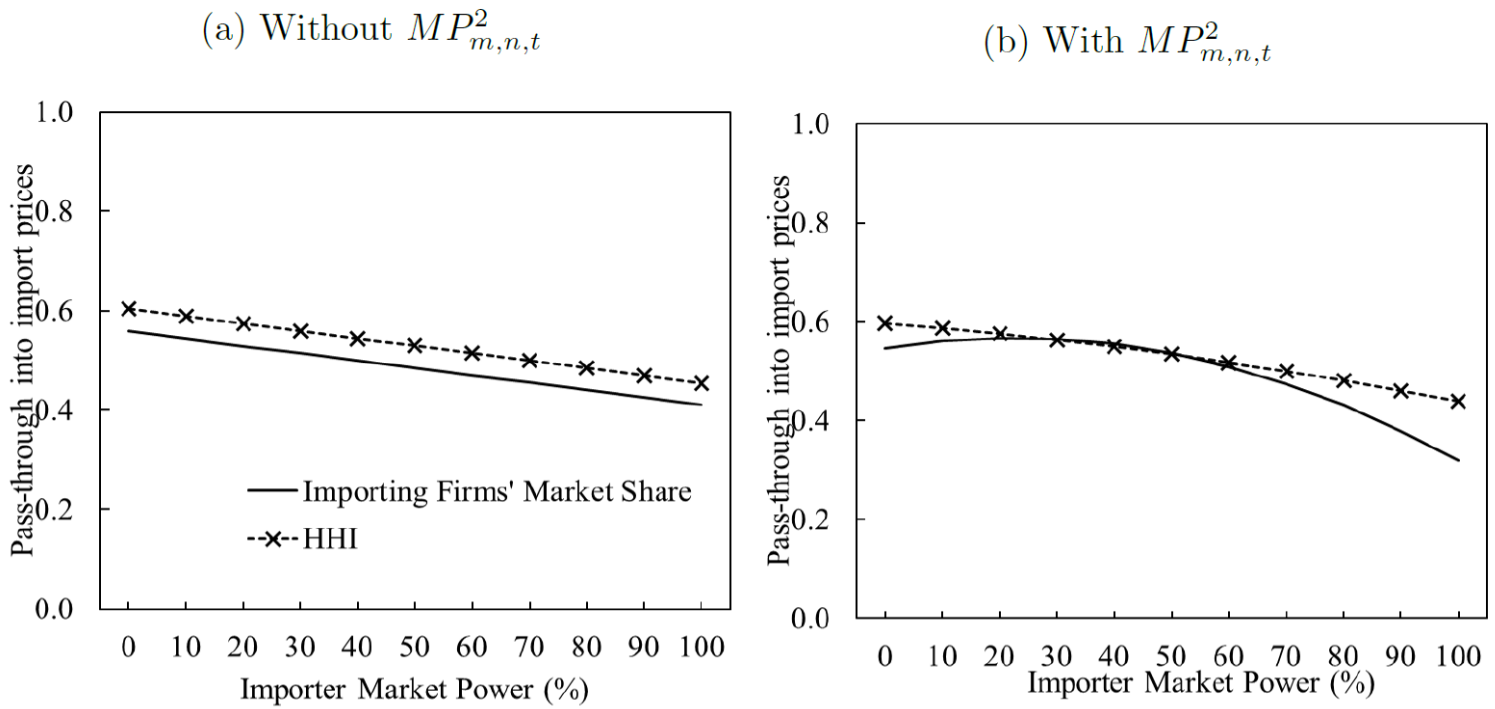
Findings

Figure: (i) Full sample and (ii) homogenous goods vs differentiated goods



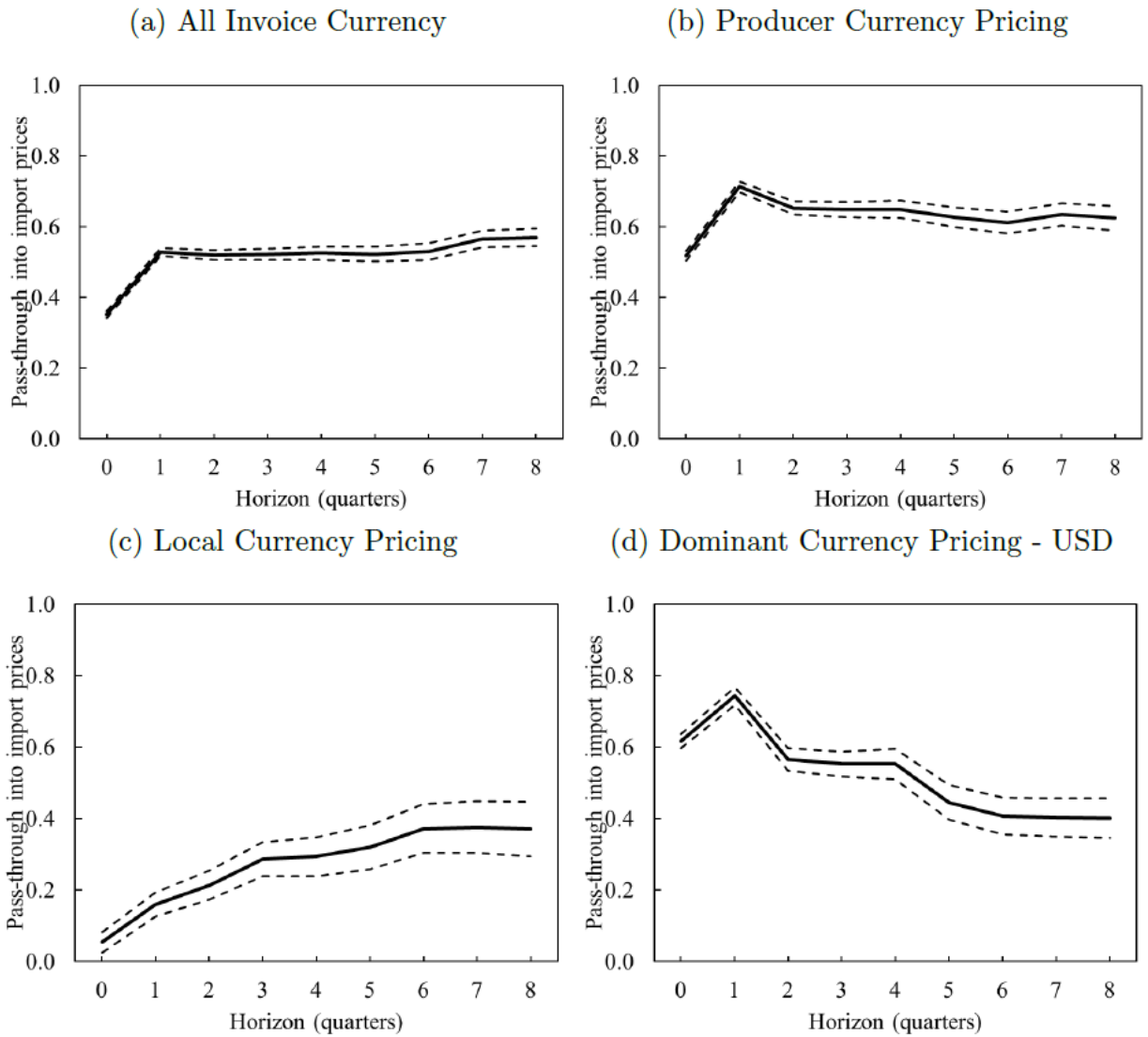
Findings

Figure: Market power



Findings

Figure: Invoicing currency



Comments

1. The paper is good for the general audience. However, the readers who are interested in this paper will need more technical details.

- Variable descriptions and definitions are unclear
  - Real GDP: what based year? seasonally adjusted?
  - Oil prices: the average price? the first price? the last price? what currency?
- There is only one regression table
  - What are the estimates and their standard errors?
  - What fixed effects are included?

2. The paper include many topics in one work. I would encourage the authors to split this paper into 2 or 3 self-containing research papers.

- ERPT and market power or the elasticity of substitution
- ERPT and invoicing currency
- Asymmetries and Non-Linearities in ERPT

Comments

3. Estimating the welfare effect of exchange rate depreciation?

- Since the paper is policy-oriented, I try to make the finding more relevant to a general audience.
- Thai baht has depreciated to 36 baht for one USD. How large is the price effect on Thai consumers?
- Consider a simple utility function

$$U = \prod_{j=1}^{J} C_j^{\alpha_j} \text{ where } C_j = \left(C_{jd}^{\frac{\sigma_j - 1}{\sigma_j}} + C_{jm}^{\frac{\sigma_j - 1}{\sigma_j}} \right)^{\frac{\sigma_j}{\sigma_j - 1}}$$

- Welfare effect can be computed as

$$\triangle \log(U) = -\sum_{j=1}^{J} \alpha_j \triangle \log(P_j)$$

$$\text{where } \triangle \log(P_j) = s_{jd} \triangle \log(P_{jd}) + s_{jm} \triangle \log(P_{jm})$$

Comments

3. Estimating the welfare effect of exchange rate depreciation? (Cont.)

- Consider January 2022 – June 2022
  - Suppose $ERPT_i = 0.57$ and $s_i^M = 0.5$ for all i.
    - ⋆ C/GDP≈0.52 and IM/GDP≈0.51
  - Assume domestic prices do not change.
  - Thai baht depreciated by 10% ($\approx$ 32.5 to 36)
- Then the aggregate price of industry i's goods and the aggregate price (or CPI) would be expected to increase by 2.8%.
  - Welfare would be expected to fall by 2.8%.
- Caveats
  - In the medium-run, domestic prices may change due to the price effects on intermediate inputs.
    - ⋆ For example, imported inputs or oil prices (for transportation).
  - The direct effect of ERPT depends on the duration.
  - The calculation should consider the heterogeneity across industries or use firm-level estimates.

Comments

4. Compared with previous works on Thailand's ERPT

- Monthly data
  - Pholphirul (2003, TDRI Quarterly Review): Jan 1996 to May 2003
    - ★ 0.104 for the animal and vegetable oils and fats industry and 0.527 for the machinery industry.
  - Wattanakoon (2013, Thammasat Economic Journal): Jan 2000 to Aug 2011
    - ★ $\triangle CPI / \triangle E = 0.047$ in the long-run
  - Bala, Songsiengchai and Chin (2017, Economics Bulletin): Jan 2002 to July 2010
    - ★ The exchange rate depreciation has a significant impact on consumer price index, while the appreciation does not.
  - Termprasertsakul (2018, Economics and Public Policy Journal): Jan 2007 to Dec 2017
    - ★ Thai Baht appreciation is passed-through more strongly than depreciation.
- Quarterly data
  - Jiranyakul (2018, Working paper): 2000 to 2017
    - ★ $\triangle CPI / \triangle E = 0.91$ in the long-run
  - Nookhwun (2019): 2001–2017
    - ★ ERPT is small and is significant only when the baht depreciates.

Comments

5. The current analysis aggregates transactional data to quarterly data.

- However, a period of three months may be too long.
  - Which exchange rates should we use?
  - Perhaps, the choice is due to the availability of other data such as Real GDP?
- But if using weekly data or monthly data, there likely are a lot of zeros for each firm-product-origin ID.
  - Note that transactional data show only positive trade flows.
- Zero trade flows can be a problem too, especially when the analysis use p_{t-1} to compute $\triangle p_t$.
  - Need firms to import in two consecutive periods.
  - Do we need to consider extensive margins or the timing of imports?
- One solution may be to aggregate the observations to monthly firm-product-origin data and use a bunch of fixed effects.
  - Use HS-6 or HS-2 instead of HS-11?
  - Ignore exporting countries (ports of shipments)?

Comments

6. Measuring market power

1. A usual problem in industrial organization is that regressing price on concentration (such as HHI) has no theoretical foundation.[1]
   - Harold Demsetz's critique of the old structure-conduct-performance literature.
     - ★ Concentration (the thing we can measure) is unrelated to the level of market power (the thing we care about).
   - Example 1: consider a case of two identical firms
     - ★ Bertrand: price $=$ marginal cost
     - ★ Counot: price $>$ marginal cost
     - ★ Cartel: monopoly price $>$ marginal cost
     - ★ but all cases have the same level of concentration
   - Example 2: CES preferences imply a constant markup regardless of concentration level.
   - "Concentration is worse than just a noisy barometer of market power. Instead, we cannot even generally know which way the barometer is oriented."
     - ★ Syverson (2019 JEP) "Macroeconomics and Market Power: Context, Implications, and Open Questions"
2. Selection bias
   - The exclusion of non-importers (who likely are small firms with small market power) may cause a bias in measuring market power.

[1] Chris Conlon (NYU Stern) reviewed this here: https://youtu.be/FU3HFs4IZD0

Comments

6. Measuring market power (cont.)

- With detailed data, can markup or market power be estimated at the firm level?
  - Firm-level data with information on inputs may allow for estimating the production function.
  - Cost of goods sold (COGS) as a proxy for variable cost?
- Compute markup from

$$p_{it} = \mu_{it} MC_{it},$$

then assume

$$\log(\mu_{it}) = \log(\mu_t) + \text{FE}_t + \varepsilon_{it}$$

to recover μ_t.

  - For example, Hagemejer, Hałka, and Kotłowski (2022) "Global value chains and exchange rate pass-through—The role of non-linearities" in International Review of Economics & Finance

Comments

7. How exogenous is the choice of invoicing currency?

- It seems that the choice may depend on exchange rate forecasts, exchange rate volatility, and price negotiations.
  - In the period in which the bilateral exchange rate is highly volatile and the ERPT is low, the importers may choose DCP.
  - There could be a censoring problem.
- I wondered:
  - Do we observe any invoicing currency switching?
  - Could there be a reverse causality problem in which ERPT causes the choice of invoicing currency?

Minor Comments

1. The 2008 financial crisis.
   - The time period 2007-2019 covers the financial crisis.
   - The exchange rate movement during the crisis also captures some economic conditions which determine the ERPT.
   - Perhaps, robustness checks with
     - 2010-2019
     - 2014-2019
2. Fixed effects
   - If the coefficients of the controls are not a focus, may consider
     - HS2-quarter fixed effects (for global industry-level shocks)
     - country-quarter fixed effects (for other country-time shocks other than PPI or GDP)
     - firm-year fixed effects (for time-varying firm-level shocks)