3rd BSP International Research Fair
14 June 2023, PICC Manila

HOW DO EXCHANGE RATES AFFECT THE BIG ONE? AN EMPIRICAL ANALYSIS OF THE EFFECT OF EXCHANGE RATES ON RCEP EXPORTS USING THE GRAVITY MODEL

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Objective of the study

- Determine the relevant exchange rate variables (exchange rate volatility, misalignment, real effective exchange rates, and exchange rate regime) that affect the level of RCEP exports through an augmented gravity model estimation

Methodology

- Gravity model & Poisson Pseudo-Maximum Likelihood technique
- Augmented traditional gravity equation with exchange rate variables
- Bilateral exports of 15 countries in RCEP
- 1996 to 2017 (22 years)
- 3,994 (baseline) / 3,564 (augmented) country-pair observations
- Several specifications to test the robustness of the impact of exchange rate variables on exports

Findings of the study

- An increase in a country's REER relative to the REER of its trading partner significantly reduces its exports to that country, providing evidence of export reducing effects of an appreciating currency.

- An increase in exchange rate volatility of country-pairs under a floating exchange rate regime decreases a reporting country's exports. However, the impact is relatively small.

Comments

- Good paper
  - ✓Comprehensive review of related literature
  - ✓Looked at different aspects of how the exchange rate can have an impact on trade
  - ✓Explained the appropriateness of the Poisson Pseudo-Maximum Likelihood Estimator
  - ✓Could be useful for RCEP policy discussions

Comments

- Highlighted the relevance of international trade on economic growth
- Include discussion of stylized facts on trade relationships among the RCEP countries and exchange rate trends
  - ✓What are you seeing in the data for the RCEP countries?
  - ✓Are you confirming initial observations using the gravity model?
  - ✓Could provide insights on the empirical estimates

Comments

- Include a control variable for international production networks/ global value chains (GVC)
  - ✓ As of end 2018, approximately 70% of global trade comprised trade in intermediate goods (TiVA-OECD)
  - ✓ "…RCEP region where international productions networks proliferate…" (p.4)
  - ✓ Importance of was mentioned several times in the paper
  - ✓ Data available: TiVA database (OECD), WITS (WB), ADB
  - ✓ To enrich discussion
  - ✓ Can alter the results and policy implications of the study

Comments

- Clarify "cty" variable in equations (2) and (3), defined as a set of proxy variables for time-varying outward and inward multilateral resistance terms

$$\ln(Exports)_{ij,t} = a_o + \beta_1 \ln(GDP_{i,t} * GDP_{j,t}) + \beta_2 \ln(dist)_{ij} + \beta_3 contig_{ij} + \beta_4 comlang\_off_{ij} + \beta_5 comcol_{ij} + \beta_6 \ln(REER)_{ij,t} + \beta_7 Misalign_{ij,t} + \beta_8 Float_{ij,t} * \ln(Volatility)_{ij,t} + \beta_9 cty_{ij,t} + \varepsilon_{ij,t} \quad (2)$$

$$\left(\frac{Exports}{1{,}000{,}000}\right)_{ij,t} = \exp\left[\beta_1 \ln(GDP_{i,t} * GDP_{j,t}) + \beta_2 \ln(dist)_{ij} + \beta_3 contig_{ij} + \beta_4 comlang_{off_{ij}} + \beta_5 comcol_{ij} + \beta_6 \ln(REER)_{ij,t} + \beta_7 Misalign_{ij,t} + \beta_8 Float_{ij,t} * \ln(Volatility)_{ij,t} + \beta_9 cty_{ij,t}\right] + \varepsilon_{ij,t} \quad (3)$$

Comments

- Clarify bilateral exchange rate measure

Nicita (2013)

$ER_{Php/Thb}$

$$ERvol_{kjt} = std.dev.[\ln(ER_{kjt,m}) - \ln(ER_{kjt,m-1})]$$

where

$ER_{kjt,,m}$ = nominal exchange rate of currency *k* relative to currency *j* in year *t* and month *m*

Your paper

$ER_{Php/Thb} = ER_{Php/USD} - ER_{Thb/USD}$

$$ER_{ij,t} = ER_{i,t} - ER_{j,t} \quad (9)$$

$$Volatility_{ij,t} = std.dev[ER_{ij,m} - ER_{ij,m-1}] \quad (10)$$

$ER_{i,t}$ = nominal exchange rate of currency *i* relative to the USD

$ER_{j,t}$ = nominal exchange rate of currency *j* relative to the USD

Comments

- Expound why FTA effect could be insignificant
  - ✓Countries likely select endogenously into FTAs
  - ✓ Phase-in period
  - ✓ Purpose could be "deeper integration"
  - ✓Examine Baier and Bergstrand (2005), Baier and Bergstrand (2002, 2004b) and Magee (2003) on how endogeneity of FTAs in gravity equations is treated

- Use alternative measures of exchange rate volatility (e.g., GARCH)

- Perform RESET to confirm that the model is correctly specified

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Classification: GENERAL