Product Quality and Export Responses to Exchange Rate Movements

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Discussion Comments – Danielle Parks

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Overview

Questions:

1. Overall effects of exchange rate fluctuations on Taiwan's export prices and quantities?
2. Do high- and low-quality exports respond differently?
3. Does the export destination matter?

Data:

- Taiwan's seasonal bilateral exports, 4-digit industry, 1995–2019, top 70 destinations
- Worldwide bilateral trade (BACI) to construct revealed quality following Khandelwal et al. (2013) and Feenstra and Romalis (2014)
- Bilateral exchange rates, GDP, CPI

Approach:

- Regress export volume and price on exchange rate changes
- Interact with export quality; test heterogeneity by technology, quality-ladder length, and destination income

Main Findings

1. **Heterogeneous effects across destinations**
   - Advanced economies: export volumes and prices both fall (-0.451 and -0.127)
   - China–SEA: volume response effectively zero ($+0.077$, insignificant) but prices rise ($+0.265$)
2. **Export quality buffers the volume decline and amplifies prices**
   - 25th to 75th quality percentile reduces adverse volume effect by $\sim$40%
3. **Quality effects strongest where vertical differentiation matters most**
   - Strongest in high-tech, long quality-ladder industries, and advanced economies
   - Weakens or reverses in low-tech, short-ladder, and non-advanced settings

Major Comment 1: Testing the GVC Mechanism

The paper attributes the muted volume response in China and Southeast Asia to regional production networks.

Implication: If this mechanism is correct, it should be strongest for intermediate goods.

Potential exercise:
Use the BEC–HS concordance to estimate separate exchange-rate elasticities for

$$\Delta e_{j,t}^{TW} \times \mathbf{1}[\text{intermediate}] \quad \text{vs.} \quad \Delta e_{j,t}^{TW} \times \mathbf{1}[\text{final}]$$

Expected patterns:

- More muted response for intermediates exported to China–SEA
- Larger negative response for final goods

Major Comment 2: Identification of the Quality Gradient

$$\Delta e_{j,t}^{TW} \times \text{qual}_{h,j,t}^{TW}$$

Concern: The interaction requires quality to be exogenous to other drivers of pass-through. But export quality is correlated with:

- Productivity — more productive firms adjust markups rather than quantities (Berman et al., 2012)
- Imported-input intensity — reduces pass-through by offsetting cost and revenue effects (Amiti et al., 2014)
- Input quality — high-quality exports use high-quality inputs with lower pass-through (Bernini and Tomasi, 2015)

Potential exercises:

- Add TFP and imported-input intensity as interactions with Δe
- Show the quality interaction survives, or decompose "pure quality" vs. correlated channels

Additional Comments

- **Quality measure timing**
  - Why a 3-year moving average? Not standard in the literature
  - *Suggestion:* Show robustness to alternative windows (e.g., 1-year lag or 5-year average)
- **Presentation**
  - Tables 2 and 3 are never referenced in the text
  - Variables in equations are not defined when first introduced
  - Summary statistics on quality (Table 7) should appear before the quality regressions