Exchange Rate Disconnect and the Trade Balance

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Summary

What explains the exchange rate?

- Complete markets models fail at explaining FX movements
- Alternative view: intermediation ("UIP") shocks are key
  - FX movements dominated by financial shocks
  - Combined with low trade openness rationalizes many puzzles
  - Exchange rate disconnect [eg, Itskhoki & Mukhin 2021, 2024]

This paper:

- "UIP" shocks do not explain trade balance moments in the data
- Model: "trade shocks" do just as well with puzzles, but match trade data
- Quantification: trade shocks explain 50%, while UIP shocks only 20%

Comments and Suggestions

Very nice paper which adds nuance to the "**disconnect**" discussion!

Comments and suggestions:

1. Interpretation of analytical results

2. How far can we push the model quantitatively? Some potential limits

Key Model Ingredients

- Standard 2-country model with exogenous technology shocks Z_t, Z_t^*, except:
- Incomplete markets and intermediation frictions and shocks:

$$\phi_t = \exp\left(-\frac{\chi}{2} b_t^*\right), \quad \phi_t^* = \exp\left(-\frac{\chi}{2} b_t + \xi_t^{UIP}\right)$$

  - $\phi_t > 0, \phi_t^* > 0 \implies$ losses associated with cross-border holdings
  - Subject to "UIP" shocks ξ_t^{UIP}
- Time-variation in home-bias ω_t ("trade shocks"):

$$C_t^{\frac{1}{1+\rho}} = \omega_t^{\frac{\rho}{1+\rho}} C_{Ht}^{\frac{1}{1+\rho}} + (1-\omega_t)^{\frac{\rho}{1+\rho}} C_{Ft}^{\frac{1}{1+\rho}}, \quad \omega_t = \omega \exp\left(\xi_t^{trade}\right)$$

Key Model Dynamics

- $\Longrightarrow$ linearized dynamics:

$$E_t\Delta(z^*_{t+1} - z_{t+1}) - E_t\Delta\delta_{t+1} = \chi b_t + \xi_t^{UIP}$$
$$\beta b_t - b_{t-1} = \left(\frac{\omega}{1-\omega}(\xi_t^{trade} - \xi_t^{trade*}) - (z_t^* - z_t) + \varpi\delta_t\right)$$
$$c_t = z_t - (1-\omega)\delta_t, \quad c_t^* = z_t^* + (1-\omega)\delta_t$$

- Immediate implications:
  1. Consumption c_t, c_t^* fully determined by technology and terms of trade δ_t as in complete markets model
  2. Departures from complete markets benchmark $\iff \chi > 0$ and/or $\xi_t^{UIP} \neq 0$
  3. Trade shocks affect FX through NFA b_t

Comment: Interpretation

- $\implies$ intermediation frictions and asset imbalances are key
- But my view: intermediation frictions χ mix of ("exogenous") arbitrage frictions and endogenous risk prices
  - In this paper $\implies$ function of endogenous FX volatility $\sigma(\Delta\delta_t)$
  - More generally: function of endogenous variance-covariance of all traded assets (more on this later)
  - $\implies$ differences from IM21 somewhat subtle
- Reduced-form approach ok for quantification, but not sure about analytical results/comparative statics:
  1. Theorem 1: $\uparrow \chi \implies \uparrow \left|\frac{\partial \delta_t}{\partial \xi_t^{trade}}\right|, \downarrow \left|\frac{\partial \delta_t}{\partial \xi_t^{UIP}}\right|$
     with endogenous risk prices, no longer holds
  2. Autarkic limit $\omega \to 1 \implies \sigma(\Delta\delta_t) \to \infty$ due to scaling intermediation frictions by imports $b_t \equiv B_t / C_{Ft}$
  3. Policy implications: FX interventions still optimal as in IM23?

Comment: Quantitative Asset Pricing Implications

- Fama UIP regression:

$$E_t \Delta e_{t+1} = \gamma(i_t - i_t^*) + \epsilon_{t+1}$$

- Model: either UIP or trade shocks $\implies \hat{\gamma}^{FAMA} < 0$ ✓. Other implications?
  - R^2?
  - Controlling for NFA: $\implies \hat{\gamma}^{FAMA} \approx 1$?
  - Conditional on MP shocks: $\implies \hat{\gamma}^{FAMA} \approx 1$?
- Returning to limited arbitrage/endogenous risk pricing: from Gourinchas, Ray, Vayanos (2025):

$$\mu_t^{\mathcal{E}} + i_t^* - i_t \approx \chi \boldsymbol{\sigma}_t^{\mathcal{E}} \boldsymbol{\Lambda}_t, \quad \mu_{Ht}^{(\tau)} - i_t \approx \chi \boldsymbol{\sigma}_{Ht}^{(\tau)} \boldsymbol{\Lambda}_t, \quad \mu_{Ft}^{(\tau)*} - i_t^* \approx \chi \boldsymbol{\sigma}_{Ft}^{(\tau)*} \boldsymbol{\Lambda}_t$$

$$\boldsymbol{\Lambda}_t^\top = X_t^{FX} \boldsymbol{\sigma}_t^{\mathcal{E}} + \int_0^T X_{Ht}(\tau) \boldsymbol{\sigma}_{Ht}^{(\tau)} \, \mathrm{d}\tau + \int_0^T X_{Ft}(\tau) \boldsymbol{\sigma}_{Ft}^{(\tau)*} \, \mathrm{d}\tau$$

  - Our model: "connected" asset markets but low long-bond/FX correlation (see eg Chernov & Creal 2023) due to idiosyncratic FX/bond shocks
  - This paper $\implies$ trade shocks explain H/F term premia?

Concluding Remarks

- Very nice paper!
- Presents a more nuanced take on FX disconnect
  - Trade shocks, not intermediation shocks, are key
  - Nevertheless, financial frictions are the underlying source of FX "disconnect" puzzles
- Model would benefit from a more endogenous view of arbitrage frictions (my idiosyncratic tastes)
- Asset pricing implications: probably too much "connection" between trade flows and non-FX returns