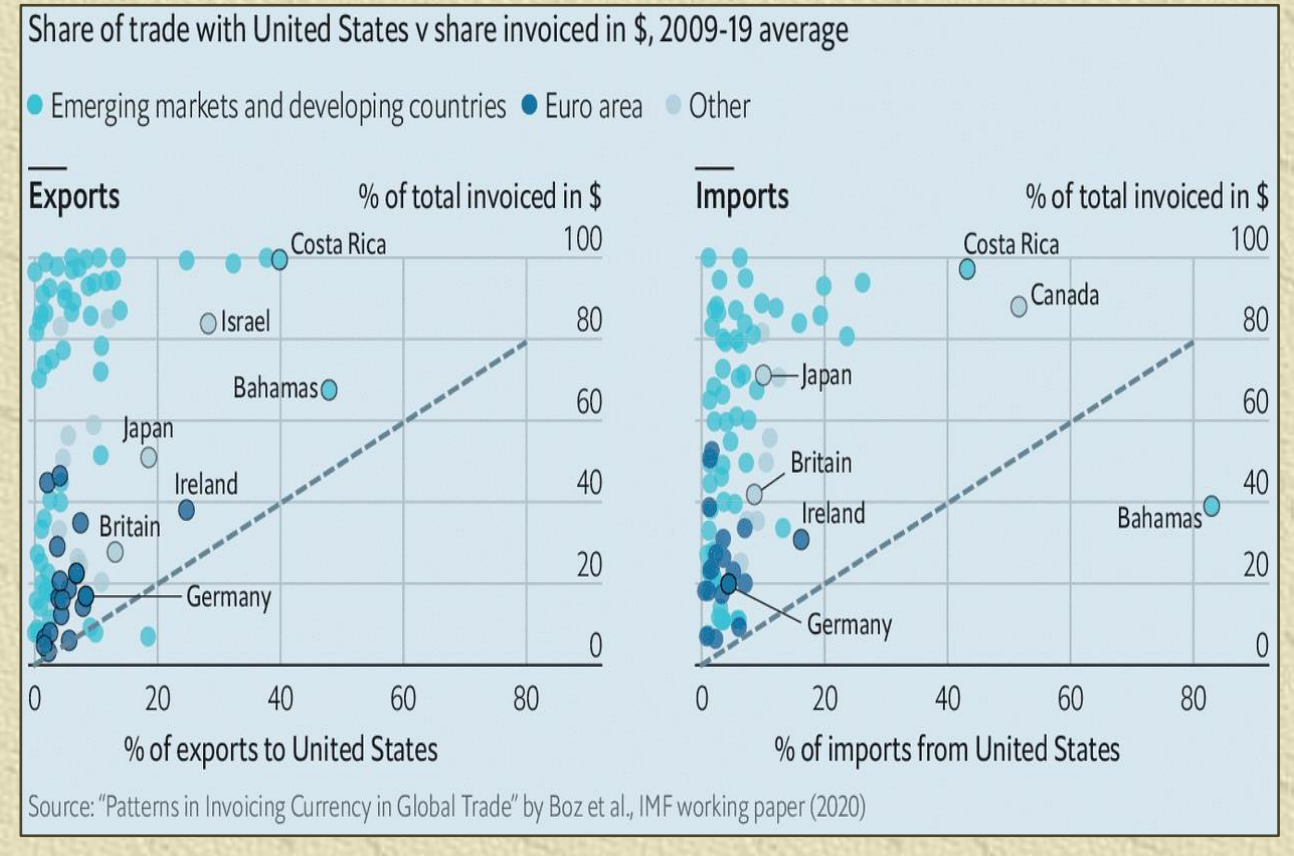
3. Modeling currency markets

3.5 Modeling changes in exchange rates on trade

- Summary
  - Model results
    - Explain E, P relationship from Δ value of local currency
    - What was the motive for decrease value of local currency?
    - How does E affect BOT (X earnings, import payments)?
    - What trade policy similarities does ΔE have?
  - Extensions
    - What non-policy actions can affect ΔE?
    - How can policymakers affect ΔE?
    - How can policymakers restrict foreign currency transactions? Use a simple currency market to illustrate how an “official rate” differs from the “market rate”.
    - What type of country imposes a multiple E regime (i.e., more than one exchange rate)? Why? Can it work?

Modeling currency markets, continued . . .

- Modeling results – theory vs practice



Source: *Economist*, "Greenback dominance: Buck up", 29 Aug 2020, p. 52-3.

Costa Rica: nearly 100% of its exports and imports are invoiced in $.

Only 40% of its trade is with the US ($-denom).

To affect bilateral trade with a non-US partner, the colón must depreciate against the dollar rather than the partner's currency.

For US $ depreciation:

A ↓$ value → ↑ X

A ↓$ has less effect on M if imports are invoiced in $.

For $ appreciation:

A ↓ value of fc → ↓ X, ↑ M

↑ $ value is felt hard

Modeling currency markets, continued . . .

3.6 Policy-induced changes in $E_{lc/fc}$

- Devaluation/depreciation
  - Motivation (policy objectives)
  - Marshall-Lerner condition
  - J-curve effect
  - Competitive devaluation/depreciation – useful tool?
    - Economic implications and consequences
    - Macroeconomic conditions for it to be effective

Modeling currency markets, continued . . .

- Evidence of effectiveness of ↑ E
  - Rule of thumb from research
    - A proper ↑E must be 10-30% and last at least a year before X ↑
    - IMF (1980-2014) study of 60 countries: 10% ↓ value of lc r.t. trading partners → 1.5% ↑ net (X-M)/GDP
    - Brazil 2015:
      - 22% ↓ lc value → 10% ↑ X vol
      - ↓ P_W commodities masked some of the GDP benefit
    - Japan
      - ↓ real E, no effect on X vol, mid-2010s

Modeling currency markets, continued . . .

- E ¥-$, relative prices and current-account balance

Prices and exchange rate

$E_{¥/\$} = P_{Jpn} / P_{US}$

↓ P_{Jpn}/P_{US} (wholesale price ratio)

↓ E or ↑ yen value

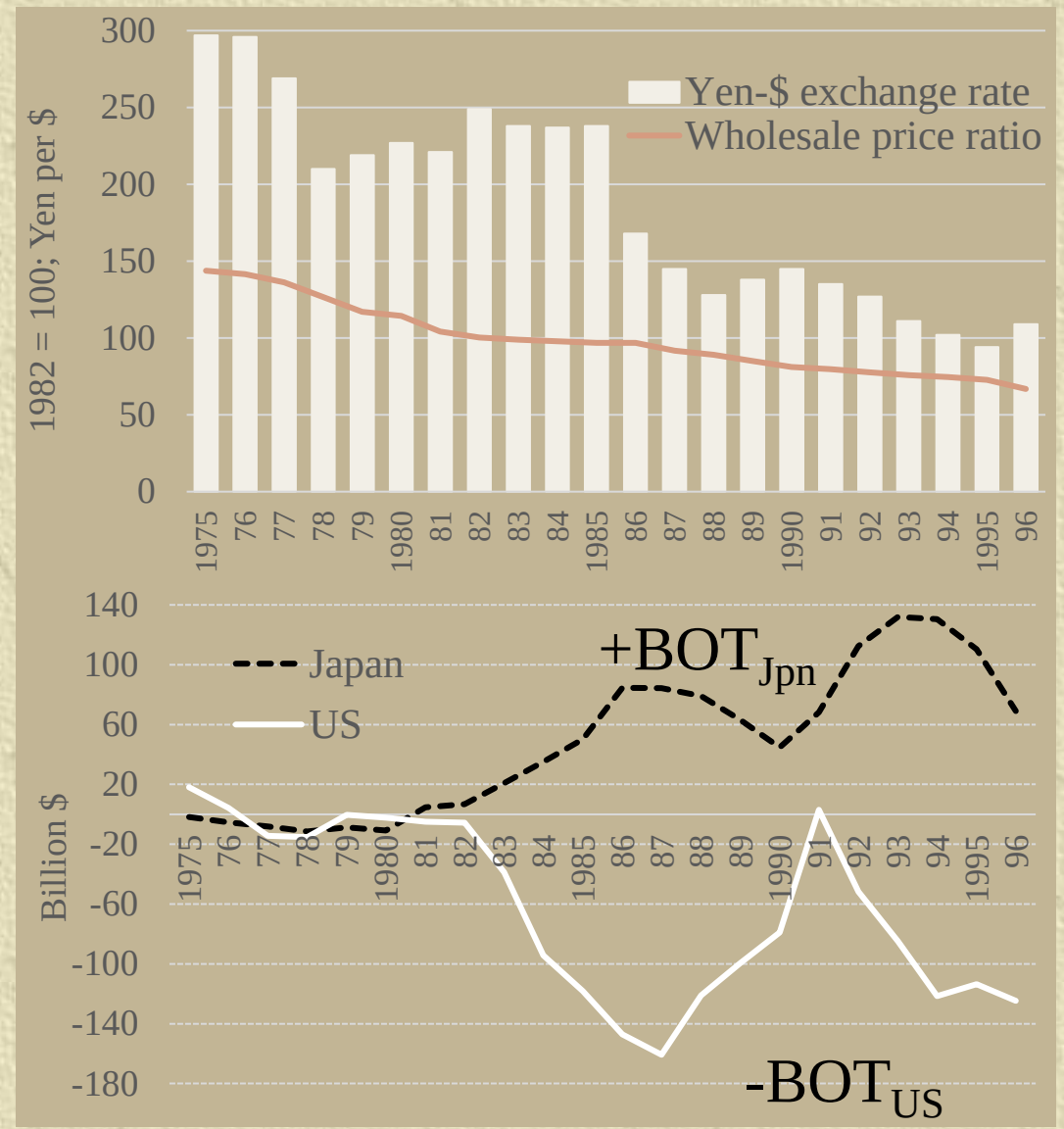
E-P relationship holds

Current-account balance

Despite ↑ value of yen, Japan maintains a CA surplus

Despite ↓ $ value, US CA deficit

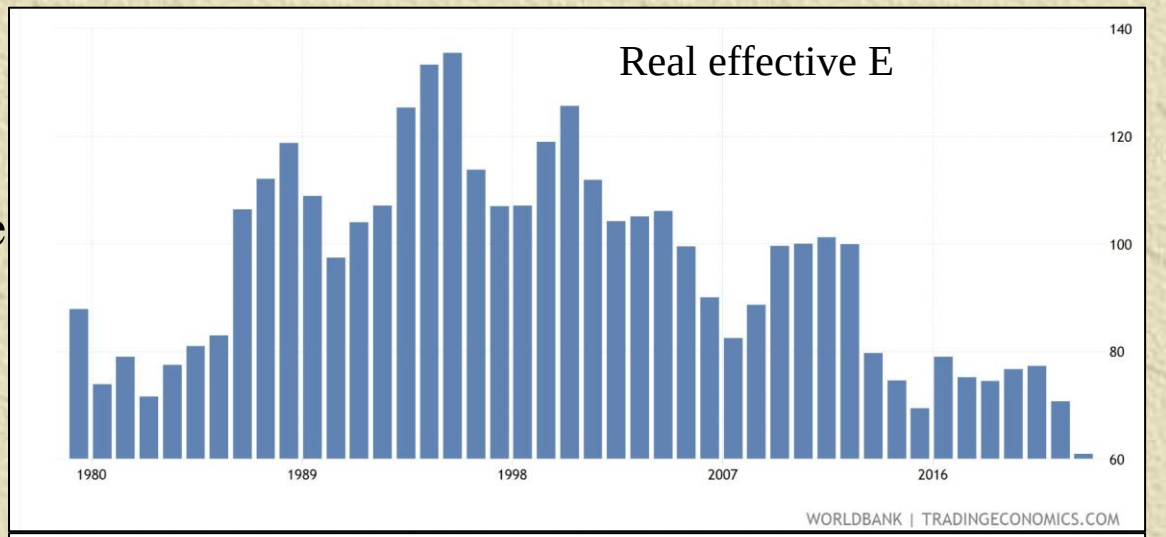
E did not correct US -BOT



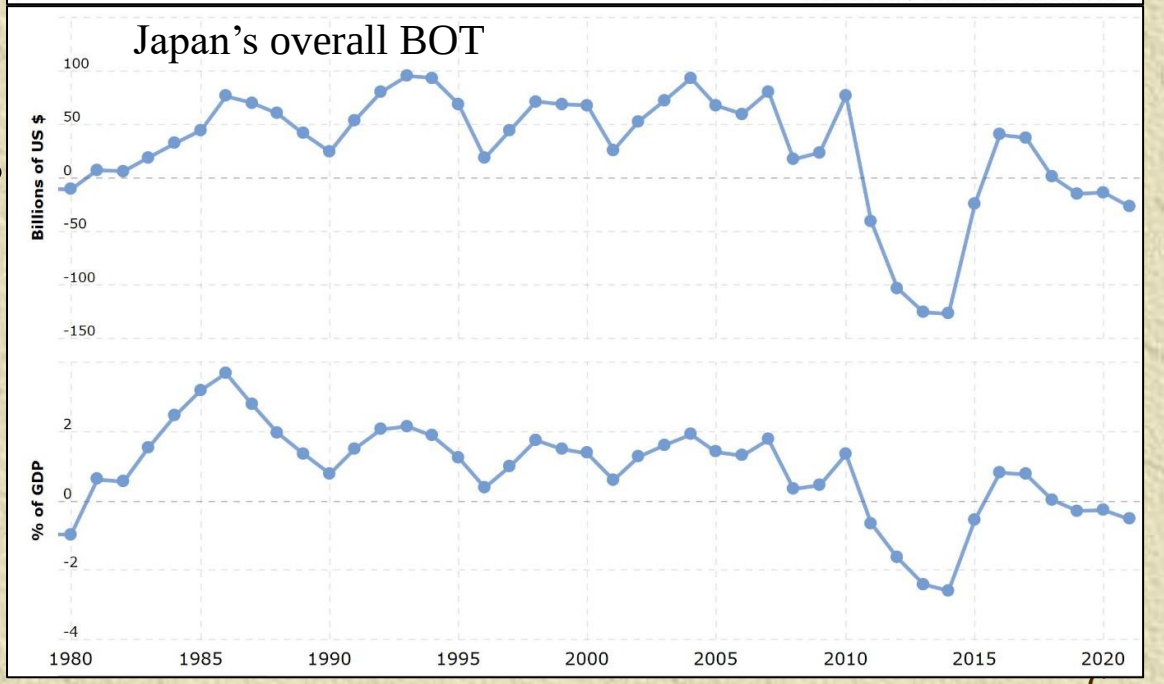
Source: *Economist*, "Talk is cheap (and so is the dollar)", 21 Sep 1996, p. 82.

Modeling currency markets, continued . . .

- Weighted avg yen divided by cost index (2000=100)
  - 1980-90s: ↑ yen value
  - 2000-on: ↓ yen value



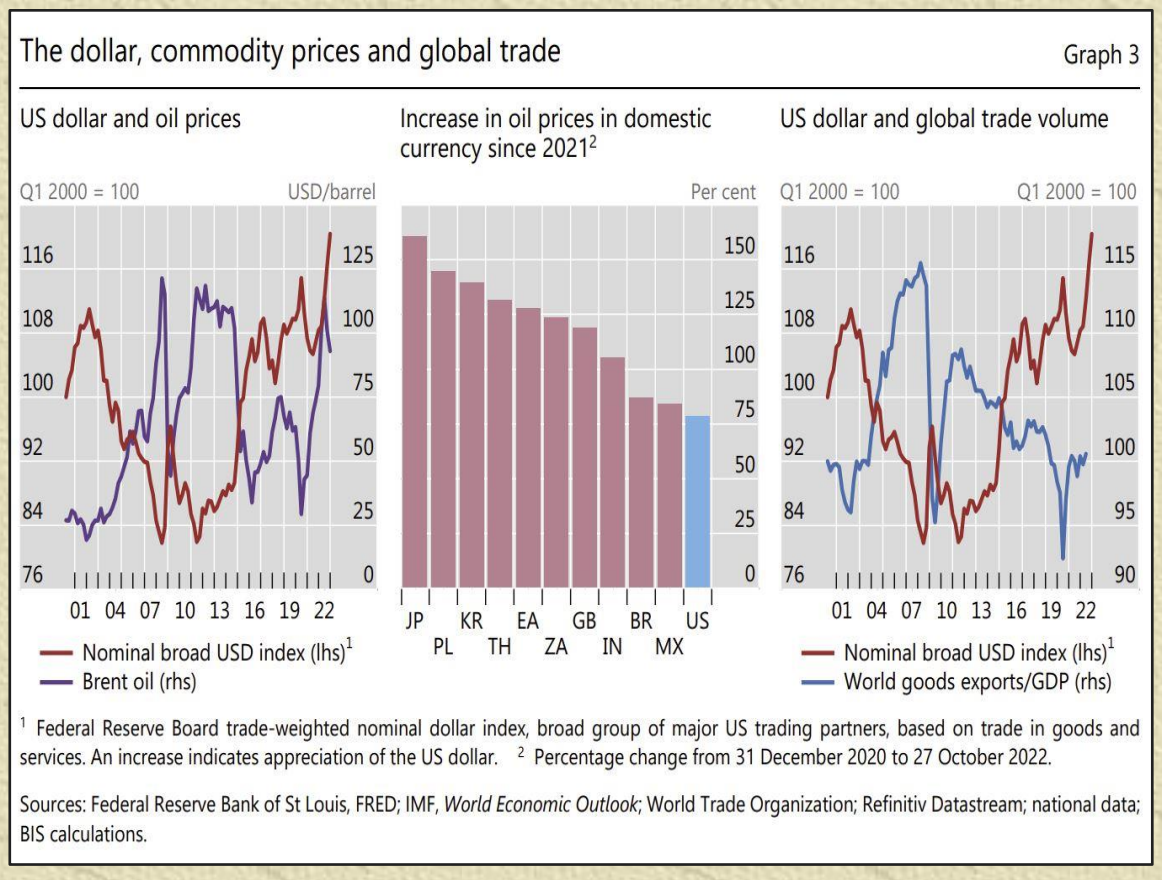
- Japan's overall BOT
  - 1980-2010: in $ terms ranges from 0-$100bn (0-2% GDP)
  - BOT situation mostly insensitive to ΔE in the short run

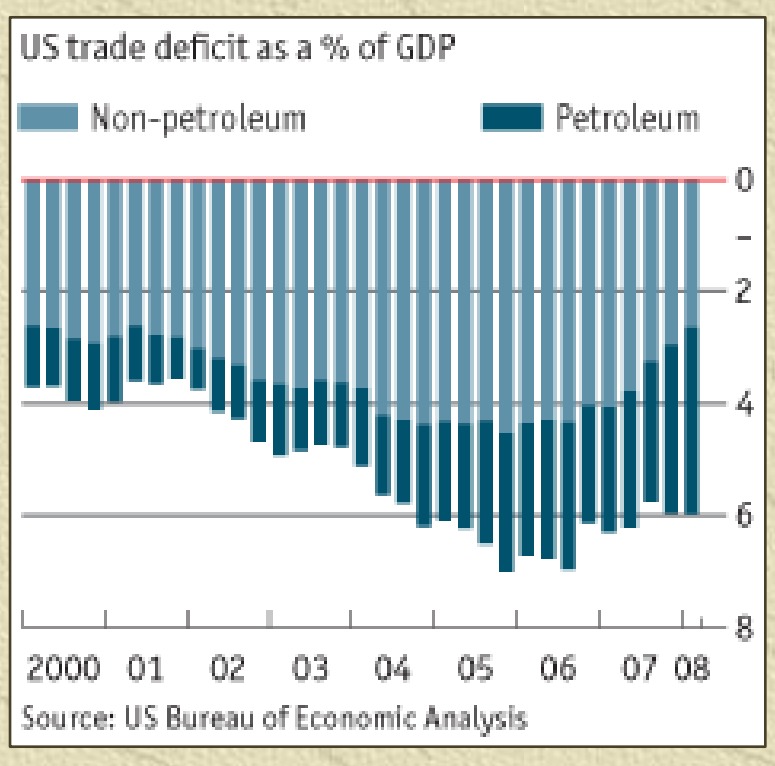


Bahmani-Oskooee, Harvey and Hegerty, *Jour. Of Economic Asymmetries*, 2017.

Modeling currency markets, continued . . .

- Oil P, $ value and oil dependence





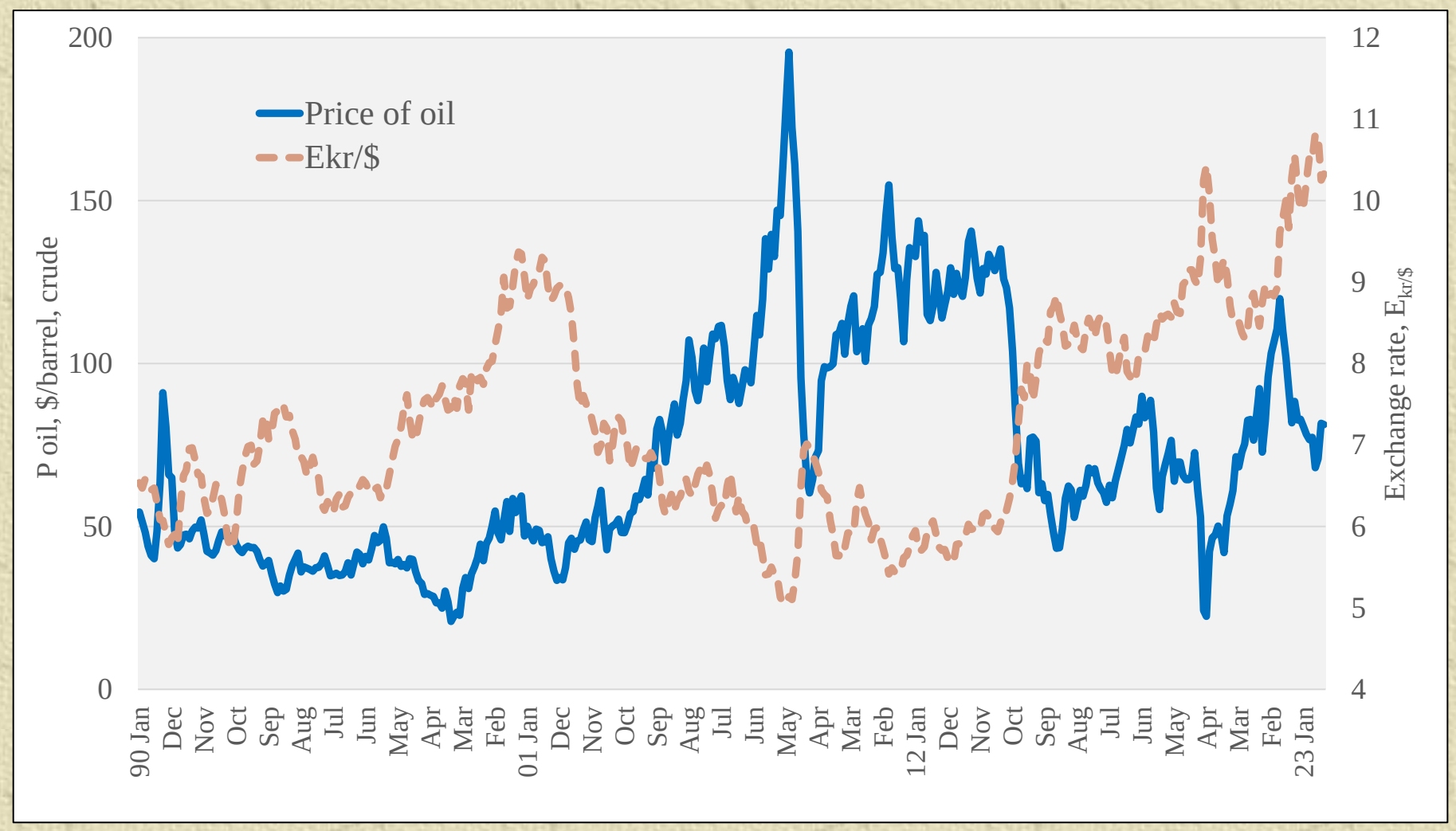
Until 2010: US was oil importer, ↑ P_{Oil} → ↓$ value (oil's share of –BOT increased).

2010s: US becomes net exporter, ↑ P_{Oil} → ↑ $ value

↑ P oil (denominated in $) and ↑ $ value → ↓ world trade volume

Modeling currency markets, continued . . .

- Norway: relation of price of crude oil and $E_{kr/\$}$
  - ↑P oil, ↓ E (kr value increases)

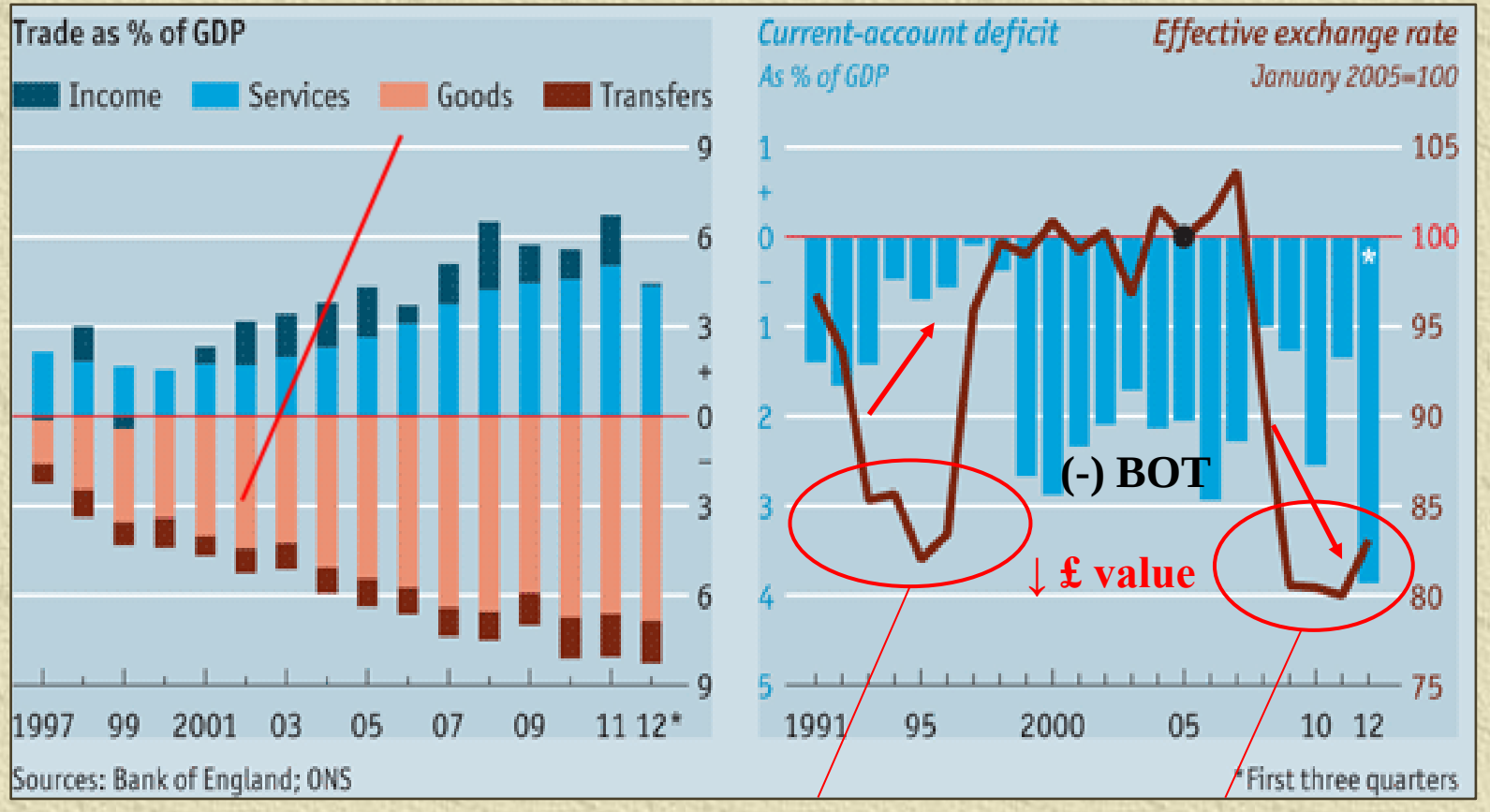


Modeling currency markets, continued . . .

- Response to ΔE depends on firms: effect of global supply chains
  - Case of UK: 1990s
  - Case of UK: 2010s

SMEs do not export much, about 20% of total. Large firms (70% of them) report to be unaffected by ΔE.

Foreign mkts reached thru FDI.



1990s, UK's exit from Exchange Rate Mechanism and £ depreciation almost eliminated -BOT

2010s, ↓ £ did not ↑ X or ↓ (-) BOT

Economist, "The export drought: Better out than in", 9 Feb 2013, p. 28-9.

Modeling currency markets, continued . . .

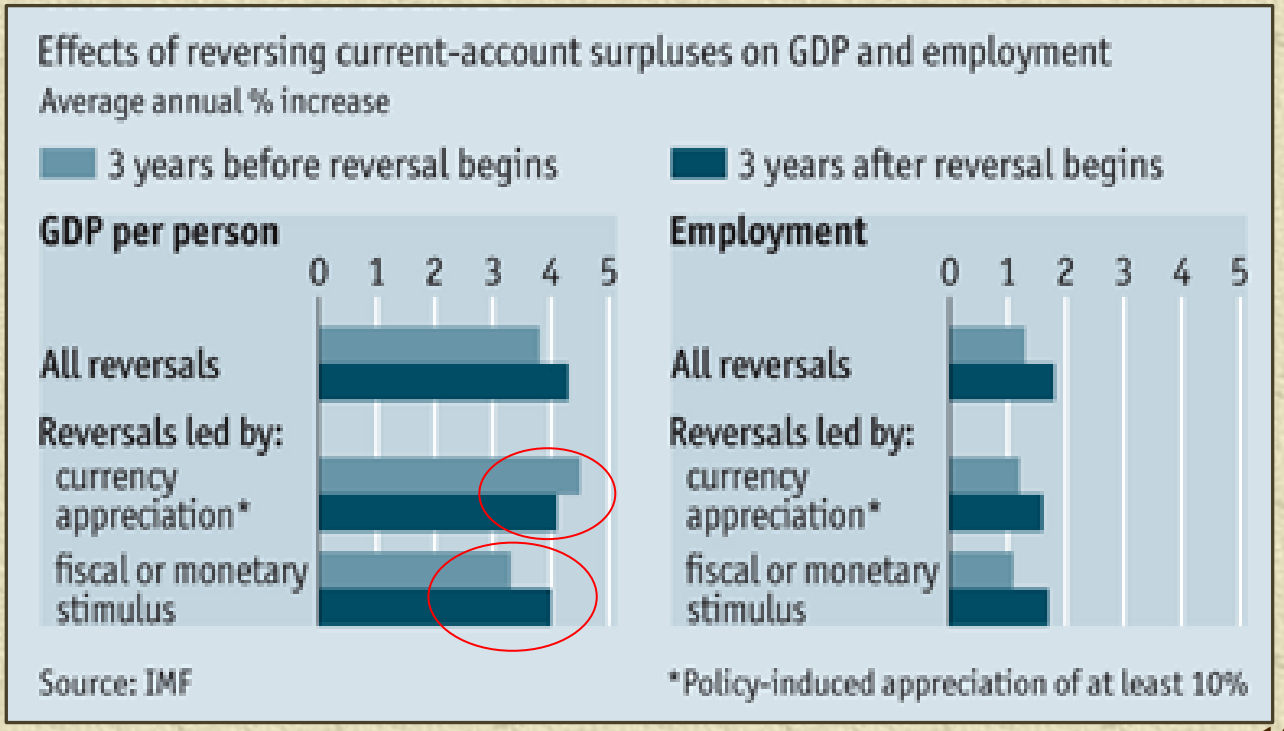
- Evidence of +BOT rebalancing: revaluation vs stimulus
  - IMF study of 28 instances of "policy-induced surplus reversal" thru either fiscal and monetary policy stimulus or ↓ E
  - Reversal → ↓ contribution of net X to GDP growth by 1.6% pts, mainly b/c ↑ M rather than ↓ X
  - ↓ (+) BOT did not affect growth much

Difference 3 yr before/after is minimal:

* Growth from C, I offset loss from ↓ net X

* Economic growth came from different sectors (foreign demand replaced by local demand)

* Less L in X-sectors, more in sectors for domestic C (services)



Economist, "Economics focus: surplus ca change", 22 Apr 2010