Currency and Trade Wars

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Currency war a theme since the global financial crisis: Brazil, the US, China, Japan...

Currency wars involve different policy instruments:

- conventional and unconventional monetary policy
- foreign exchange interventions
- capital controls

Trade war a new theme since the US started to raise tariffs
In 2018 the US imposed new tariffs of 6.5% on average on its imports from China, while the renminbi depreciated by 5.5% against the dollar.

This reflected more the strength of the dollar than the weakness of the renminbi.

- the dollar appreciated by 7.9% on an effective basis (Fed Broad index).

It has been argued that tariffs would be made ineffective by offsetting currency movements (Stiglitz, 2016).

However the dollar appreciation is unlikely to be the result of tariffs.

- Jeanne (2019a), based on a dynamic new Keynesian model with Taylor rules.
Estimated dollar appreciation caused by various trade battles in 2018 (Jeanne, 2019a)

<table>
<thead>
<tr>
<th>Solar panels &amp; washing machines</th>
<th>Steel &amp; aluminum</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff, $\tau$</td>
<td>30%</td>
<td>18.4%</td>
</tr>
<tr>
<td>Share of imports, $\phi$</td>
<td>0.4%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Resulting dollar appreciation</td>
<td>0.03% [0.01,0.06]</td>
<td>0.08% [0.04,0.17]</td>
</tr>
</tbody>
</table>

- Li (2019) finds that the renminbi is significantly affected by US tariff news
  - but the Chinese authorities seem to have resisted depreciation in 2018
- US tariffs have “worked:” sectoral evidence of high pass-through of tariffs into US prices and of impact on quantities (Fajgelbaum et al, 2019; Amiti et al, 2019)
  - these papers find small welfare losses for the US from the tariffs
  - unless demand effects are added (Freund et al, 2018)
Obstfeld and Rogoff’s New Open Economy Macroeconomics took a relatively narrow view of monetary policy (Taylor Rule).

Tariffs had largely disappeared from international macroeconomics.

We need frameworks putting together exchange rate policy and trade policy...

...in order to revisit old questions related to international spillovers, and the potential benefits of international policy coordination.

The rest of this talk based on Jeanne (2019b), ”Currency Wars, Trade Wars and Global Demand”
Related literature


Theoretical framework

- Small open economies $j$ populated by optimizing representative consumers with Armington preferences (Gali-Monacelli)
- Downward nominal wage rigidity a la Schmitt-Grohé and Uribe (2017)
- Countries have access to a range of policy instruments:
  - interest rate (subject to ZLB) and inflation target
  - taxes on capital flows (or foreign exchange interventions)
  - taxes on imports and on exports
- Time variation in countries’ discount factors $\beta_j$ to generate fluctuations in demand
Each economy $j \in [0, 1]$ is populated by representative household with utility

$$U_t = u(C_t) + \beta_t U_{t+1}$$

where $u(C) = C^{1-1/\sigma} / (1 - 1/\sigma)$

Consumption is the Cobb-Douglas index

$$C = \left( \frac{C_H}{\alpha_H} \right)^{\alpha_H} \left( \frac{C_F}{\alpha_F} \right)^{\alpha_F}$$

where

$$C_F = \left[ \int_0^1 C_k^{(\gamma-1)/\gamma} dk \right]^{\gamma/(\gamma-1)} \quad \gamma > 1$$

Production of home good

$$Y = L$$


$$\pi_t = \frac{W_t}{W_{t-1}} - 1 \geq \pi$$
Policy instruments

1) Interest rate (or inflation target)
2) Tax on capital flows (or FXI)
3) Tariff on imports
4) Export subsidy

Outcomes

Exchange rate

Imports

Exports

Olivier Jeanne (JHU)  Currency and Trade Wars
Currency Wars, Trade Wars and Global Demand

- Low demand (high $\beta$) may lead to unemployment because of nominal wage rigidity

- Countries can reduce unemployment by:
  - lowering the nominal interest rate (or increasing the inflation target)
  - taxing capital inflows (or accumulating reserves)
  - taxing imports or subsidizing exports

- Countries may have to use trade or capital flow taxes if they hit the ZLB

- Liquidity traps are "contagious"

- I solve for the Nash equilibrium between national social planners without commitment
Are tariffs equivalent to currency manipulation?

- An old question (Keynes, 1931; Meade, 1955) with some new literature on fiscal devaluations (Farhi et al, 2014)

Answer: yes, under restrictive conditions

- Countries must have access to all instruments, in particular taxes on both imports and exports, and must change the exchange rate with capital controls (or FXI), not monetary policy

But in general: No, the Nash equilibrium depends on the policy instruments
Welfare impact of different policies

<table>
<thead>
<tr>
<th></th>
<th>Monetary depreciation</th>
<th>Financial depreciation (cap.controls/FXI)</th>
<th>Tariff on Imports</th>
<th>Subsidy on Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ROW</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Global</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>+</td>
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</table>

- A global monetary stimulus stimulates global demand
- A global tax on imports reduces global consumption but a global subsidy on exports stimulates global consumption
Nash equilibrium in tariffs can be very costly when there is insufficient global demand.

**Figure:** Unemployment rate in a dynamic trade war
In symmetric case, international coordination is justified to avoid tariff war, not so much to avoid war in other instruments.

**Figure:** Welfare impact of uncoordinated use of various instruments.
Currency wars and trade wars are loose concepts: the policy instruments matter

- the worst instrument, from a multilateral perspective, is tariff on imports

Impact of policies on demand matters for welfare analysis

- especially in environment with low natural interest rate (secular stagnation)
- this could involve the impact of uncertainty caused by trade wars (not considered here)

Need for richer macro-trade models to study international policy spillovers