

# 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)

	Solar panels & washing machines	Steel & aluminum	China
Tariff, $\tau$	30%	18.4%	13%
Share of imports, $\phi$	0.4%	1.7%	8.6%
Resulting dollar appreciation	0.03% [0.01,0.06]	0.08% [0.04,0.17]	0.31% [0.13,0.59]

- 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

- international monetary coordination: Obstfeld and Rogoff (2002), Benigno and Benigno (2006), Canzoneri, Cumby and Diba (2005) etc.
- global liquidity traps: Eggertsson et al (2016), Caballero, Farhi and Gourinchas (2015), Fujiwara et al. (2013), Devereux and Yetman (2014)
- impact of tariffs in New Keynesian models: Barbiero et al (2017), Erceg, Prestipino and Raffo (2017), Lindé and Pescatori (2017)
- impact of the 2018 tariff war: Fajgelbaum et al (2019), Amiti et al (2019), Freund et al (2018), Furceri et al (2018)

# Currency Wars, Trade Wars and Global Demand

## 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

# Currency Wars, Trade Wars and Global 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

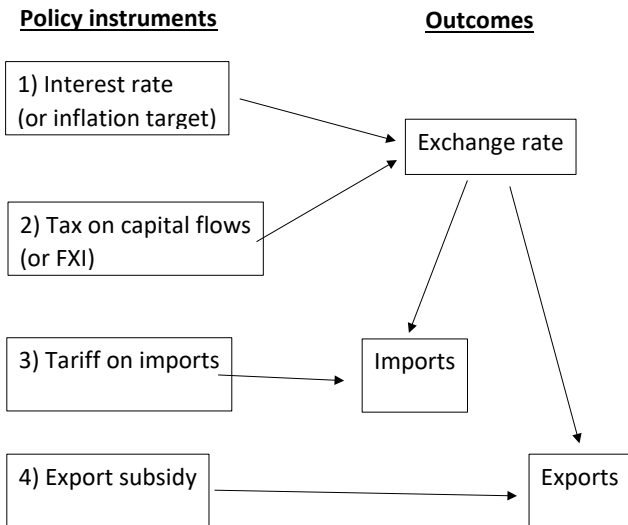
$$Y = L$$

- Downward nominal stickiness in wage like in Schmitt-Grohé and Uribe (2016) or Eggertsson et al (2016)

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



# Currency Wars, Trade Wars and Global Demand



# 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

# Currency Wars, Trade Wars and Global Demand

- 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

# Currency Wars, Trade Wars and Global Demand

## Welfare impact of different policies

	Monetary depreciation	Financial depreciation (cap.controls/FXI)	Tariff on Imports	Subsidy on Exports
Home	+	+	+	+
ROW	-	-	-	-
Global	+	0	-	+

- A global monetary stimulus stimulates global demand
- A global tax on imports reduces global consumption but a global subsidy on exports stimulates global consumption

# Currency Wars, Trade Wars and Global Demand

Nash equilibrium in tariffs can be very costly when there is insufficient global demand

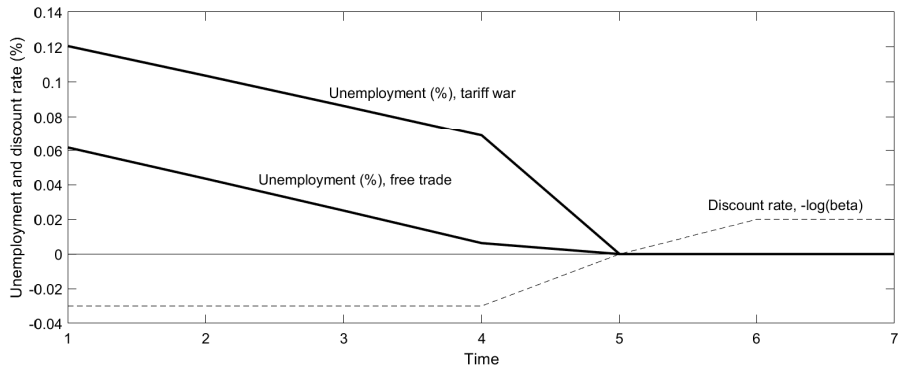


Figure: Unemployment rate in a dynamic trade war

# Currency Wars, Trade Wars and Global Demand

In symmetric case, international coordination is justified to avoid tariff war, not so much to avoid war in other instruments

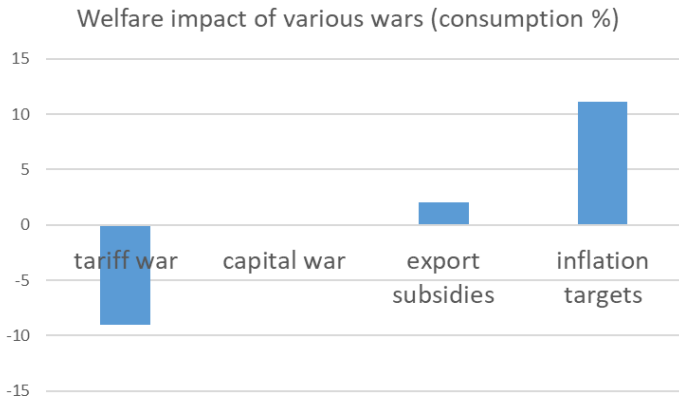


Figure: Welfare impact of uncoordinated use of various instruments

## Conclusions

- 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