Discussion of *"On Wars, Sanctions and Sovereign Default"* by Javier Bianchi and César Sosa-Padilla

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Roadmap

1. Russia's circumstances at the beginning of the war (Data)

2. Challenges to standard quantitative theory
   - Implications for reserves accumulation
   - Implications for debt sustainability

3. An alternative approach to sanctions delays
   - Geopolitical externalities
   - The value of war as private information
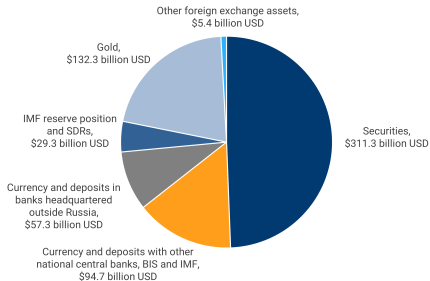   - Can you stop the war?

Russia's external position
September 2021

2021 GDP: 1,779 Billion USD

Milesi-Ferretti, 2022. *"Russia's external position: Does financial autarky protect against sanctions?"* Brookings

Reserves composition

Foreign exchange reserves
instrument composition, January 2022

Other foreign exchange assets, $5.4 billion USD
Gold, $132.3 billion USD
IMF reserve position and SDRs, $29.3 billion USD
Currency and deposits in banks headquartered outside Russia, $57.3 billion USD
Currency and deposits with other national central banks, BIS and IMF, $94.7 billion USD
Securities, $311.3 billion USD

Source: IMF, International Reserves and Foreign Currency Liquidity

Russia's foreign exchange reserves:
Currency composition
June 2021

Percent of Total

Euro U.S. Dollar Ren Min Bi (Yuan) Pound Sterling Yen Canadian Dollar Australian Dollar Singapore Dollar Gold
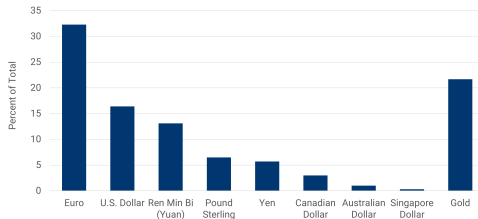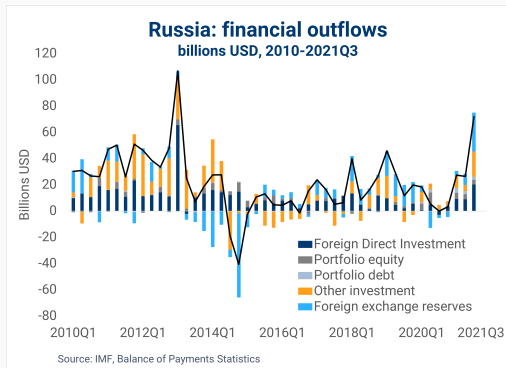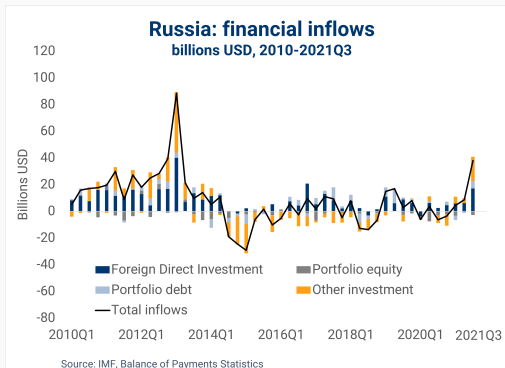
Source: Central Bank of Russia

Milesi-Ferretti, 2022. *"Russia's external position: Does financial autarky protect against sanctions?"* Brookings

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How much was frozen?
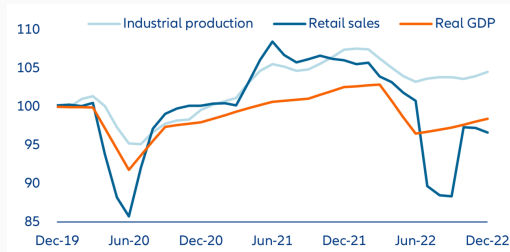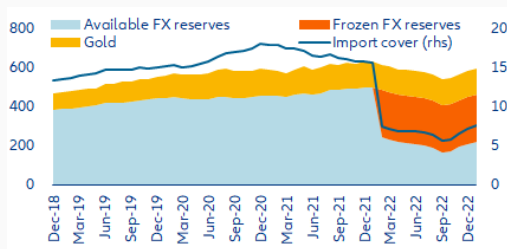
Allianz SE, 2023. *"Russia's war economy"*

Milesi-Ferretti, 2022. *"Russia's external position: Does financial autarky protect against sanctions?"* Brookings

Challenges to standard quantitative theory

Why do indebted sovereigns accumulate reserves (*and* debt)?

Bianchi et al., 2018, *"International Reserves and Rollover Risk"*, AER

- Borrowing to buy reserves: reallocates resources across states next period, conditional on not defaulting
- Sovereign keeps reserves in default: self-insurance, consumption smoothing during market exclusion

Devereux and Wu, 2022, *"Foreign Reserves Management and Original Sin"*

- Exchange rate management & mitigating original sin
- Use reserves to learn against global cycle, to enhance LC debt demand

Which costs support defaultable debt in equilibrium?

Reference approach (Arellano 2008, Chatterjee and Eyigungor 2012)

- endowment or productivity loss
- convex $\Rightarrow$ default in "bad times"

Microfoundations?

Mendoza and Yue, 2012, *"A General Equilibrium Model of..."*, QJE

- imported intermediate goods (w/ less productive domestic substitutes)
- subject to working capital constraint
- sovereign and private sector excluded from fin markets in default

An alternative approach to delays

An alternative geopolitical externality model

Flow utility to Russia:

$$u\left(c^R(s)\right) + w_R \cdot \mathbb{1}_{\text{war}}, \qquad \frac{\partial c^R(s)}{\partial s} \leq 0$$

Flow utility to US:

$$u\left(c^U(s)\right) - w_U \cdot \mathbb{1}_{\text{war}}, \qquad \frac{\partial c^U(s)}{\partial s} \leq 0$$

with

- $s \in [0, 1]$: sanctions intensity, US choice,
- w_R: benefit of continued war to Russia, private info to Russia,
- w_U: cost of continued war to the US, public information,
- $\mathbb{1}_{\text{war}} = 1$ if the war continues, 0 if it ends.

Stopping the war?

Russia stops the war if $s \geq s^*$, defined by

$$u\left(c^R\left(s^*\right)\right) + w_R = u\left(c^R\left(0\right)\right)$$

US can credibly threaten sanctions level s if

$$u\left(c^U\left(0\right)\right) - w_U \leq u\left(c^U\left(s\right)\right)$$

(For simplicity, assume w_U and $c^U(s)$ are such that US prefers to end the war at any feasible s.)

Sanctions delay as bargaining with private information

Finding s^*, the smallest s which ends the war, at minimum cost to US?

w^R is private information to Russia. Assume known β^R and β^U.

Start with a low s and increase it over time, such that

- Russia has no incentive to delay stopping the war

$$u\left(c^R\left(s_t\right)\right) + w_R + \beta^R V^R_{\text{war}}\left(s_{t+1}\right) \leq u\left(c^R\left(0\right)\right) + \beta^R V^R_{\text{no war}} \quad \text{for all } s_t \geq s^*$$

- the US is willing to incur associated costs
- at the margin, increase s_0? (IC s_{t+1}/s_t)
    - Additional cost from $c^U\left(s_t\right)$ while war continues,
    - Cross s^* faster.

Relevant literature

Costly equilibrium delays as screening in bargaining (uninformed party proposes)

- Fudenberg et al., 1985. *"Infinite-horizon models of bargaining with one-sided incomplete information"*. In: Roth (Ed), Game-Theoretic Models of Bargaining

Application to sovereign default renegotiation

- Bai and Zhang, 2012. *"Duration of sovereign debt renegotiation"*, JIE

The view from Poli Sci

- Powell, 2002. *"Bargaining Theory and International Conflict"*, ARPS