

One Ring to Rule Them All? New Evidence on World Cycles

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Link to paper, online dataset and data appendix

Limits of existing research

Common wisdom:

- ▶ strong global cycles, real and financial, driven by the US hegemon (Rey, 2015, etc.)
- ▶ their strength has increased over time with trade & financial globalization (Kose et al. 2008 etc.)

Some (non-trivial) caveats:

- ▶ global factors highly dependent on a few observations/global shocks (1973, 2008)
- ▶ selective view of the world: focus on advanced economies (not EMs), assets prices and short sample (mid-90's)
- ▶ very few systematic comparisons before vs. after globalization

This paper: What happens with more and better data?

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This paper: What happens with more and better data?

Better data, more robust results

New quarterly macro-financial dataset, 1950s-2019

- ▶ real GDP (37 countries)
- ▶ credit = "claims on the private sector from domestic banks" (45 countries)
- ▶ consumer prices (48 countries)
- ▶ stock prices (26 countries)
- ▶ sovereign bond yields (18 countries)

Historical data collected from IMF paper volumes (*International Financial Statistics*) and matched with official online data (See [paper/Appendix](#)).

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Why better data?

- ▶ Frequency: quarterly statistics → estimate a global factor (à la Kose et al. 2003) over sub-periods → isolate global shocks (1973-1979; 2008-2009). Kose et al. (2008) did it from 1960 for GDP of G7 only.
- ▶ Coverage: start in the 1950s + EMs → important for comparison between low/high globalization
- ▶ Consistency/quality: (i) solves some problems with existing quarterly datasets (breaks, linear interpolation) (ii) consistent with annual historical data (e.g Jorda et al, 2017)

Three key results

World cycles exist (and are "driven" by US Shocks), but...

1. In normal times, their strength is very low for GDP and Credit, especially in EMs (10%). Previous results inflated by AEs, asset prices, global shocks.
2. Globalization has created a disconnect. Higher synchronization of prices (good and assets) but stable for quantities: credit and GDP → 1950-1971 (Bretton Woods) = 1985-2006 ("Globalization") = post-2009.
3. Trade and Financial Integration have opposite impact on world output synchronization. In normal times, trade openness ↑ synchro with the world, but financial openness ↓. Effect reversed for financial open. only during the GFC (2008-2009).

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Implications for theory and policy

Policy

- ▶ De-globalization (i.e. comeback to Bretton Woods) \Rightarrow low output synchronization
- ▶ global financial cycle \neq global credit cycle. Different policy instruments
- ▶ problem for central banks: high synchro. of consumer prices

Theory

- ▶ why such a disconnect between prices and quantities?
- ▶ financial integration has an asymmetric effect on GDP synchronization (Kalemli-Ozcan et al. 2003, Acemoglu et al. 2015, Castiglionesi et al. 2019)

Data methodology

3 steps

1. Collect quarterly data – available online from official sources - for each variable/country
2. Find its IFS “twin” in the archives and extend backwards (making sure definitions match)
 - ▶ Easy for Prices (CPI, Share Price and Bond yields)
 - ▶ Less for Credit (breaks in series):
 - ▶ Quarterly GDP: Recreate a “synthetic” one by combining (i) Annual GDP (ii) Quarterly Historical Industrial Production (Chow-Lin, 1971). → usual method used by IMF etc. for emerging countries
3. Quality Control:
 - ▶ Compare with databases available at annual frequency (e.g. Jorda et al, 2017) - when possible
 - ▶ Check that the synthetic method for quarterly GDP is reliable by comparing to official data

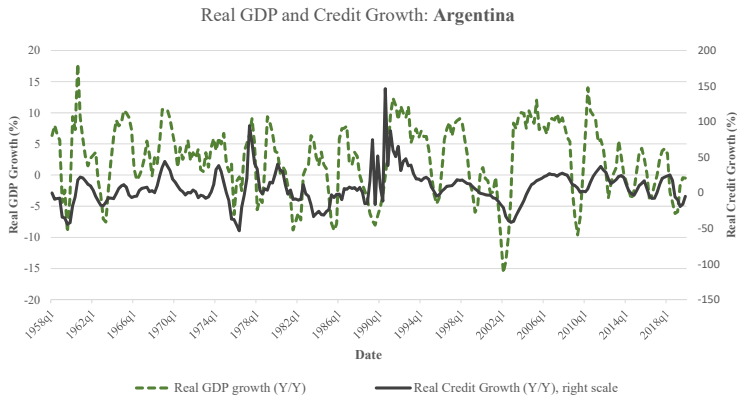
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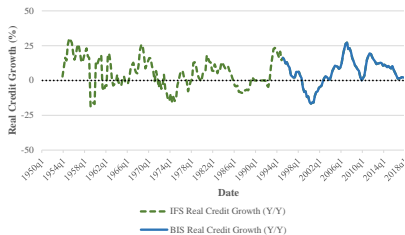
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Very large gains in EMs for GDP and Prices - Examples

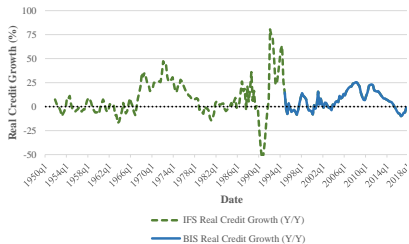
Argentina : BIS nominal credit data available since 1958, but no official quarterly CPI (deflator) or GDP before 2004 → we expand everything to 1958Q1. Similar for many other EMs (Chile, India...)



Very large gains in EMs - Credit data.



Credit growth - Colombia



Credit growth - Brazil

Modelling the global factor

- ▶ Standard factor estimation (Kose et al. 2003, Miranda-Agrippino and Rey 2019). Focus on a single common factor, estimated through ML as in Stock and Watson (1989, 1991):

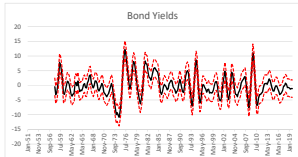
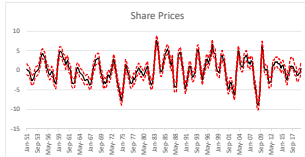
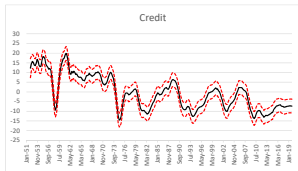
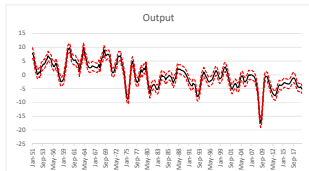
$$Y_{i,t} = P_i F_t + u_{i,t}$$

$$F_t = A_1 F_{t-1} + A_2 F_{t-2} + \dots + v_t$$

$$u_{i,t} = C_1 u_{i,t-1} + C_2 u_{i,t-2} + \dots + e_{i,t}$$

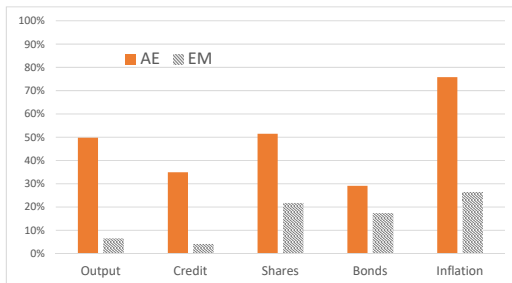
- ▶ $Y_{i,t}$ = variable to be explained (e.g. output or credit growth) in country i in quarter t
- ▶ F_t is the world factor at time t
- ▶ Can be estimated over sub-periods.
- ▶ Variance decomposition: whether a country is synchronized by the rest of the world (average or by country)

Precisely estimated world cycles



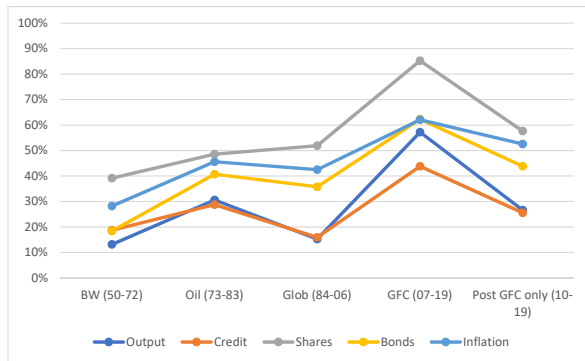
World Cycles - Variance Decompositions - Full Sample

Strong global factor - measured by the share of domestic variable variance explained by the global factor - in the median country.
But much lower for quantities and EMs.

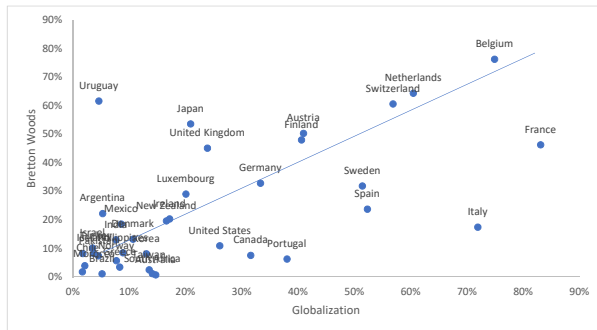


World Cycles over time: the quantity vs. price disconnect

- ▶ For output and credit, high variance driven by 1973 and 2008-2009 shocks. Otherwise stable before and after globalization
- ▶ For CPI and asset prices, synchro. increased with globalization
- ▶ Story similar for AEs and EMs (see roll. wind. in the paper).



Domestic output synchronization with the World: Then and Now



Share of variance in domestic output explained by the world cycle during the globalization period (1984-2006) against its counterpart during Bretton Woods (1950-1973)

Output Synchro. w/ rest of the world - 2 opposite drivers

$$\theta_{i,t}^W = \beta_1 \cdot Trade_{i,t} + \beta_2 \cdot Finance_{i,t} + \beta_3 \cdot FXFlex_{i,t} + \alpha_i + \delta_t + \epsilon_{i,t}$$

	(1)	(2)	(3)
Trade Openness	0.13**	0.19***	0.153***
Financial Openness	-.07**	-.09**	-.07**
FX Flexibility	0.01	0.01	0.007
OIL	0.08**	0.08**	0.119
GFC	0.40***	0.07	0.371***
Interactions			
GFC x Financial Openness		0.06**	
GFC x Trade Openness		0.001	
Oil Shock x Financial Openness			0.01
Oil Shock x Trade Openness			-.002*
Country FE	Yes	Yes	Yes
N	144	144	144
R - squared	0.557	0.569	0.530

Financial open. usually associated with lower synchro. Reversed only during GFC. Trade openness always associated with higher synchro.

Conclusion

Many of the previous results on global cycles driven by sample selection issues. The new dataset expands possibilities for researchers and highlights new findings, important for both policy and theory.

Conclusion

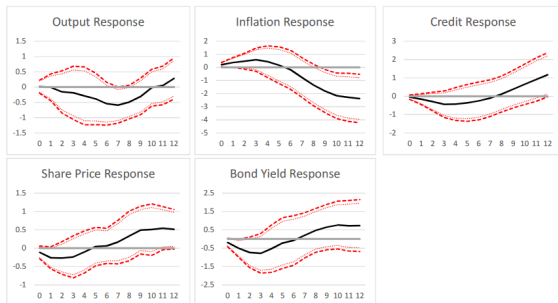
Our results generally qualify the impact of global financial conditions on EMs:

- ▶ Outside periods of global shocks, GDP and credit minimally affected by global dynamics → suggests significant policy autonomy.
- ▶ Result in line with Cerutti et al. (2017) but focus on credit. Strong cycle in asset prices as in Miranda-Agrippino and Rey (2019).
- ▶ Connections between US policy and EMs credit cycles through dollar loans (Brauning and Ivashina (2018)). But these loans may be small.
- ▶ Still important domestic institutions, credit and capital controls that disconnect credit from capital flows and asset prices. Domestic banks: 80-90% of credit to the Private non-financial sector in EMs

Additional slides. US MP shocks

- ▶ Impact of an exogenous US monetary policy shock on global factors. (Local projections)

Impulse: US Monetary Policy



Additional slides

