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COMMENTS ON "A PREFERRED-HABITAT MODEL OF TERM PREMIA, EXCHANGE RATES, AND MONETARY POLICY" BY P.-O. GOURINCHAS, W. RAY AND D. VAYANOS.

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ADVANCES IN MONETARY ECONOMICS CONFERENCE
INTERNATIONAL MONETARY FUND
13 September 2022

DG ECONOMICS, STATISTICS AND RESEARCH

OUTLINE

- Summary
- Role of monetary policy
- Comments on empirical results on QE transmission
  - to the home yield curve,
  - to the exchange rate,
  - to the foreign yield curve.

SUMMARY

This paper **extends the Vayanos-Vila (Econometrica, 2021) preferred habitat framework to the international macro arena**: to bond markets of different countries and currency markets.

In particular, the **key role of global arbitrageurs** in the model makes it a **natural framework to explain international transmission of conventional and unconventional monetary policy, as arbitrageurs trade globally over all assets.**

The paper derives the properties of a two-country model in which:

- currency (€/$ ER), home (US) and foreign (Eurozone/Germany) bond markets are populated by different investor clienteles (preferred-habitat agents),
- financial segmentation is partly overcome by global arbitrageurs (hedge funds, global banks) which trade globally over all assets and,
- global arbitrageurs are risk averse, so that the yield curve slope not only incorporates expected short rates but also a term premium to compensate for duration risk.

The equilibrium price of bonds or yields at all maturities and the equilibrium exchange rate:

1. are log-affine functions of the five sources of risk in the model, q_t
   - home and foreign short rate factors (which represent **exogenous monetary policies of the two central banks**),
   - relative currency demand factor,
   - home and foreign bond demand factors (e.g. increases with **CB's asset purchases**),
2. depend on the degree of **risk aversion of the arbitrageurs**, and
3. depend on the **size and distribution of arbitrageurs' portfolio** across currency, W_{Ft}, and all bond maturities τ, $X^{(\tau)}_{Ht}$ and $X^{(\tau)}_{Ft}$.

Main model results:

1. **No insulation of monetary policy**: Float does not protect independence of conventional and "unconventional" domestic monetary policy from foreign monetary policies, neither in setting the short term interest rates nor the yield curve.
2. **Another key policy implication: QE transmits especially strongly**, affecting foreign yields almost as much as home yields.
3. **Global arbitrageurs risk aversion is key:** when arbitrageurs are risk neutral, UIP and EH both hold.

SUMMARY

- **The model is a natural framework for addressing the international transmission of conventional and unconventional monetary policy from the perspective of financial markets participants.**

- **It successfully replicates the empirically documented violations of EH and UIP and obtains a very good fit of moments of yields across countries and maturities (Table 1), thanks to realistic frictions in financial markets.** These frictions break the international insulation of monetary policy in standard international macro models with perfect capital mobility and floating exchange rates, where both UIP and EH hold (Trilemma).

- **Obtains sizeable monetary policy international spillovers, especially of QE.**

In sum, a great and necessary contribution to understanding and quantifying monetary policy transmission to bond markets across countries and maturities and to currency markets.

My comments:

1. **The realistic frictions in international financial markets come at a price for explaining the role of monetary policy in the behavior of yield curves and exchange rates: partial equilibrium and exogenous monetary policy.**
    a. One **critical contribution of this paper is the consideration of a full distribution of bonds across maturities** as in Vayanos-Vila (2021): there is a continuum of maturities, with an endogenous arbitrary distribution (uniformity not imposed) of arbitrageurs portfolio across maturities. Several influential papers (properly surveyed in the paper) resolve also some of the empirical puzzles with simpler alternatives, e.g. only two kinds of bonds, short term vs long term. **How key is this difference?** My intuition: it must play a **key role in very good fit of the model of a large set of moments of yields across countries and maturities** (Table 1). Authors should exploit/document it more.
    b. Role of monetary policy. Is there room for extensions?

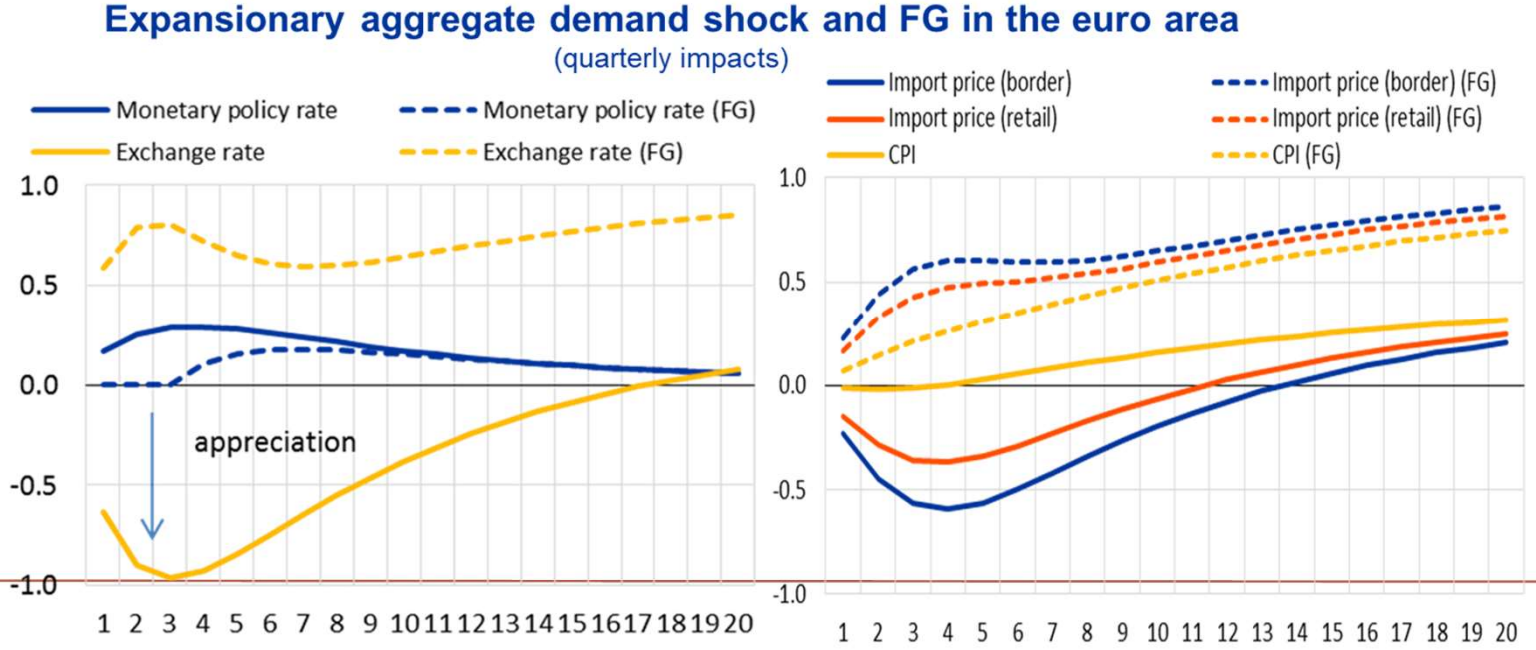
2. **I will also comment on the empirical results regarding the transmission of QE to (1) the yield curve, (2) the exchange rate, and (3) the foreign yield curve.**

The realistic frictions in international financial markets of the model come at a price for explaining the role of monetary policy in the behavior of yield curves and exchange rates: partial equilibrium and exogenous monetary policy.

This paper belongs to a literature that focuses on the perspective of financial markets participants and abstracts from feedback effects from **inflation** –fixed- and **activity**, and hence from the **reaction function of monetary policy.**

→ **But the intensity and even the sing of ER reaction to shocks differs** depending on the **monetary policy reaction** and on the **source of shock** (including demand vs supply).

Example from Ortega and Osbat (2020) "Exchange Rate Pass-Through in EA and EU countries", ECB OP



ROLE OF MONETARY POLICY

Micro-founded finance model, not a DSGE with inflation and output and a monetary policy rule e.g. à la Taylor. Monetary policy is represented as exogenous but correlated:

- short term interest rates home (i_{Ht}) and abroad (i_{Ft}) are exogenous
- their innovations are positively correlated. Contemporaneous correlation of 0.814 for US and Germany/EA in the estimation.

1. Is it possible to extend the model having **monetary policy follow a simple feedback rule**? E.g. $di_{jt} = f (i_{jt-1} , i_{it-1}) dt$, allowing for a lag and for reacting to foreign monetary policy (leader-follower) instead of correlated innovations?

   → My intuition: it should improve the empirical fit of the model.

2. How would the results change **under ZLB and Forward Guidance** (fixed policy rates for a certain period of time)?

3. Is there room for some **endogenous inflation** – its reaction to exchange rate changes is key in the transmission of the shocks that move the ER to the economy -- and to include it as the **key driver or the monetary policy rule**?

COMMENT #1 ON QE TRANSMISSION: TO DOMESTIC YIELD CURVE

Central Banks QE interventions since the GFC have flattened the sovereign yield curves:

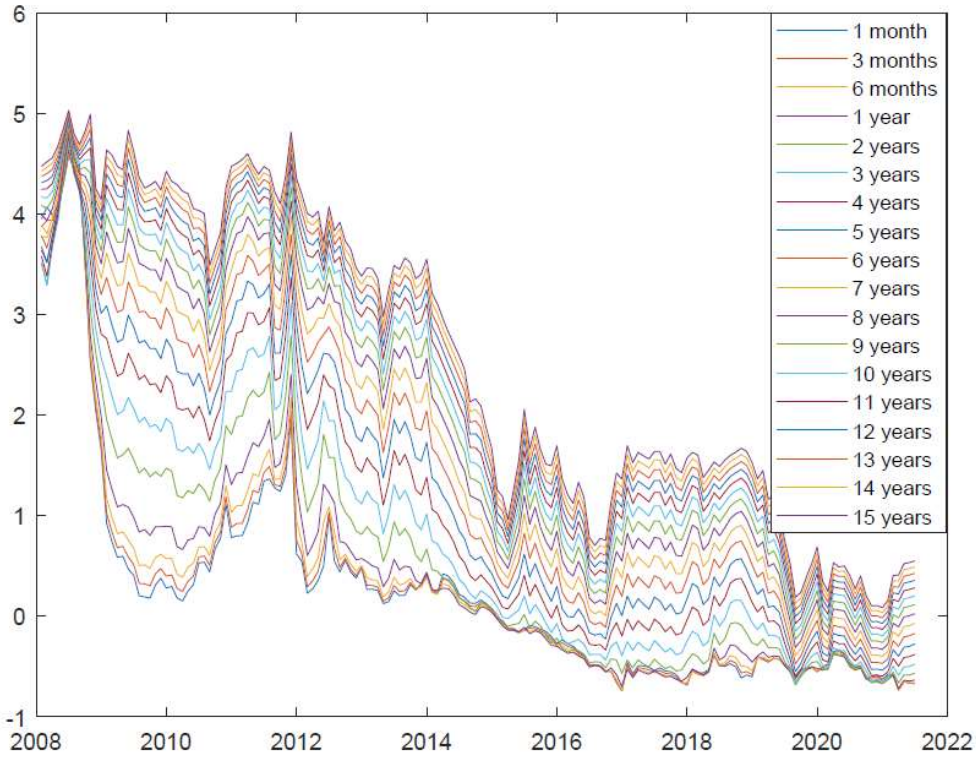
duration risk extraction of central banks asset policies.

This paper assumes no credit or default risk. The estimation can safely assume that for US or German government bonds.

How much the results may translate to other countries, especially EME?

There is empirical evidence in favor of **QE resulting in more relevant parallel shifts of the yield curve (due to reduction of credit or default risk in a country) than its flattening (due to reduction of the term premium).**

Figure 1: Sovereign Yield Data



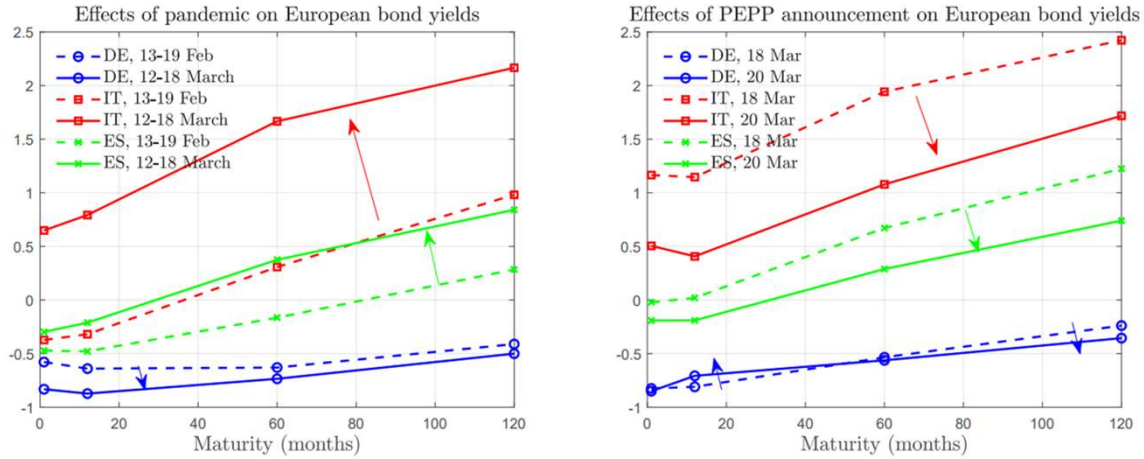
This figure plots the Euro areas sovereign yields of different maturities.

COMMENT #1 ON QE TRANSMISSION: TO DOMESTIC YIELD CURVE

Costain, J., G. Nuño and C. Thomas (2022) "The Term Structure of Interest Rates in a Heterogeneous Monetary Union" shows that pandemic purchases by the ECB transmitted very differently across countries in the Euro area:

- The flattening of the yield curve ("duration risk extraction") did not dominate in all countries. It did in Germany.
- The major changes were parallel shifts downwards of the yield curve, especially in countries whose risk premia had risen more with the pandemics ("default risk extraction")

Figure 1: Effects of the pandemic and the PEPP announcement on German, Spanish, and Italian yields



Notes. Data source: Datastream.
Left panel. Shifts in German, Spanish, and Italian zero-coupon yields (annual percentage points) from the weekly average of 13-19 Feb. 2020 (dashes), to that of 12-18 Mar. 2020 (solid).
Right panel. Shifts in German, Spanish, and Italian zero-coupon yields (annual percentage points) from 18 March 2020 (dashes, before PEPP announcement) to 20 March 2020 (solid, after).

COMMENT #2 ON QE TRANSMISSION: TO THE EXCHANGE RATE

Central Banks QE interventions since the GFC have intended to stimulate inflation and activity under ZLB and persistent low inflation.

It is well documented in the literature that **QE interventions have depreciated home currency**, thereby boosting inflation (more expensive foreign goods) and activity (better price competitiveness increases exports).

This paper is estimated for the US and euro area (Germany)'s yield curves and the USDEUR exchange rate

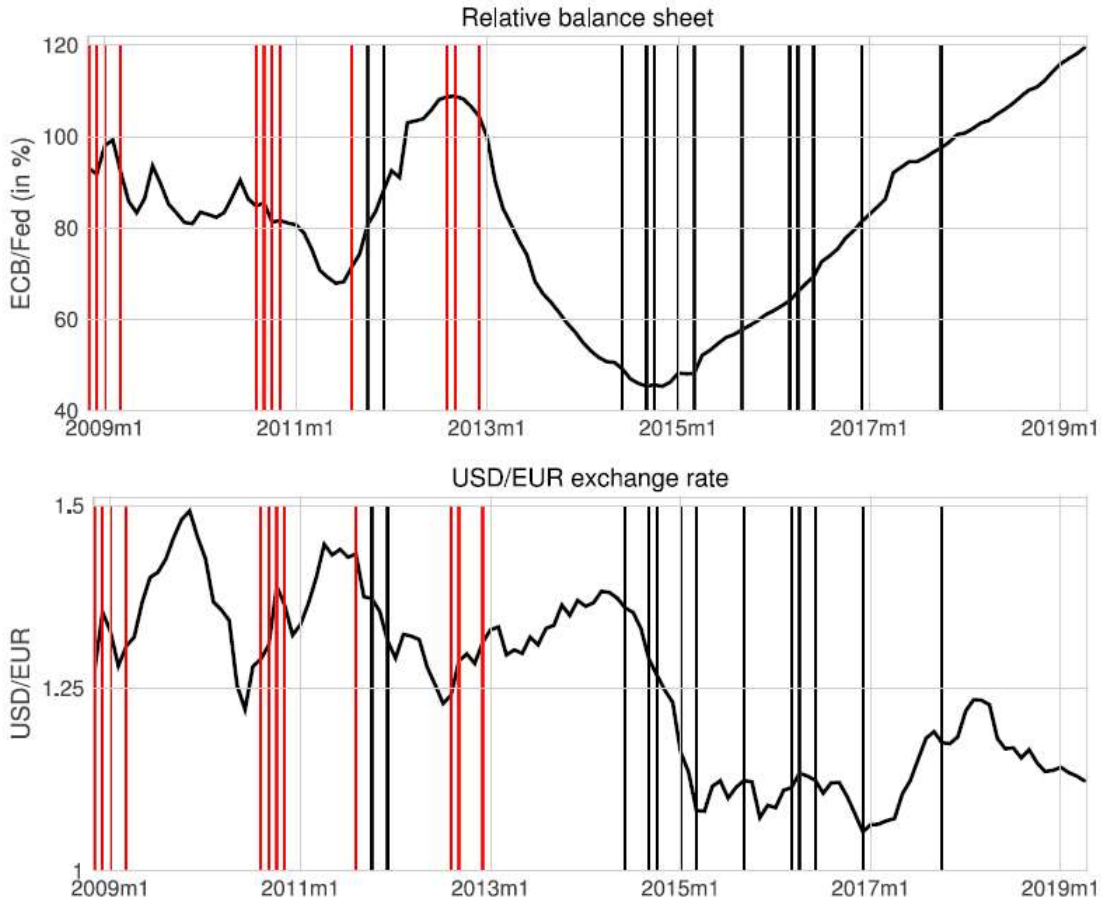


Fig. 1. Relative balance sheet, the dollar-euro exchange rate and QE announcements *Notes:* The upper panel shows the evolution of the relative balance sheet of the ECB and the Federal Reserve (ECB/Fed in percent). The bottom panel plots the USD/EUR exchange rate. Across both charts, the black (red) vertical lines indicate the dates of QE announcements by the ECB (Federal Reserve). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

COMMENT #2 ON QE TRANSMISSION: TO THE EXCHANGE RATE

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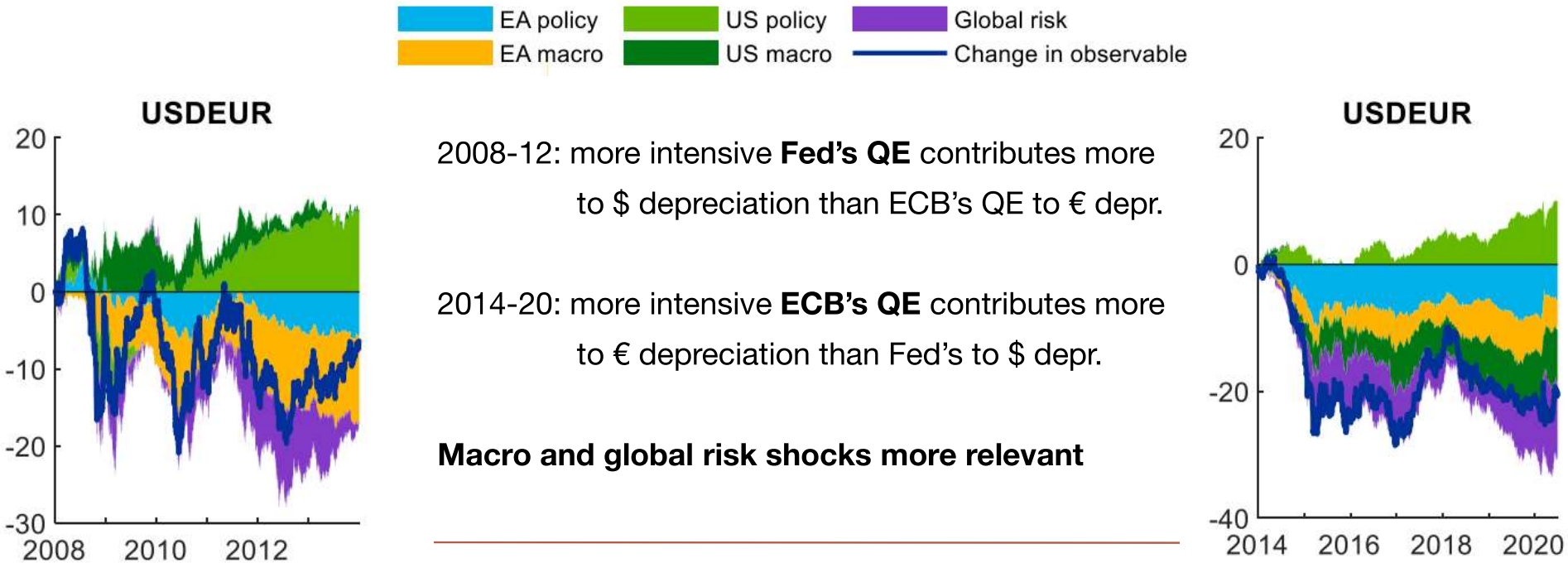
How much did the Fed's and ECB's QE actually move the EUR/USD exchange rate? Maybe not than much.

Macro shocks (supply and demand) and global risk (triggers flight to safe haven) found empirically more relevant.

Shock decomposition from Brandt et al. (ECB WP, 2021) daily BVAR estimated on 10y euro OIS rate, EURO STOXX price index, US S&P500, USDEUR exchange rate and spread between the 10y euro OIS and the 10y US Treasury yield. Identification with sign restrictions allows for instantaneous spillovers between EA and the US.



2008-12: more intensive **Fed's QE** contributes more to $ depreciation than ECB's QE to € depr.

2014-20: more intensive **ECB's QE** contributes more to € depreciation than Fed's to $ depr.

Macro and global risk shocks more relevant

COMMENT #3 ON QE TRANSMISSION: TO FOREIGN YIELD CURVE

Central Banks QE interventions since the GFC have also an impact on foreign yields

This paper: the transmission of QE to foreign yield curve is virtually complete, and symmetric (from the US to EA and from the EA to the US).

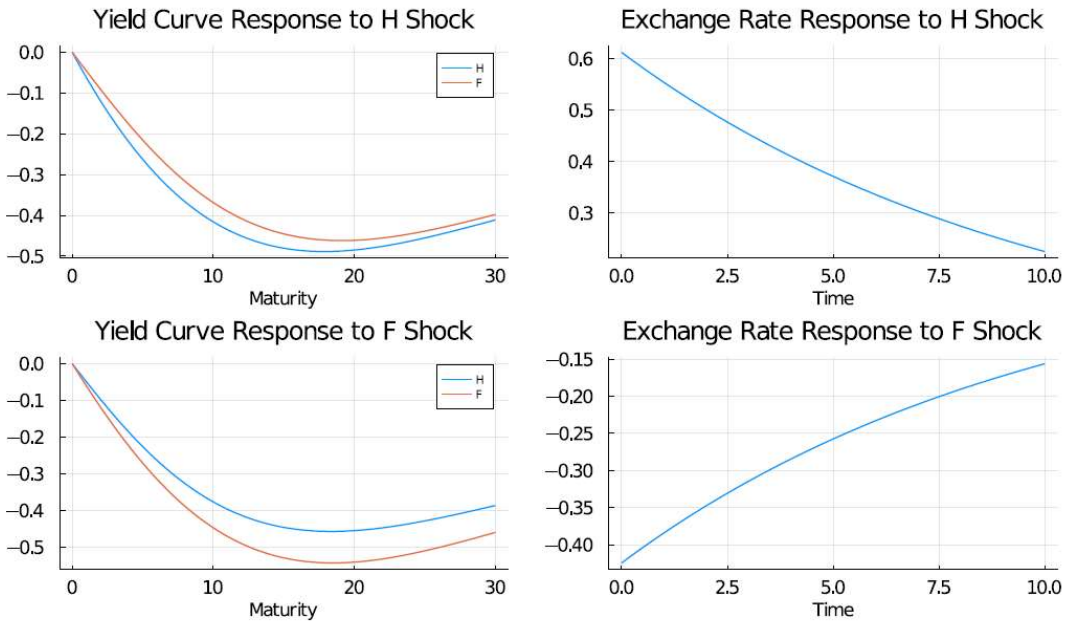


Figure 5: Unconventional Monetary Policy – Bond Purchases

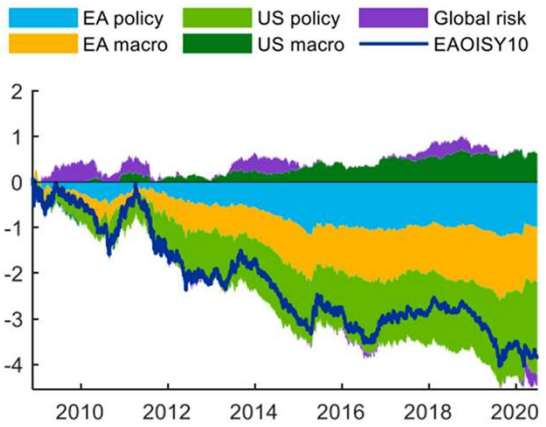
COMMENT #3 ON QE TRANSMISSION: TO FOREIGN YIELD CURVE

Empirical estimations are at odds with

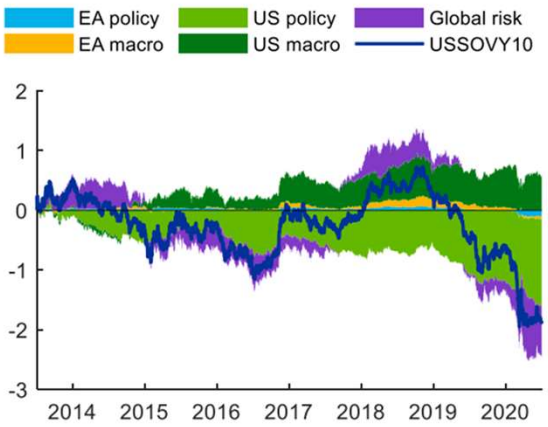
- **full transmission**: The impact of US QE on foreign yield curve (Canadian in Dahlhaus et al. (JMCB, 2018) or EA in Brand et al. (2021)) is significant but smaller than on US yield curve.
- **Symmetry:** The impact of US QE abroad is larger than that of foreign QE on US yield curve.

In line with **the dominant role of the US in global financial markets** (Miranda-Agrippino and Rey, RES 2020) and of **the safe haven status of USD denominated assets.**

C. Fed unconventional policy: spillovers to EA long-term yields



D. ECB unconventional policy: spillovers to US long-term yields



Notes: Panel A shows cumulative changes in EA equity prices from 10 March 2000 to 31 December 2002 and panel B cumulative changes in US equity prices from 07 July 2011 to 31 December 2012. Panel C shows cumulative changes in EA 10y OIS from 24 November 2008 to 30 June 2020, and panel D cumulative changes in 10y US Treasury yields from 04 July 2013 to 30 June 2020. All shock contributions are normalised to zero at the beginning of the review period.

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THANK YOU

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