

# “Global Risk and the Dollar”

Georgios Georgiadis, Gernot J. Müller, Ben Schumann

Discussion by:

**Nancy R. Xu**

Boston College

7th BdF-BoE-BdI International Macroeconomics Workshop

November 8, 2021

# What does this paper do?

- How does global risk impact real economy and financial markets?
- Examine systematically how **exogenous innovations to global risk** affect the economy and financial market (for both US and Rest of World “RoW”) in a VAR framework;
- Examine a counterfactual environment that **shuts down** the risk channel through the **dollar**.

# Bayesian proxy structural VAR

Following Arias, Rubio-Tamirez and Waggoner (forthcoming, *JoEconometrics*):

$$\begin{bmatrix} y_t^1 \\ m_t^1 \end{bmatrix} = \mathbf{A}_0 \begin{bmatrix} y_{t-1}^1 \\ m_{t-1}^1 \end{bmatrix} + \mathbf{A}_1 \begin{bmatrix} y_{t-1}^0 \\ m_{t-1}^0 \end{bmatrix} + \varepsilon_t^1 \quad (1)$$

$$E \varepsilon_t^1 \varepsilon_{t-1}^1 = \mathbf{V} \quad (2)$$

$$E \varepsilon_t^1 \varepsilon_t^0 = \mathbf{0} \quad (3)$$

## Endogenous variables $y$ :

- (1) US dollar nominal effective exchange rate (NEER)
- (2) US IP, US CPI, RoW IP
- (3) VXO, excess bond premium
- (4) 1-year Tbill, RoW policy rates
- (5) Integration channels: US real export, US real import, crossborder bank credit

*Additional: EMBI spread, RoW Equity, other risky index...*

## Exogenous instruments $m$ :

# Bayesian proxy structural VAR

Y Following Arias, Rubio-Tamirez and Waggoner (forthcoming, *JoEconometrics*):

$$\begin{bmatrix} y_t^1 \\ m_t^1 \end{bmatrix} = \mathbf{A}_0 \begin{bmatrix} y_{t-1}^1 \\ m_{t-1}^1 \end{bmatrix} + \mathbf{A}_1 \tilde{m}_t^1 \quad (1)$$

$$E_t m_t^1 | s_t^1 \sim \mathbf{V} \quad (2)$$

$$E_t m_t^0 | s_t^0 = 0 \quad (3)$$

## Endogenous variables $y$ :

- (1) US dollar nominal effective exchange rate (NEER)
- (2) US IP, US CPI, RoW IP
- (3) VXO, excess bond premium
- (4) 1-year Tbill, RoW policy rates
- (5) Integration channels: US real export, US real import, crossborder bank credit

*Additional: EMBI spread, RoW Equity, other risky index...*

## Exogenous instruments $m$ :

- (1) Intradaily changes in price of gold (Piffer & Podstawski, 2018): percentage variation in the price of gold around uncertainty events (Bloom, 2009) when an event occurred; 0 otherwise
- (2) “Pure” monetary policy surprises (Jarocinski & Karadi, 2020)

# Main findings

## Y A positive global risk shock:

- (1) US dollar nominal effective exchange rate (NEER) – Appreciation
- (2) US IP, US CPI, RoW IP – Contraction
- (3) VXO, excess bond premium – Increase
- (4) 1-year Tbill, RoW policy rates – Decrease
- (5.1) US real net import – Increase (expansionary)
- (5.2) Cross-border bank credit – Decrease (contractionary)

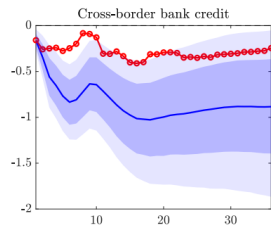
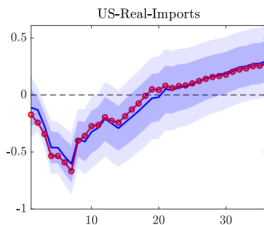
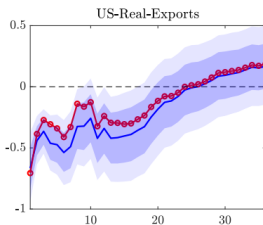
# Main findings

## Y A positive global risk shock:

- (1) US dollar nominal effective exchange rate (NEER) – Appreciation
- (2) US IP, US CPI, RoW IP – Contraction
- (3) VXO, excess bond premium – Increase
- (4) 1-year Tbill, RoW policy rates – Decrease
- (5.1) US real net import – Increase (expansionary)
- (5.2) Cross-border bank credit – Decrease (contractionary)

## Y Counterfactual environment with no “(1) global risk $\tilde{N}$ dollar appreciation”

- (1) weak risk effect on real trade through dollar appreciation
- (2) slightly stronger risk effect on financial channel through dollar appreciation



# #1 Global risk shock proxy

## • **Commonality in risky and safe asset prices**

- Model-based, utilizes more information to generally define “risk”
- Recent example: Miranda-Agrippino & Rey (2020)

# #1 Global risk shock proxy

## • **Commonality in risky and safe asset prices**

- Model-based, utilizes more information to generally define “risk”
- Recent example: Miranda-Agrippino & Rey (2020)

## • **Filtered from a global factor model of VIX variables around the world**

- No forward-looking bias, high-frequency, consistent with asset pricing models
- Recent example: Bekaert, Hoerova, Xu (2021)



# #1 Global risk shock proxy

## • **Commonality in risky and safe asset prices**

- Model-based, utilizes more information to generally define “risk”
- Recent example: Miranda-Agrippino & Rey (2020)

## • **Filtered from a global factor model of VIX variables around the world**

- No forward-looking bias, high-frequency, consistent with asset pricing models
- Recent example: Bekaert, Hoerova, Xu (2021)

## • **US risk proxies**

- US Global risk
- Recent example: Du, Im, Schreger (2018); Jiang et al. (2021a,b)

# #1 Global risk shock proxy

## • Commonality in risky and safe asset prices

- Model-based, utilizes more information to generally define “risk”
- Recent example: Miranda-Agrippino & Rey (2020)

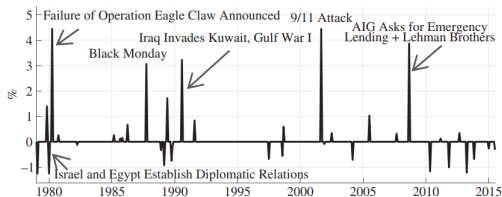
## • Filtered from a global factor model of VIX variables around the world

- No forward-looking bias, high-frequency, consistent with asset pricing models
- Recent example: Bekaert, Hoerova, Xu (2021)

## • US risk proxies

- US Global risk
- Recent example: Du, Im, Schreger (2018); Jiang et al. (2021a,b)

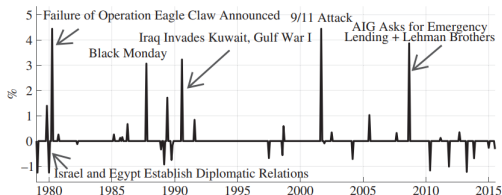
## • Changes in gold price on event dates with pre-identified uncertainty/risk events: **This paper**



(Figure 1, Piffer & Podstawski, 2018)

# #1 Global risk shock proxy

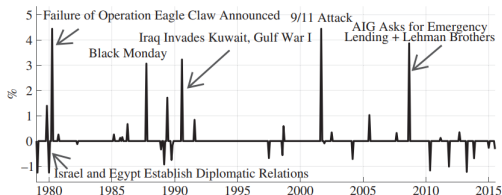
- ÿ **Commonality in risky and safe asset prices**
- ÿ **Filtered from a global factor model of VIX variables around the world**
- ÿ **US risk proxies**
- ÿ **Changes in gold price on event date with pre-identified uncertainty/risk events: [This paper](#)**



(Figure 1, Piffer & Podstawski, 2018)

# #1 Global risk shock proxy

- ÿ **Commonality in risky and safe asset prices**
- ÿ **Filtered from a global factor model of VIX variables around the world**
- ÿ **US risk proxies**
- ÿ **Changes in gold price on event date with pre-identified uncertainty/risk events: [This paper](#)**



(Figure 1, Piffer & Podstawski, 2018)

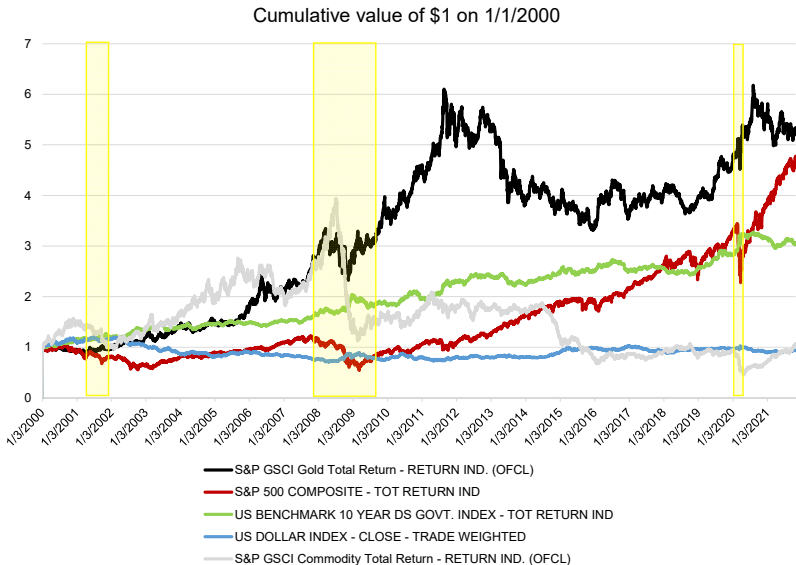
## Advantages:

- ñ Focus on gold price movements only related with uncertainty/risk events

## Potential disadvantages:

- ñ Less continuous; depend on the choice of “risk” events
- ñ Doesn’t really capture/allow for asymmetry
- ñ Strong assumption that “gold indeed behaves as safe” during risk episodes

# #2 “Gold is safe”: Conventional wisdom vs. Empirics



## #2 “Gold is safe”: Conventional wisdom vs. Empirics

- What might have been considered a safe haven in **one market crisis** might not be in the next, and it's hard to know ex-ante which assets will behave as safe havens in **future market crises**. (What is a good risk proxy?)

## #2 “Gold is safe”: Conventional wisdom vs. Empirics

- What might have been considered a safe haven in **one market crisis** might not be in the next, and it's hard to know ex-ante which assets will behave as safe havens in **future market crises**. (What is a good risk proxy?)
- Best chance might still be: using asset prices that have reliably safe asset behaviors over time. (... perceived by the market)

## #2 “Gold is safe”: Conventional wisdom vs. Empirics

- ÿ What might have been considered a safe haven in **one market crisis** might not be in the next, and it’s hard to know ex-ante which assets will behave as safe havens in **future market crises**. (What is a good risk proxy?)
- ÿ Best chance might still be: using asset prices that have reliably safe asset behaviors over time. (... perceived by the market)
- ÿ Correlation among daily changes (2000-2021)

	Gold	US	EMU GovBond10yrs	IT	FR	Commodity	DOLLAR	USD to GBP
S&P500	-0.010	-0.358	-0.227	0.063	-0.157	0.272	-0.085	0.128
VIX	0.011	0.279	0.182	-0.102	0.095	-0.225	0.060	-0.092



## #3 Microscope comments

- ÿ The BPSVAR model now includes VXO as a  $y$  variable and event-based gold prices as the  $m$  variable. One can also imagine doing the opposite, whereas volatility index may be viewed more of a “market risk gauge” by design.
- ÿ Can the paper report some results on the MP shock? **Is Global Financial Cycle in fact a Global Risk Cycle** (Bekaert, Hoerova, Xu, 2021) **or Global Policy Cycle** (Miranda-Agrippino & Rey, 2020)?
- ÿ Exhibition:
  - ñ I feel that Section 3.4 (exogenous instrument) should come a bit earlier, as that is one of your contributions;
  - ñ A time series plot of the risk and MP shock may be useful;
  - ñ I agree that the choice of a risk shock and a MP shock are probably enough as exogenous shocks; BHX2021’s Appendix A derives a simple habit-based model to motivate this choice.

# Conclusion

- ÿ **I highly recommend this paper! Great idea, intuitive findings, and the execution and the writing are very carefully done**
- ÿ **My main comment:**  
When we think about “global risk”, its measuring is still an ongoing debate, and worth discussing and exploring a bit more options. Has gold really been exhibiting safe asset properties in the recent years?

**Thank You!**

nancy.xu@bc.edu