

China's footprint in global financial markets*

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What happens to global financial markets when China catches a cold? That question has long been studied for economies like the United States. But global spillovers from China have received much less systematic study, though they feature heavily in the financial press. This paper helps to plug that gap. We find that shocks in China have a material impact on global financial markets, in particular, on commodities. Moreover, in times of heightened global volatility, or when shocks are large, Chinese spillovers can be sizeable. However, shifts in monetary policy in the United States or global risk sentiment clearly remain more important drivers of global financial market dynamics, in line with the global financial cycle literature.

*Authors' note: The views expressed in this note are those of the authors and do not necessarily reflect those of the European Central Bank or the Eurosystem.

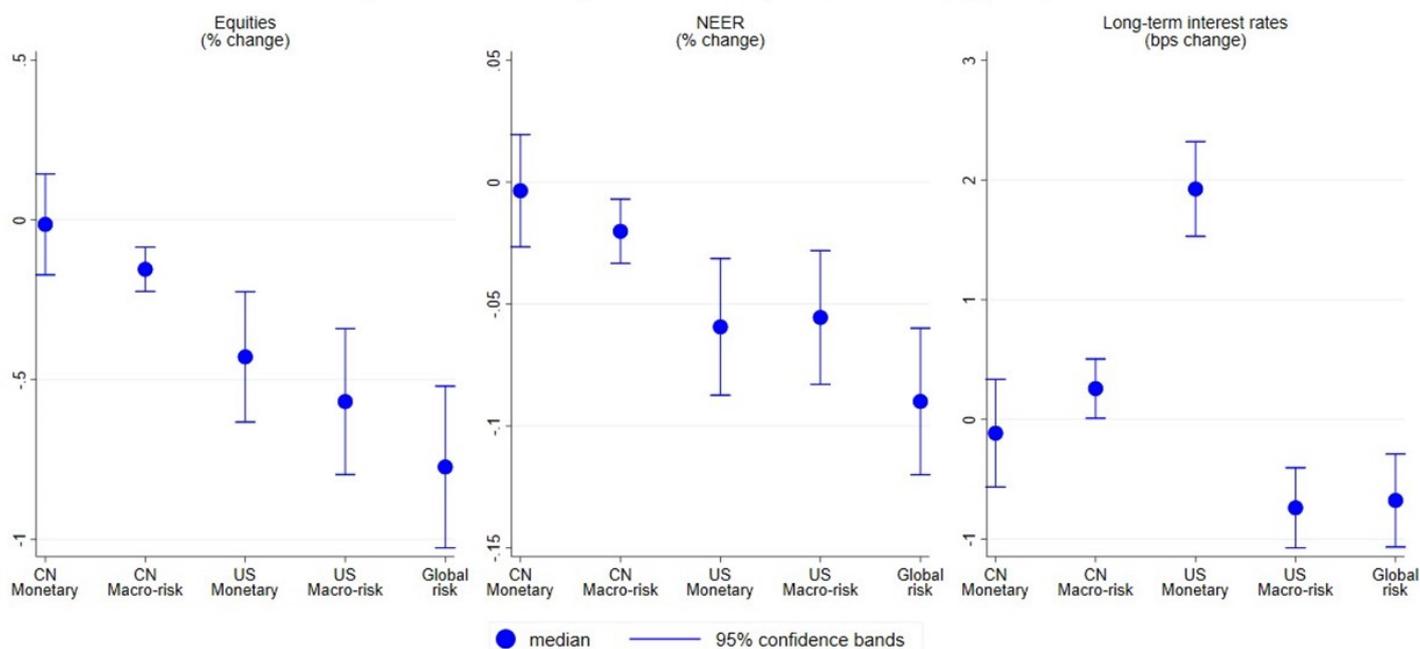
What happens to global financial markets when China catches a cold? That question has long been studied for economies like the United States (US), where it is well documented that developments play a dominant role in shaping global financial markets (Miranda-Agrippino and Rey, 2020). Yet spillovers from China to global markets have received much less coverage; our analysis helps to plug that gap.

This paper investigates how shocks in China's financial markets ripple through global markets. This is not an easy task: global financial markets are driven by a multitude of shocks which interact at high frequency. To isolate China's role in global markets, the challenge is to purge market developments in China of key global shocks. To do that, we propose an empirical framework that jointly decomposes daily movements in Chinese and US financial asset prices into underlying drivers using a Bayesian VAR with sign, narrative and relative restrictions in the spirit of Brandt et al. (2021), thereby aiming to better control for possible commonalities. By now, Chinese financial markets appear sufficiently reflective of market conditions to extract information from their co-movement to identify what is driving these assets. For China, we identify 'macro-risk' shocks, reflecting shifts in perceptions about the outlook about the Chinese economy, and monetary policy shocks, reflecting shifts in central bank policy. We simultaneously identify a similar set of shocks for the US as well as a global risk shock that reflects movements in risk sentiment that generate safe-haven flows across global markets. Once we have the identified structural shocks, we use these to map out the global footprint of China in global financial markets and commodities using local projections à la Jordà (2005), similar to the approach of Lodge and Manu (2022).

Our empirical evidence suggests that shocks emanating from China spill over to global financial markets but are generally less important than US or global risk shocks (see Figure 1). Global equity prices respond significantly to Chinese macro risk shocks but the impact of shocks stemming from the US or global risk shocks can be up to three times as large. Shocks in China are associated with a much more modest effect on global bond markets. Yet, countries with low sovereign ratings experience a significant increase in long-term government bond yields following an unfavourable macro risk shock in China, while the response of yields in countries with high sovereign ratings is statistically insignificant. That signals evidence for a risk-taking channel associated with developments in China. Overall, our results support the finding of the literature that US shocks, and shifts in global risk sentiment, are key factors shaping global financial markets (Rey, 2015; Georgiadis et al., 2021). Yet, spillovers from China are significantly reinforced when they hit in a time of heightened global volatility, or when the shocks are large.

Figure 1: The impact reaction of global financial variables to structural shocks

(effects of a shock that generates a 1% drop in China or US equity prices)

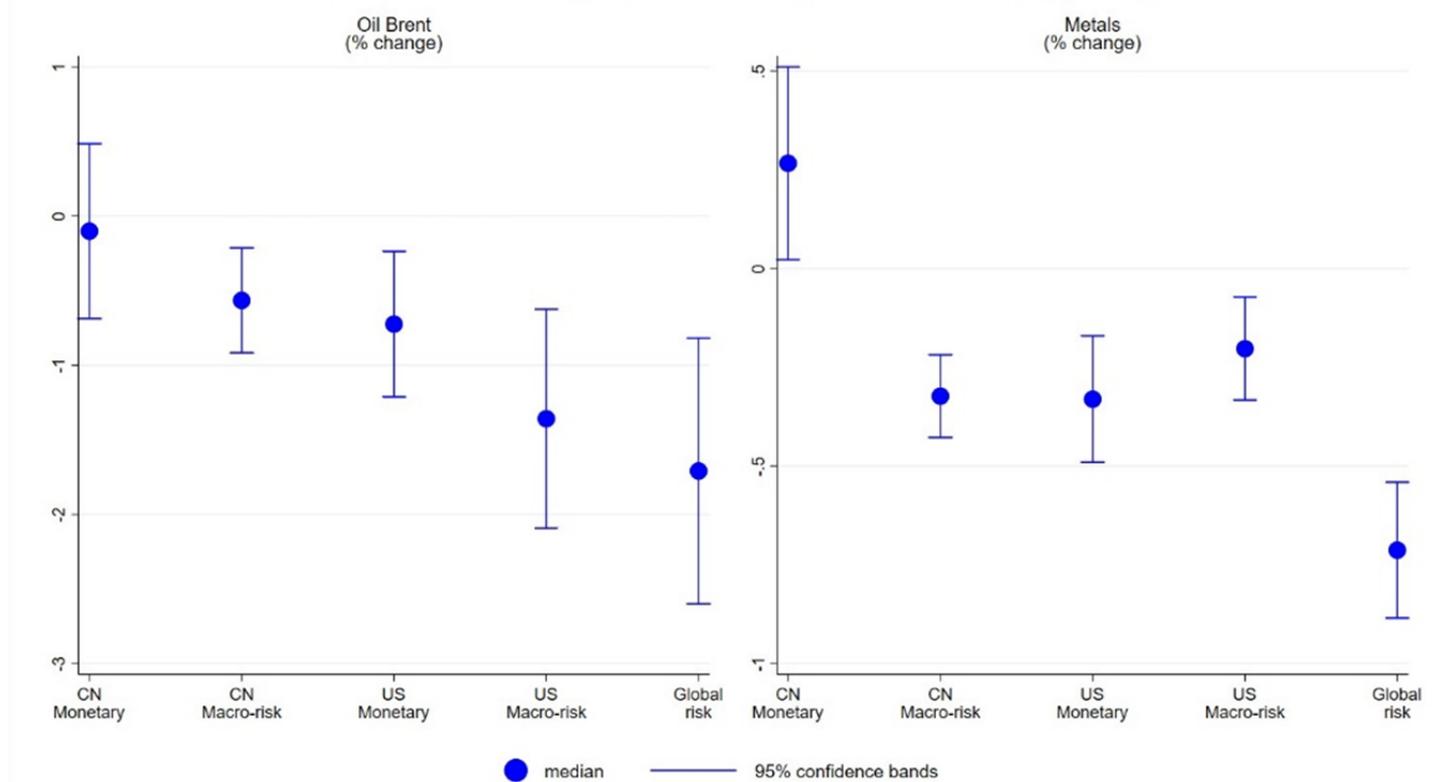


Notes: The charts show the impact (on the same day) response of global financial market variables to structural shocks. The responses are scaled to represent the impact to China shocks (US and global shocks) that would generate a 1% drop in China (US) equity prices. The range refers to the 95 percent confidence intervals based on Driscoll-Kraay corrected standard errors.

China matters most for commodity markets. Shocks originating in China are found to significantly shape developments in global commodity markets, for some commodities the impact is found to be larger than when shocks originate in the US. That is consistent with the important role played by China in the demand for global energy and non-energy commodities – China consumes a similar amount of energy goods as the US but a significantly higher share of non-energy commodities – and aligns well with findings of other studies (Miranda-Agrippino et al., 2020).

Figure 2: The impact reaction of commodity prices to structural shocks

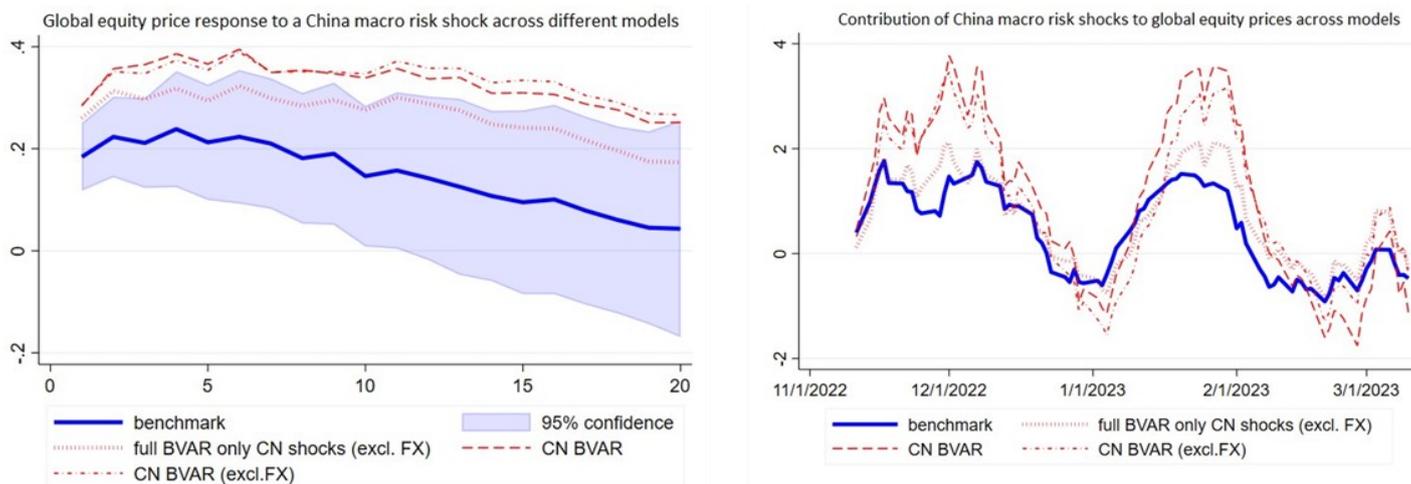
(effects of a shock that generates a 1% drop in China or US equity prices)



Notes: The charts show the impact (on the same day) response of commodity prices to structural shocks. The responses are scaled to represent the impact to China shocks (US and global shocks) that would generate a 1% drop in the China (US) equity prices. The range refers to the 95 percent confidence intervals based on Driscoll-Kraay corrected standard errors.

We also show that it is key to properly account for global factors when evaluating spillovers from China; otherwise, its footprint on financial markets could be overestimated. Empirical results show that simpler models – that do not properly filter out US and global risk influences – can lead to substantially stronger estimates of China's footprint (Figure 3, left panel). For example, when China's economy reopened after the COVID pandemic lockdown, models not accounting for other global shocks would have estimated spillovers to global equity prices to be twice as important as our model would indicate (Figure 3, right panel).

Figure 3: The importance of filtering out US and global shocks



Notes: The left panel shows the effects of China macro risk shocks identified in the benchmark model versus alternative specifications on global equity prices; the right panel displays variations in the estimated median historical contribution to global equity prices around China's reopening after the Covid-19 lockdown. We set up three additional BVARs: one that starts from our benchmark model but identifies only structural shocks in China and leaves the response of exchange rate to China-specific shocks unconstrained (full BVAR only CN shocks (excl. FX)), and a second and a third alternative specification which solely includes Chinese variables to identify the Chinese shocks (based on the same sign restrictions as in the benchmark model), and this with or without constraining the response to the exchange rate (CN BVAR and CN BVAR (excl. FX), respectively).

So what happens when China gets a cold? Global financial markets would sneeze as well. But we should only start worrying when symptoms of the flu appear or when the global immune system is fragile. ■

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