

International Effects of the Chinese Uncertainty Shocks

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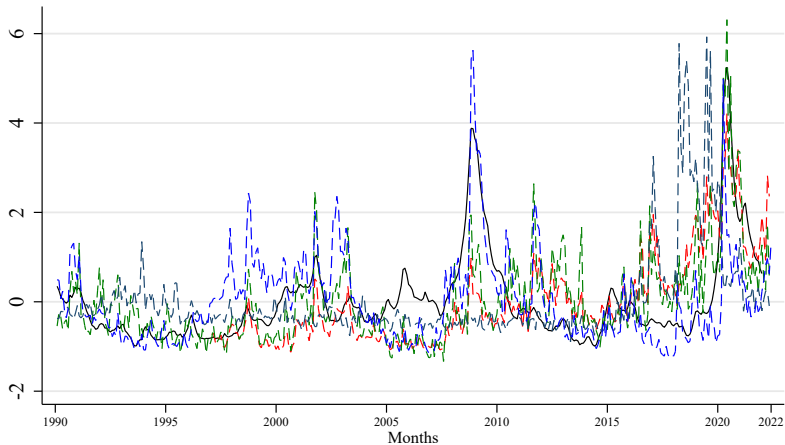
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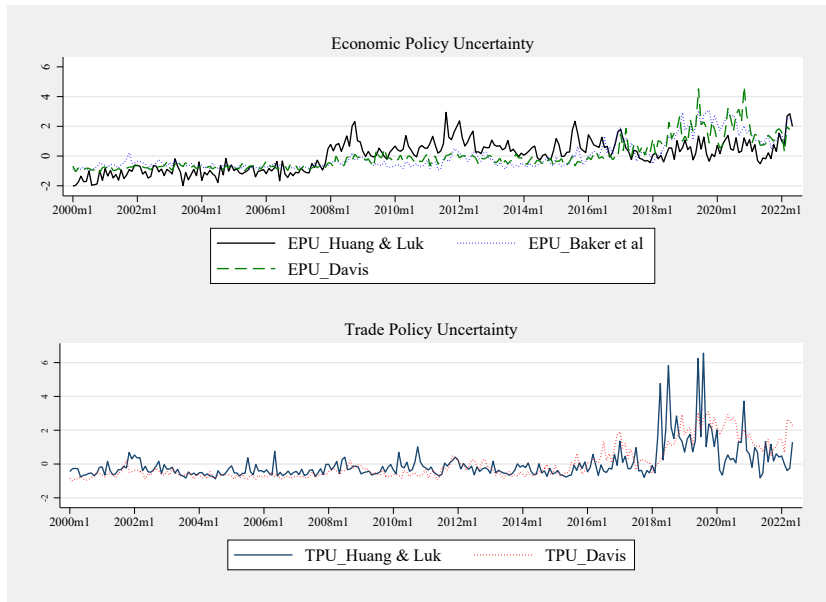
Introduction

- ▶ This paper studies the international spillover effects of Chinese economic and trade policy uncertainty shock on advanced and emerging market economies
- ▶ Why Chinese uncertainty?
 - ▶ surging global uncertainty and growing interest in studying the effects of policy uncertainties
 - ▶ rising China's integration into the global economy
 - ▶ surging Chinese uncertainty
 - ▶ existing empirical evidence on the cross-border effects of policy uncertainty is very much focused on the US

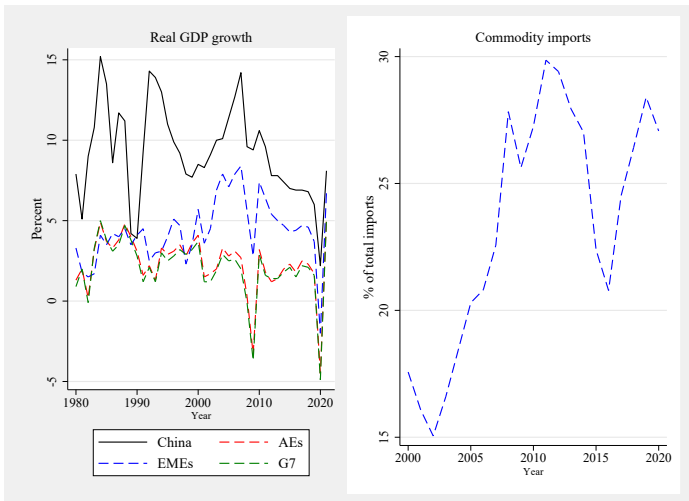
Surging global uncertainty



Surging uncertainty in China



Rising China's integration into the global economy



Rising China's integration into the global economy

	1980- 1990	1991- 2000	2001- 2010	2011- 2020
Average growth	9.20	10.47	10.54	6.95
Share in world exports	1.45	2.95	7.42	12.98
Share in world imports	1.54	2.58	6.26	10.50

Literature review

- ▶ Bernanke (1983) and Dixit and Pindyck (1994) recognises the importance of uncertainty
- ▶ Theoretical models suggest that uncertainty shocks drive part of the business cycle and account for a significant share of aggregate fluctuations
 - ▶ Bloom (2009), Fernández-Villaverde et al. (2011), Gilchrist et al. (2013), Christiano et al. (2014), Born and Pfeifer (2014), Leduc and Liu (2016), Fernández-Villaverde and Guerrón-Quintana (2020) and Caldara et al. (2020)
- ▶ Policy uncertainty negatively affects output growth, productivity, employment, investment and consumption
 - ▶ Bloom (2009), Jurado et al. (2015), Baker et al. (2016), Caggiano et al. (2017), Christou et al. (2020), Leduc & Liu (2016), Caldara et al. (2020), Beetsma & Giuliadori (2012), Leduc & Liu (2016), Mumtaz & Surico (2018)

Literature review

- ▶ Literature on cross-border effects of uncertainty show that the US uncertainty shocks spillover to rest of the world
 - ▶ Colombo (2013), Gauvin et al. (2014), Mumtaz & Theodoridis (2015), Netšunajev and Glass (2017), Cheng (2017), Trung (2019), Caggiano et al. (2020), and Bhattarai et al. (2020)
- ▶ What about Chinese uncertainty?
- ▶ Fontaine et al. (2017), Zhang et al. (2019), Huang & Luk (2020) and Lee et al. (2020) show that Chinese policy uncertainty shocks adversely affect the US economy and commodity markets

Contributions of the study

- ▶ Empirical study of this nature is scant, hence this study fills this gap
- ▶ Demonstrate important empirical evidence of heterogeneity across developed and emerging economies in spillover effects
- ▶ Strong policy implication to policy makers at a time when Chinese uncertainty is soaring

Key findings

- ▶ Chinese uncertainty;
 - ▶ has a negative spillover effects on macroeconomic and financial variables in advanced and emerging economies
 - ▶ adverse effects are larger on emerging marker economies
- ▶ Effects are transmitted through the reduction in global economic activities, trade flow and commodity prices

Methodology and data

- ▶ Our main empirical framework is the monthly panel VAR

$$y_{i,t} = \sum_{j=1}^p A_{i,j} y_{i,t-j} + B_i x_t + u_{i,t}$$

$$u_t = (u'_{1,t} \dots u'_{N,t})'$$

$$iid(0_{n \times 1}, \Sigma)$$

- ▶ A general panel VAR can have dynamic and static inter-dependencies and cross-sub-sectional and dynamic heterogeneity characteristics
- ▶ We use a Bayesian pooled estimator approach that assumes each-cross sectional unit (country) is independent of others, and dynamic coefficient matrices are homogeneous across the countries

Variables

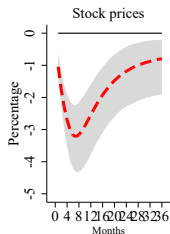
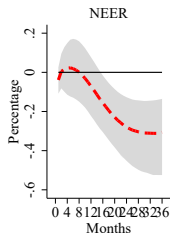
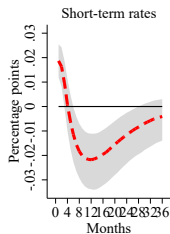
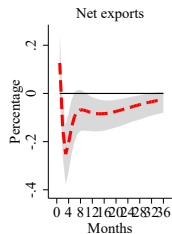
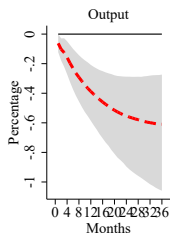
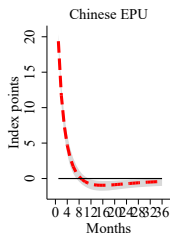
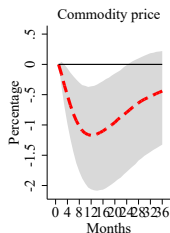
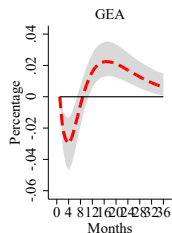
- ▶ **Global block:** GEA, commodity price
- ▶ **Chinese block:** policy uncertainty variable and Chinese output
- ▶ **Domestic variables:** industrial production index, net exports as a share of GDP, short-term interest rate, nominal exchange rate and stock prices
- ▶ **Uncertainty variables:** Economic policy uncertainty index and trade policy uncertainty developed by Huang and Luk (2020)
- ▶ **Data :** 2003m1 to 2019m12

Sub-group models

- ▶ We split the sample into different sub-groups and estimate separate panel VAR models
- ▶ **AEs**: Japan, Korea, Singapore, the US, Canada, UK, German, France, Sweden, Spain, Italy, Australia, and New Zealand
- ▶ **EMEs**: India, Indonesia, Philippines, Malaysia, Thailand, South Africa, Russia, Brazil, Chile, Peru, Mexico, Colombia, Turkey
- ▶ **Asia and Pacific**: Japan, Korea, India, Indonesia, Philippines, Malaysia, Thailand, Singapore, Australia and New Zealand
- ▶ **Developing Asia**: India, Indonesia, Philippines, Malaysia and Thailand
- ▶ **Latin America**: Brazil, Chile, Peru, Mexico and Colombia
- ▶ **BRICS**: India, Brazil, Russia and South Africa
- ▶ **Commodity exporting EMEs**: Brazil, Russia, South Africa, Chile, Colombia, Malaysia, Mexico and Peru

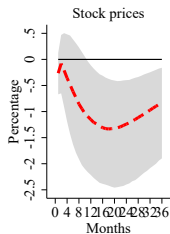
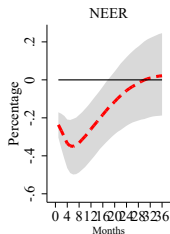
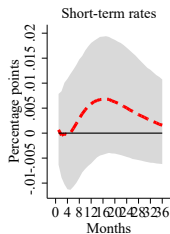
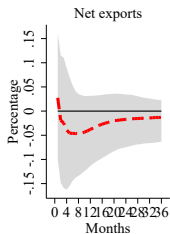
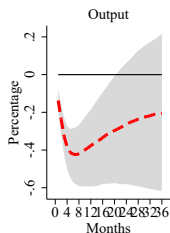
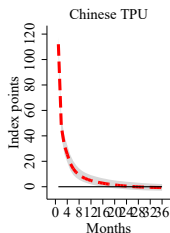
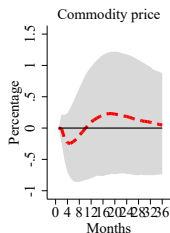
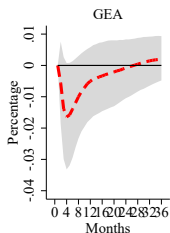
Domestic and global effects of Chinese EPU

Impulses Responses to Chinese EPU Shock



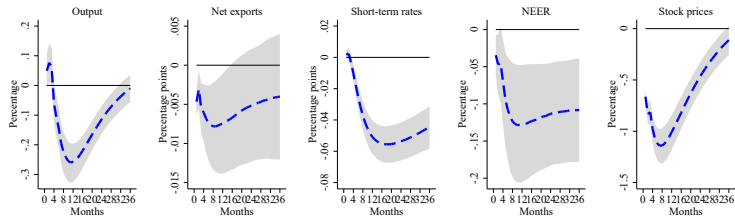
Domestic and global effects of Chinese TPU

Impulses Responses to Chinese TPU Shock

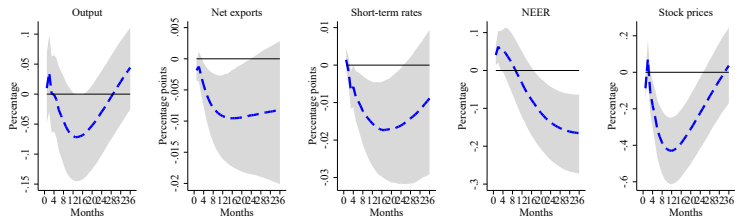


Spillover effects: Advanced Economies (AEs)

EPU Shock

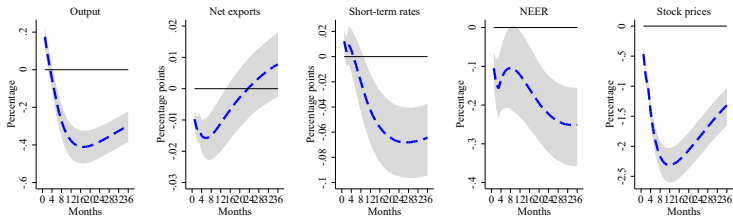


TPU Shock

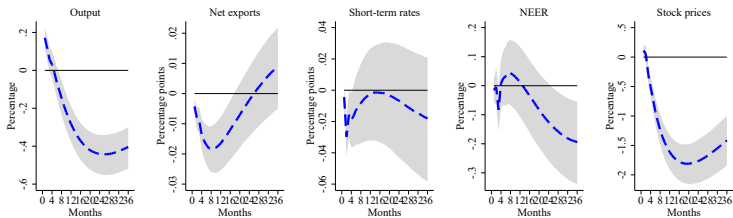


Spillover effects: Emerging Market Economies (EMEs)

EPU Shock



TPU Shock



Summary - maximum effects

Economic Policy Uncertainty Shock							
Variable	AEs	EMEs	Asia and Pacific	Dev Asia	LAEs	BRICS	COM
Output	-0.26	-0.41	-0.41	-0.36	-0.41	-0.84	-0.41
Net exports	-0.01	-0.02	-0.02	-0.03	-0.01	0.0005	-0.01
Interest rate	-0.06	-0.07	-0.04	-0.04	-0.07	-0.12	-0.06
NEER	-0.13	-0.25	-0.16	-0.15	-0.36	-0.24	-0.27
Stock prices	-1.14	-2.31	-1.80	-2.17	-1.85	-2.26	-2.16
Trade Policy Uncertainty Shock							
Output	-0.07	-0.44	-0.03	-0.40	-0.41	-0.30	-0.30
Net exports	-0.01	-0.02	-0.02	-0.03	-0.02	0.002	-0.01
Interest rates	-0.02	-0.03	-0.01	-0.04	-0.08	-0.08	-0.03
NEER	-0.16	-0.16	-0.19	0.21	-0.41	-0.18	-0.24
Stock prices	-0.43	-1.81	-1.21	-1.49	-1.83	-0.96	-1.74

Comparison with the US spillover effects

- ▶ We compare our findings with Bhattarai, S., et al. (2020) who have examined the spillover effects of US uncertainty shocks on EMEs

Variables	Bhattarai, S., et al. (2020)	our study
Output	- 0.25	-0.41
Net exports	0.03	-0.02
Short-term rates	0.02	-0.07
NEER	-0.49	-0.25
Stock prices	-2.37	-2.31

Robustness of panel VAR evidence

- ▶ Robustness tests under various specification:
 1. alternative proxies for Chinese uncertainty
 2. different lag lengths
 3. alternative ordering of policy uncertainty variable
 4. estimating individual models for selected countries
- ▶ Results remain the same

Conclusion and policy implication

▶ **Conclusion:**

- ▶ Chinese policy uncertainty leads to significant macroeconomic and financial spillover effects on AEs and EMEs
- ▶ adverse spillover effects on emerging economies are more prominent and persistent than in advanced economies
- ▶ effects are heterogeneous across emerging market economies
- ▶ heterogeneity in responses due to trade link with China and high commodity dependence on exports

▶ **Policy implication:**

- ▶ policy makers cannot ignore the rising Chinese policy uncertainty
- ▶ policymakers must consider balancing global integration while managing the adverse effects of uncertainty shocks from systemically important economies