

GLOBAL SHOCKS AND MONETARY POLICY TRANSMISSION IN EMERGING MARKETS

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NO. 726

May 2024

ADB ECONOMICS
WORKING PAPER SERIES



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ISSN 2313-6537 (print), 2313-6545 (PDF)

Publication Stock No. WPS240272-2

DOI: <http://dx.doi.org/10.22617/WPS240272-2>

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ABSTRACT

This paper empirically examines the impact of global shocks on monetary policy transmission in 24 emerging market economies (EMEs), using panel local projections over the period 2000 to 2022. The estimated results show that adverse global shocks, namely a tighter United States monetary policy stance, higher global financial market uncertainty, and global climate change, could dampen the transmission of monetary policy in EMEs. Specifically, the overall responses of industrial production and inflation to monetary policy shocks are more muted compared to the case where the impacts of global factors are isolated. We also study whether economy-specific characteristics across EMEs affect the monetary policy transmission impacts of global shocks. The results suggest that a higher level of financial development can partially offset the dampening effects of global shocks, while a higher degree of capital account openness and trade openness further amplify the impact of global shocks.

Keywords: global shocks, monetary policy transmission, emerging market economies

JEL codes: E52, F4

1. Introduction

There is growing evidence that emerging market economies (EMEs) have become more synchronized with global factors over the last 2 decades, as they are increasingly integrated into the global economy through real and financial linkages (e.g., De Leo, Gopinath, and Kalemli-Ozcan 2022, Miranda-Agrippino and Rey 2022). A natural question that arises then is to what extent has the effectiveness of monetary policy in EMEs been affected by these global factors?

Despite the literature paying a great deal of attention to the international transmission of external shocks, less is discussed on the role of global shocks in the monetary policy transmission of EMEs. A few but growing recent studies examine whether an economy's exposure to the global financial cycle allows for effective monetary independence (e.g., Miranda-Agrippino and Rey 2020), indicating that a tightening United States (US) monetary policy shock may lead to adverse economic outcomes in other economies, which challenges the degree of monetary policy sovereignty of open economies. However, there is less direct empirical evidence on this issue, particularly from the perspective of EMEs. This paper aims to fill this gap in the literature by employing panel local projections as in Jordà (2005) to estimate impulse responses of key macroeconomic variables to monetary policy shocks in 24 EMEs, conditioning on a set of global factors, including the US monetary policy stance, global financial market uncertainty, and global climate change.

To overcome potential endogeneity concerns, we estimate a series of identified monetary policy shocks for each of the 24 EMEs. Using a set of structural vector autoregressive (VAR) models, we orthogonalize short-term interest rate changes against the central bank's responses to current and past macroeconomic conditions by assuming a Taylor-type rule to extract the exogenous component. The estimated residuals therefore can be regarded as exogenous monetary policy shocks, and the basis for the impulse response function analysis. We estimate the responses of key macroeconomic variables to the identified monetary policy shocks and find that industrial production and inflation rate decrease after a monetary policy

tightening. These textbook results suggest the validity of our monetary policy shock identification.

To investigate whether adverse global shocks have a dampening effect on the transmission of monetary policy in EMEs, we estimate impulse responses to monetary policy shocks, conditioning on these global factors. The estimated results show that adverse global shocks, namely a tighter US monetary policy stance, higher global financial market uncertainty, and global climate change, could dampen the transmission of monetary policy in EMEs. Specifically, the overall responses of industrial production and inflation to the monetary policy shocks are more muted compared to the case where the impacts of global factors are isolated. These results are robust to a set of sensitivity checks, including alternative monetary policy measures.

We also study whether economy-specific characteristics across EMEs could affect monetary policy transmission against the impact of global shocks. The results suggest that a higher level of financial development can partially offset the dampening effects of global shocks while a higher degree of capital account openness and trade openness may further amplify the impact of global shocks.

Overall, the estimated impulse responses of monetary policy shocks suggest that adverse global shocks impair the effectiveness of monetary policy transmission in EMEs and the magnitude of these adverse impacts can vary across different economy-specific characteristics. Therefore, policymakers need to be aware that global shocks can make monetary policies less effective and need to ensure that global and external factors are adequately taken into account in monetary policy decision making. Policymakers could also strengthen macroprudential regulations aimed at buttressing financial stability, which would also help to mitigate the impact of global financial shocks on economic activity in EMEs.

This paper contributes to several strands of the literature. First, it is related to recent studies on the effectiveness of monetary policy transmission in developing and emerging market

economies. Several studies have highlighted the role of financial development and monetary regimes in the effectiveness of monetary policy transmission (e.g., Mishra, Montiel, and Spilimbergo 2012; Bulir and Vlcek 2021). Some studies highlight the increasing prominence of the exchange rate channel in monetary policy transmission (e.g., Eklou 2023; Brandão-Marques et al. 2020; Gadanecz, Miyajima, and Urban 2014). Other studies argue that the monetary policy transmission in EMEs could be impaired through a disconnect between policy rates and short-term market rates (e.g., De Leo, Gopinath, and Kalemli-Ozcan 2022).

Second, this paper complements a few but growing studies on the role of global factors in monetary policy transmission. By investigating the relationship between global forces and key macroeconomic variables over the 1984–2005 period, Boivin and Giannoni (2008) find no evidence of a change in the US monetary policy transmission due to global forces. However, Ha et al. (2020) find that movements in global factors play a major role in explaining domestic business cycles in G-7 countries. De Leo, Gopinath, and Kalemli-Ozcan (2022) show that global financial conditions could cause a disconnect between policy rates and short-term market rates in emerging economies. Some studies show that the transmission of global shocks depends on individual economies' macroeconomic policies and the degree of global trade and financial integration (e.g., Bräuning and Sheremirov 2023, Ehrmann and Fratzscher 2009). Eklou (2023) finds that global monetary policy tightening could complement domestic efforts to achieve price stability by inducing global disinflation. Ramos-Francia and Garcia-Verdu (2014) find mixed evidence on the role of global factors that the possibility of structural change in the policy rate, exchange rate, and long-term interest rate channels generally depends on the EME in question. Gadanecz, Miyajima, and Urban (2014) argue that easy monetary conditions in advanced economies have played an important role in determining domestic monetary conditions in EMEs.

The remainder of this paper is structured as follows. Section 2 describes the data and outlines the empirical methodology. Section 3 presents the empirical results with robustness checks and extensions. Section 5 concludes.

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2. Data and Empirical Methodology

In this section, we first describe the data source of variables we use in the empirical analysis. We then discuss the identification of the monetary policy shocks. Finally, we present our econometric framework used to produce the empirical results.

2.1 Data

We use available monthly data with an unbalanced panel for 24 EMEs spanning from 2000:M1 to 2022:M12. To analyze the monetary policy transmission in EMEs, we consider the following variables to reflect a standard theoretical setup. We collect data on the real industrial production index as a domestic output measure, the year-on-year change of the consumer price index as a measure of the inflation rate, the real effective exchange rate as the exchange rate measure, and the 3-month interbank rate as the short-term rate measure.² The data are all from the International Financial Statistics of the International Monetary Fund (IMF) and the Bank for International Settlements (BIS) database.

For global factor variables, we use data from a variety of sources. We use the shadow policy rate proposed by Wu and Xia (2016) as a measure of the US monetary policy stance, which reasonably reflects both conventional and unconventional monetary policy regimes. We use the VIX index that stands for the Chicago Board Options Exchange (CBOE) Volatility Index, as a measure of global financial market uncertainty. To measure global climate change, we use the year-on-year growth rate of monthly atmospheric carbon dioxide concentrations, obtained from the National Oceanic and Atmospheric Association Global Monitoring Laboratory.

¹ The selected EMEs include Argentina; Brazil; Chile; Colombia; Czech Republic; Egypt; Hong Kong, China; Hungary; Indonesia; India; Israel; Mexico; Malaysia; the People's Republic of China; Peru; the Philippines; Poland; the Republic of Korea; Romania; the Russian Federation; Singapore; Thailand; Türkiye; and South Africa. The data starting year for a specific variable varies across economies due to the data availability and reliability.

² As most central banks are aiming with their open market operations to closely align a specific short-term interest rate with their monetary policy stance.