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The Performance of Emerging Markets During The Fed's Easing and Tightening Cycles: A Cross-Country Resilience Analysis

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ABSTRACT

We investigate the determinants of emerging markets performance during five U.S. Federal Reserve monetary tightening and easing cycles during 2004–2023. We study how macroeconomic and institutional conditions of an Emerging Market (EM) at the beginning of a cycle explain EM resilience during each cycle. More specifically, our baseline cross-sectional regressions examine how those conditions affect three measures of resilience, namely bilateral exchange rate against the USD, exchange rate market pressure, and country-specific Morgan Stanley Capital International index (MSCI). We then stack the five cross-sections to build a panel database to investigate potential asymmetry between tightening versus easing cycles. Our evidence indicates that macroeconomic and institutional variables are associated with EM performance, determinants of resilience differ during tightening versus easing cycles, and institutions matter more during difficult times. Our specific findings are largely consistent with economic intuition. For instance, we find that current account balance, international reserves, and inflation are all important determinants of EM resilience.

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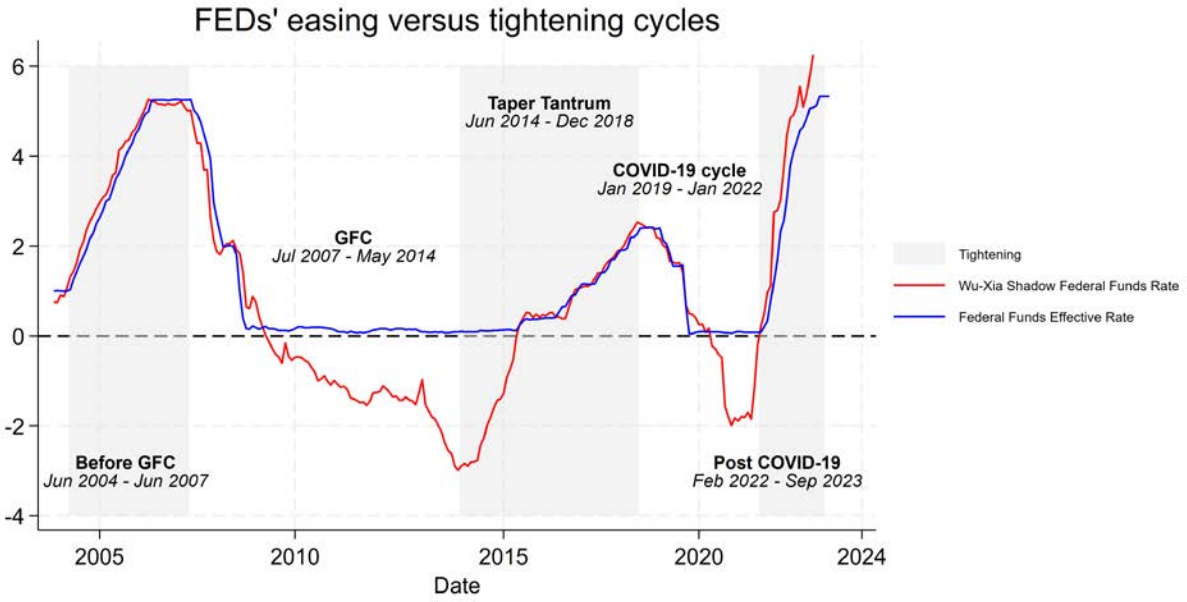
1. Introduction

The Global Financial Crisis (GFC) terminated the illusive Great Moderation (Blanchard et al. (2010)), which was followed by the U.S. Federal Reserve's alternating tightening and easing cycles shown in Figure 1. Seven years of easing induced by the GFC (2007-2014) was followed by four and a half years of tightening ('Taper Tantrum' years). Subsequently, three years of easing induced by the Covid-19 pandemic (2019-2022) led to a major tightening since February 2022, a delayed reaction to rapidly rising inflation in the US.

The VAR analysis of Rey (2015) vividly illustrated that U.S. monetary policy was a key driver of global financial cycles that affecting the leverage of global banks, capital flows, and credit growth in the international financial system. Consequently, the global financial cycles propagated by U.S. shocks and policies constrained the policy options of financially integrated countries. Emerging markets in particular were exposed to 'flight to quality' at times of heightened financial instability and 'search for yields' when the U.S. Fed's massive monetary easing in response to GFC pushed the shadow Federal Funds rates toward zero (see Bernanke and Reinhart (2004), Wu and Xia (2016)).

Figure 1. Monetary cycles in the US, 2004 - 2023



Source: data retrieved from https://www.atlantafed.org/cqer/research/wu-xia-shadow-federal-funds-rate.

From the perspective of most emerging markets (EMs) and developing countries, global financial cycles are exogenous shocks that test their resilience. Our paper investigates the determinants of the relative performance of emerging markets during the Fed's monetary tightening-easing cycles during the past two decades. To answer these questions, we investigate how

macroeconomic conditions at the outset of each cycle influence the relative performance of emerging countries. Do *ex-ante* macroeconomic fundamentals explain why some EMs are more resilient than others during monetary cycles? Our baseline cross-sectional regressions examine how macroeconomic variables affect three measures of resilience, namely bilateral exchange rate against the USD, exchange rate market pressure (EMP) (Goldberg and Krogstrup, 2023), and country-specific Morgan Stanley Capital International index (MSCI). We also include institutional factors as additional determinants of EM resilience.

We contribute to the empirical literature on EM performance in the face of U.S. monetary shocks in a number of different ways. First, our selected time period allows us to better identify determinants of EM resilience because it contains big shocks such as GFC, Taper Tantrum, and Covid-19 pandemic and sharp swings in the Fed's monetary policy. Second, we perform a comparative analysis of the determinants of EM resilience during the Fed's tightening versus easing cycles. There is no a priori reason why the determinants should be the same between the two different types of monetary policy cycles. Third, we take a deep dive into the potential link between institutions and resilience. Intuitively, sound institutions such as good governance should contribute to resilience.

Our empirical analysis yields a number of interesting findings. The current account balance is an important determinant of EMP during monetary cycles. Countries with more flexible exchange rate regimes and more developed financial markets experience lower exchange rate market pressures. Less corrupt countries experienced lower exchange rate market pressure in two out of five cycles. Countries with higher inflation experienced appreciation of their MSCI indexes in three out of five cycles. This was not the case during the GFC and Taper Tantrum. Larger current account surpluses and international reserves were associated with greater MSCI index appreciation during the three last cycles. During the GFC cycle, larger Net International Investment Positions (NIIP) were associated with better stock market performance. A combination of higher international reserves, higher current account surpluses, and larger net international investment positions helps emerging countries cope better with exchange market pressures, especially during tightening.

Financial institution development was associated with inferior performance during the first two tightening cycles - before the GFC and the Taper Tantrum. This is in line with the conjecture that financially more developed countries were more subject to capital outflows due to 'flight to safety'. Countries with less religious tensions saw their financial markets perform better during the "Taper Tantrum" cycle. Countries with fewer internal conflicts and stronger law and order suffered a more significant stock market decline during the GFC cycle. A possible interpretation is that greater trust in institutions led to a higher appreciation of stock markets during the Great Moderation. We can similarly explain why countries with better governance experienced worse stock market performance during the tightening before GFC. Countries with better democratic accountability, lower religious tensions, and stronger law and order performed better during the easing cycle triggered by the COVID-19 pandemic.

We organize this paper as follows: section 2 reviews the literature. Sections 3 and 4 present the empirical methodology and results, respectively. Section 5 concludes.

2. Literature review

Previous literature has examined the impact of U.S. Federal Reserve's monetary policy on emerging market (EM) macroeconomic dynamics. Existing studies also sought to identify the characteristics that explain why the impact of such shocks varies across EMs. For example, Caldara et al. (2023) show that episodes of global tightening are associated with larger economic downturns, worse financial conditions, and a relatively muted decline in inflation. Ahmed et al. (2023) study the role of FX reserves in buffering the exchange rate against the US dollar during the 2021-22 Federal Reserve monetary policy tightening. They distinguish between mechanisms through which FX reserves mitigate currency depreciation. A 'balance sheet' channel implies that strong fundamentals linked with large reserves reduce currency risk even without using these reserves to intervene. Alternatively, the 'intervention' channel suggests that large reserve countries can directly intervene to protect their currencies against depreciation.[1] Similarly, Georgiadis et al. (2024) investigate the role in the transmission of global risk to the world economy. They show that global risk shocks appreciate the dollar, induce tighter global financial conditions, and a synchronized contraction of global economic activity. Walerych and Wesołowski (2021) find that the EM spillovers from the monetary policies of the Fed and European Central Bank are global.

In terms of country characteristics that affect the transmission of Fed shocks, the literature has primarily focused on EM monetary policy regimes (MPR). In this context, inflation targeting (IT) and exchange rate regimes receive the most attention. Aizenman et al. (2011), for instance, distinguish between group characteristics of the inflation-targeting versus non-targeting EM central banks in emerging markets. They further distinguish between commodity-exporting IT countries from other IT countries. Alvarez and De Gregorio (2014) compare the performance of IT and fixed exchange rates in countries in the context of economic resilience. Fratzscher et al. (2020) include a comprehensive set of policy-side controls, including fiscal rules, exchange rate regimes, and central bank independence (CBI). Ramos-Francia and García-Verdú (2014) examine how external monetary conditions can be a source of risks to monetary and financial stability in EMs and how their central banks should respond to such shocks. They also discuss whether EM currencies can play a more significant international role.

The broader set of country-specific characteristics that drive macroeconomic outcomes must include the economic structure. Ahmed et al. (2017) suggest that financial institutions, depth, and local currency bond markets may play an important role. Their results support the findings in Chapter 2 of the IMF (2014) World Economic Outlook (WEO), which finds that the structures of the investor

[1] Ahmed et al. (2023) focus on the role of international reserve holdings to test the validity of the buffer effect. A larger set of macroeconomic fundamentals is considered in Mishra et al. (2014) and Ahmed et al. (2017), namely: current account balance, fiscal balance, inflation, and foreign exchange reserves.

base and local financial systems matter. Besides financial depth, trade and financial openness also play a major role in transmitting external shocks. The distinction between commodity importers versus exporters also matters, as Aizenman et al. (2011) discussed in the context of different policy regimes.

Finally, another branch of the literature analyzes monetary policy shocks. Hoek et al. (2022) study how US interest rates generate adverse spillovers to EMs. They undertake an event study-type approach around Federal Open Market Committee (FOMC) meetings, and distinguish between two types of shock—i.e. higher rates stemming from stronger US growth versus hikes stemming from hawkish FED policy or inflationary pressures. They find the latter to be more disruptive for EMs with greater macroeconomic and financial vulnerabilities. Following Ahmed et al. (2017), they rank EMs according to seven indicators of vulnerability, namely current account deficit, gross government debt, inflation, change in bank credit to the private sector, the ratio of external debt to exports, foreign exchange reserves, and the ratio of dollar debt net of international reserves to GDP. Ugazio and Xin (2024) study the impact of US monetary policy spillovers, in terms of both policy shock and policy news shock.

3. Methodology and data

3.1. Data

We follow Ahmed et al. (2017) to construct our database for a large sample of industrialized and emerging countries[2] over the different monetary-policy cycles in the US (June 2004-September 2023). On the one hand, we build a database of explained financial variables observed at a monthly frequency, namely the bilateral exchange rate against the USD, the Exchange Rate Market Pressure (EMP) (Goldberg and Krogstrup, 2023), and the country-specific Morgan Stanley Capital International index (MSCI). On the other hand, we collect data for *ex-ante* macroeconomic fundamentals observed at a yearly frequency from the World Bank, the IMF and the BIS (see Appendix A for the details and the complete list). Furthermore, we add a series of *ex-ante* institutional variables at a yearly frequency coming from the International Country Risk Guide database built by the PRS group.

The main *ex-ante* macroeconomic variables are the current account balance (as a percent of GDP), the reserves-to-GDP ratio, the net international investment position (as a percent of GDP), the government net lending/borrowing (as a percent of GDP); the general government gross debt (as a percent of GDP); the consumer price inflation; the fuel exports on total exports; the fuel import on total imports, the financial openness (Chinn-Ito index, see Chinn and Ito, 2006); the financial development subindexes introduced by Svirydzenka (2016); and the exchange rate stability measure

[2] The number of countries is subject to variations in the different samples due to data availability. The largest sample is a cross-section of 65 countries; see Appendix B for more details.

developed by Aizenman et al. (2013). The *ex-ante* institutional variables are the indexes that can be found in the ICRG database. A higher score reflects a better situation regarding country risks, that is, lower risks. We have external conflicts (war, cross-border conflict), internal conflicts (civil war/coup threat, terrorism/political violence, civil disorder, foreign pressures), government stability (government cohesion, legislative strength, popular support), corruption, military in politics, and religious tensions.

The dating of monetary cycles is based on the FED fund rates and the shadow FED funds rates, as mentioned in the introduction. Consequently, the monetary cycles covered by the study are: (a) the FED tightening I: June 2004 to June 2007; (b) the FED easing I: July 2007 to May 2014; (c) the FED tightening II: June 2014 to December 2018; (d) the FED easing II: January 2019 to January 2022; and (e) the FED tightening III: February 2022 to September 2023. In fact, these cycles identify several episodes of financial stress for emerging countries. The first cycle is before the Global Financial Crisis (GFC) and corresponds to when Great Moderation was still the dominant narrative. The second cycle has begun to deal with the GFC. The third cycle is the Taper Tantrum. The fourth cycle is the pandemic cycle. Lastly, the current tightening cycle has been launched to rein in the inflation surge after the COVID-19 pandemic. The names of the variables and the acronyms used in the following tables are fully described in Appendix A.

Table 1 and Figure 1 show that the federal fund's effective rate has increased by about 4 percent in 36 months during the first monetary cycle. Despite this significant tightening, the bilateral exchange rate has shown an average appreciation. The same evolution has been observed for the EMP index, where a negative value corresponds to a weighted combination of three factors: first, an appreciation of the bilateral exchange rate; second, interventions on the FOREX market aimed at limiting the appreciation; and third, a decrease in the policy rate. A negative value for the EMP can be interpreted as a pressure reduction. Before the Global Financial Crisis (GFC), we observed average positive stock market developments.

The second monetary cycle spans the period of the GFC. The extent of the monetary easing was considerable with the FED fund rates at above 5 percent at the beginning of the cycle. The shadow rate was around -3 percent 82 months later (see Figure 1). Episodes of financial stress drive the development of our explained financial variables during the GFC (see Table 1, gray columns). On average, the exchange rate and the EMP registered large depreciations against the US dollar (and the euro for some countries in the EMP index). Developments in the stock market are unsurprisingly adverse on average. We can note that the holding of international reserves has 'bounced back' at the end of the second monetary cycle. During financial stress episodes during the GFC, several emerging countries have used FX interventions to stabilize their exchange rates (Dominguez et al., 2012). In May 2014, the average level of holding of international reserves was 3 points higher than during the previous cycle, with a higher cross-sectional standard deviation.

Table 1. Descriptive statistics during the first cycle (in white) and the second cycle (in gray)

	Obs	Obs	Mean	Mean	Median	Median	SD	SD	Min	Min	Max	Max
Explained variables:												
DXRcycle_1, 2	149	130	-5.73	9.56	-9.84	1.33	13.55	17.94	-48.24	-30.91	49.70	49.21
EMPcycle_1, 2	40	40	-0.71	1.48	-0.79	1.36	2.87	2.56	-6.65	-5.22	6.74	5.60
MSCIcycle_1, 2	47	49	72.69	-9.27	69.72	-8.30	29.92	43.54	24.91	-111.3	171.3	69.90
Explanatory variables:												
CAB	123	116	-0.65	0.13	-1.15	-2.19	8.70	12.46	-27.77	-40.38	37.88	45.59
NIIP	88	90	-0.32	-0.21	-0.30	-0.24	0.64	0.62	-1.77	-1.83	2.46	2.73
Gdeficit	139	123	-1.88	2.56	-2.10	0.20	4.36	8.14	-15.93	-12.51	17.06	31.83
Gdebt	136	122	68.19	46.88	52.59	36.00	68.6	52.80	0	0	600.1	451.0
CPI	131	121	7.17	6.04	4.14	5.15	11.06	5.73	-3.50	-1.40	98.22	53.23
FUELX	117	102	15.36	17.70	2.88	4.65	26.66	28.09	0	0	98.04	99.46
FUELM	126	108	11.73	16.05	11.01	15.75	6.87	8.57	0.54	0.01	34.13	35.04
kaopen	135	115	0.078	0.26	-0.17	-0.17	1.45	1.54	-1.93	-1.93	2.30	2.30
FI	139	120	0.31	0.34	0.25	0.28	0.20	0.21	0.03	0.04	0.95	0.97
FM	139	120	0.16	0.19	0.038	0.037	0.23	0.26	0	0	0.92	0.90
extconf	107	89	10.17	9.93	10.50	10	1.35	1.21	4.88	6	12	12
corruption	107	89	2.42	2.38	2	2	1.07	1.09	1	0.50	5.50	5.50
demoacc	107	89	3.86	4.21	4	4.50	1.61	1.56	0	0	6	6
ethnictens	107	89	3.78	3.93	4	4	1.36	1.20	0.50	1	6	6
govstab	107	89	8.86	8.52	9	8.50	1.42	1.59	5.04	5.33	11.50	11.50
intconf	107	89	9.28	9.31	9.42	9.50	1.75	1.64	3.46	3	12	12
laworder	107	89	3.48	3.59	3.50	3.50	1.43	1.23	1	1.29	6	6
milpol	107	89	3.66	3.85	4	4	1.81	1.59	0	0	6	6
reltensions	107	89	4.46	4.62	5	5	1.46	1.33	0	1	6	6
ers	137	118	0.50	0.57	0.46	0.53	0.26	0.25	0.09	0.15	1	1
RESGDP	129	112	17.00	20.60	13.74	16.40	15.57	17.29	0.99	2.12	98.35	98.66
IT	148	129	0.13	0.19	0	0	0.34	0.40	0	0	1	1

Note: We restricted the sample to changes in the bilateral exchange rate between -50% (appreciation) and 50% (depreciation). We use the delta log for the bilateral exchange rates and the MSCI indexes, and the delta for the EMP. We exclude countries with zero exchange rate variation during the period. Statistics for explanatory variables are only displayed for samples in which bilateral exchange rates are used. Source: authors' calculations.

In the third monetary cycle, called the "Taper Tantrum", the shadow rate increases from around -3 percent to above 2.5 percent in 54 months. During this second tightening cycle, we can observe that the average exchange rate depreciation is around 20% and the minimum value (the maximum appreciation) is below 2 percent (see Table 2). This means that virtually no currencies had appreciated against the US dollar during the Taper Tantrum. As shown by Miranda-Agrippino and Rey (2020), US monetary policy shocks can trigger comovements in financial variables that could characterize a 'Global Financial Cycle'.[3] Additionally, the EMP experienced lower variations than the bilateral exchange rates. The developments in the financial market were less dynamic than in the first cycle. On average, the level of international reserves is now 4 points higher compared to the end of the previous cycle.

[3] As noted by Aboud et al. (2024), Chinn et al. (2024) and Goldberg and Hannaoui (2024), the international role of the US dollar has become more important after the GFC, and this trend should persist during the next years.

Table 2. Descriptive statistics during the third cycle (in white) and the fourth cycle (in gray).

	Obs	Obs	Mean	Mean	Median	Median	SD	SD	Min	Min	Max	Max
Explained variables:												
DXRcycle_3, 4	117	126	19.12	5.86	17.73	1.11	10.98	9.97	-1.97	-16.24	49.46	39.15
EMPcycle_3, 4	38	36	0.36	2.76	-0.04	2.45	3.12	3.18	-5.75	-2.57	6.51	9.75
MSCIcycle_3, 4	49	50	7.98	19.51	7.53	23.34	21.20	28.03	-35.08	-52.13	71.18	74.04
Explanatory variables:												
CAB	108	116	-2.63	-2.53	-3.98	-2.94	11.66	9.10	-37.61	-31.83	48.58	39.15
NIIP	90	104	-0.17	-0.23	-0.27	-0.36	0.87	1.01	-3.85	-3.652	3.79	5.43
Gdeficit	113	122	-1.65	-1.34	-2.26	-1.88	5.89	4.75	-16.30	-9.54	33.78	32.15
Gdebt	112	122	44.77	50.54	39.51	46.38	35.88	28.43	0	0	232.4	232.4
CPI	111	116	4.11	3.68	2.95	2.83	4.30	3.68	-4.30	-2.82	36.60	23.56
FUELX	99	104	14.78	14.17	3.60	3.91	24.21	22.20	0	0	99.80	95.56
FUELM	101	108	18.76	14.79	19.04	14.52	9.42	7.49	0.69	0.58	51.05	33.19
kaopen	104	116	0.18	0.19	-0.17	-0.17	1.58	1.52	-1.93	-1.93	2.30	2.30
FI	109	119	0.40	0.42	0.36	0.40	0.22	0.22	0.08	0.08	1	0.97
FM	109	119	0.18	0.19	0.047	0.070	0.25	0.25	0	0	0.87	0.92
extconf	77	85	9.76	9.72	9.92	9.50	1.10	1.05	5.63	6.50	11.50	11.50
corruption	77	85	2.57	2.65	2	2.38	1.21	1.15	1	1	5.50	5.50
demoacc	77	85	4.08	4.12	4	4	1.47	1.36	0.50	0.50	6	6
ethnictens	77	85	3.86	3.91	4	4	1.21	1.13	1	1	6	6
govstab	77	85	7.18	7.15	6.96	6.96	1.25	0.83	4.88	5.83	10.88	9.50
intconf	77	85	8.86	8.87	8.88	8.88	1.48	1.29	5.50	6.21	12	12
laworder	77	85	3.54	3.45	3.50	3	1.26	1.21	1.50	1.50	6	6
milpol	77	85	3.72	3.77	4	4	1.73	1.56	0	0	6	6
reltensions	77	85	4.50	4.50	5	5	1.40	1.38	1	1	6	6
ers	107	116	0.53	0.54	0.46	0.46	0.23	0.24	0.05	0.14	1	1
RESGDP	101	112	24.38	21.06	18.78	18.01	22.02	17.51	1.99	0.37	152.9	117.4
IT	116	125	0.28	0.30	0	0	0.45	0.46	0	0	1	1

Note: We restricted the sample to changes in the bilateral exchange rate between -50% (appreciation) and 50% (depreciation). We use the delta log for the bilateral exchange rates and the MSCI indexes, and the delta for the EMP. We exclude countries with zero exchange rate variation during the period. Statistics for explanatory variables are only displayed for samples in which bilateral exchange rates are used. Source: authors' calculations.

The fourth monetary cycle mainly overlaps the Pandemic crisis. At the beginning of this easing cycle, the FED Fund rate was equal to 2.4 percent and below 0.1 percent 36 months later. The descriptive statistics show that the fourth monetary cycle differs from the previous economic cycles. The episodes of financial stress during this period were explained by uncertainty related to the COVID-19 pandemic. In addition, several countries implemented fiscal packages and dollar swap lines to cope with financial turmoil[4]. The variation in bilateral exchange rates and the EMP was quite

[4] Aizenman et al. (2011) have shown that international reserves holding, and swap lines may be complements rather than substitutes. Choi et al. (2022) describe how the new FIMA Repo Facility has extended access to dollar liquidity during the pandemic.

similar to that observed in the second cycle (GFC). However, the developments in the stock markets were different from during the GFC cycle, with a positive evolution on average (see Table 2).

Table 3. Descriptive statistics during the fifth cycle

	Observations	Mean	Median	SD	Minimum	Maximum
Explained variables:						
DXRcycle_5	106	7.54	5.98	9.86	-21.60	46.68
MSCIcycle_5	50	-1.37	-3.59	25.95	-40.92	126.7
Explanatory variables:						
CAB	93	-2.42	-2.53	8.99	-40.40	25.43
NIIP	88	-0.16	-0.33	1.29	-3.83	5.74
Gdeficit	102	-3.89	-4.57	5.86	-16.42	40.07
Gdebt	102	60.39	55.80	34.30	0	255.1
CPI	96	4.35	3.84	3.87	-0.77	25.75
FUELX	86	13.04	2.95	21.53	0	94.63
FUELM	90	13.28	13.08	8.49	0.51	66.42
kaopen	97	0.18	-0.17	1.52	-1.93	2.30
FI	100	0.45	0.44	0.21	0.082	0.96
FM	100	0.20	0.056	0.27	0	0.92
extconf	71	9.80	10	0.99	7	11.50
corruption	71	2.77	2.50	1.16	1	6
demoacc	71	4.18	4.50	1.41	0.50	6
ethnictens	71	3.93	4	1.10	2	6
govstab	71	7.05	6.92	1.01	4.71	10
intconf	71	9.07	9.21	1.35	6.08	11.96
laworder	71	3.56	3.46	1.13	1.50	6
milpol	71	3.95	4	1.46	1	6
reltensions	71	4.60	5	1.210	1.50	6
RESGDP	88	28.22	24.04	23.61	0.37	134.6
IT	105	0.33	0	0.47	0	1

Note: we restrict the sample for changes in the bilateral exchange rate between -50% (appreciation) and 50% (depreciation). We use the delta log for the bilateral exchange rates and the MSCI indexes, and the delta for the EMP. We removed countries with zero exchange rate variation during the period. Statistics for explanatory variables are only displayed for samples in which bilateral exchange rates are used. The EMP data are not available for the entire period during the fifth cycle. Source: authors' calculations.

During the last monetary cycle of our study in Table 3, the FED fund rates moved from nearly zero in February 2022 to more than 5 percent at the end of our sample in September 2023. During this monetary cycle, the bilateral exchange rate against the dollar depreciated in most economies, averaging 7 percent. Ahmed et al. (2023) showed that countries with more *ex-ante* international reserves have limited their depreciation rate[5]. The average level of international reserves is now at 28 percent. This may partially indicate that countries continuously accumulate reserves to buffer the shocks of external finance (Aizenman et al., 2024). We will come back later on this point in the empirical results section. The developments in the financial markets were not similar to those of previous cycles, with almost no variation on average of the MSCI indexes.

[5] Coulibaly et al. (2024) confirm the buffer effect of international reserve holdings on the exchange rate and public debt for 54 African countries. Exposure to the 'Belt and Road initiative' will be explored when more comprehensive data will be available on public debt for African economies. Recently, China has become "an international lender of last resort" as shown by Horn et al. (2023).

3.2. Methodology

We will use first cross-sectional regressions where the explanatory variables would be fundamentals observed before the events, and the left-hand variable would be the performance of the financial variable of interest over the monetary cycle:

$$\Delta FinVar = c + \sum_j \beta_j X_{i,j} + \varepsilon_i$$

where each i denotes a particular country. We use multiple financial indicators to build the dependent variable in alternative specifications, with the change in each indicator represented by Δ measuring financial performance during the monetary cycle. $X_{i,j}$ are a set of explanatory variables, j specific to country i measured in **the year prior to the monetary cycle**, β_j are parameters to be estimated, and ε_i are error terms. Note that the cross-section observations in each regression are the countries, and a separate regression is run for each dependent variable and each subset of explanatory variables j.

Following Ahmed, Coulibaly, and Zlate (2017), we analyze economic performance on a cross-sectional basis and include the **initial macroeconomic and institutional conditions** at the beginning of each cycle. Possible candidates for the initial conditions include stock variables, including the ratio of initial international reserves to GDP, public debt in local currency / foreign currency as a percentage of GDP, private debt as a percentage of GDP, and other variables.

In the spirit of Alvarez and De Gregorio (2014), we will examine the changing patterns of resilience, comparing the performance of IT and fixed exchange rates in countries[6]. Examining the heterogeneity of the performance of emerging countries during these monetary cycles can help policymakers build policy space to cope with future cycles. We will identify the asymmetries during monetary easing and monetary tightening. These asymmetries may provide useful information to policy-makers about excessive leverage during monetary easing, since monetary easing associated with underregulated leverage growth may increase macroeconomic vulnerability in the next cycle.

4. Empirical results

4.1. Baseline regressions

Tables 4 to 9 present the results of the cross-sectional regression for the bilateral exchange rate

[6] A natural extension will be to control for crisis dummies, as in Leaven and Valencia (2020), and for the history of crises (possibly by discounting past crises, in line with the diminishing effects of more distant crises relative to the more recent crises).

variation, the variation of the EMP indexes and the MSCI indexes variation, respectively, during the different monetary cycles[7]. As explained in Subsection 3.2, main our objective is to explain the difference in the cross-country performance and resilience during monetary cycles, and especially tightenings, according to *ex-ante* macroeconomic fundamentals and *ex-ante* institutional variables. We may briefly recall identifying several key determinants of economic performance, and resilience will help us to provide sound policy recommendations to cope with international financial spillovers. In Table 4, we have the full specification of the macroeconomic and institutional determinants of economic performance. Furthermore, we use a stepwise backward stepwise selection with a threshold value of 20% for the p-value in Table 5. We can observe that the explanatory power ranges from 41% to 68% according to the R-squared values throughout Tables 4 and 5.

We can note that the negative coefficient on the international reserves holding indicates that the buffer effect of international reserves holding is confirmed for three cycles out of five. This finding generalizes the results of Ahmed et al. (2023) and is in line with those of Aizenman et al. (2024). The holding of international reserves has stabilization properties on the exchange rate through both the balance sheet channel and the intervention channel. Indeed, Ahmed et al. (2023) show that currency interventions were associated with less exchange depreciation when the *ex-ante* stock of high reserve was high during the fifth cycle. Furthermore, countries with higher values for *ex-ante* consumer price inflation have experienced larger depreciation rates during three cycles out of five. In light of purchasing power parity (PPP) theory, these last results may reveal that the exchange rate depreciation follows the price differentials over the medium run.

According to Rose (2020), the success of the inflation-targeting regime was explained by its performance in terms of resilience to external finance shocks and, especially in terms of limiting the risk of currency crisis. Obviously, as Rose recalled, a country cannot be forced to quit an inflation-targeting regime contrary to a fixed-exchange rate regime. As mentioned by Aizenman et al. (2011), emerging countries have followed a mixed strategy for their nominal anchor. However, the policy response to exchange rate depreciations to limit imported inflation was more constrained for countries without an inflation-targeting regime. Consistent with these results, before the GFC-induced monetary cycle, being an inflation targeter before entering the cycle was associated with lower exchange rate depreciation.

Two points can be mentioned to assess the respective influence of inflation targeting during these monetary cycles. The first one is the distinction between *de jure* inflation targeters and *de facto* inflation targeters. Indeed, this distinction may be crucial as some countries declare to be inflation targeters, but constantly miss the inflation target, Turkey being a prime example. The second point related to the performance of inflation targeters is the distinction between ‘young’ and ‘old’ inflation targeters. One possible conjecture would be that the dynamics gains in terms of resilience increase

[7] The pairwise correlation between variables is below 50% in almost all cases. In all the regressions, the null hypothesis of normality for the residuals is not rejected at conventional significance levels.

with time and with the credibility of the inflation-targeting regime (‘de jure’ versus ‘de facto’).

Table 4. Cross-sectional regressions for bilateral exchange rate variation

	FED tightening I: June 2004 – June 2007	**FED easing I: July 2007 – May 2014**	**FED tightening II: June 2014 – Dec 2018**	**FED easing II: Jan 2019 – Jan 2022**	**Fed tightening III: Feb 2022 - Sep 2023**
Variables	DXRcycle_1	DXRcycle_2	DXRcycle_3	DXRcycle_4	DXRcycle_5
CAB	-0.0491	-0.5273	0.0136	0.4738	-0.2804
	(0.3527)	(0.3144)	(0.1547)	(0.3245)	(0.3050)
RESGDP	-0.1915	-0.4073*	-0.1300*	0.0018	**-0.1678****
	(0.2430)	(0.2295)	(0.0656)	(0.0836)	**(0.0725)**
NIIP	-1.1563	7.5767	0.6836	0.8957	4.2667*
	(6.8544)	(5.9002)	(2.0270)	(2.9972)	(2.1240)
GDeficit	**1.3754****	0.4080	**-0.9368*****	-0.8932	-0.1079
	(0.5132)	(0.5337)	**(0.3313)**	(0.6850)	(0.5820)
GDebt	0.1168	-0.0080	-0.0644**	-0.0174	0.0029
	(0.0693)	(0.1267)	(0.0297)	(0.0357)	(0.0730)
CPI	**-1.0157****	**2.2739****	1.1370	0.5376	1.0398*
	(0.4351)	**(1.0917)**	(0.7073)	(0.9455)	(0.5615)
FUELX	**-0.3972*****	-0.1280	**0.1581****	0.1182	0.0554
	(0.0981)	(0.1246)	**(0.0610)**	(0.0791)	(0.1007)
FUELM	-0.3648	0.1702	**-0.4457*****	0.3219	0.3254
	(0.2330)	(0.3372)	**(0.1269)**	(0.2140)	(0.3874)
kaopen	0.7338	0.1242	1.5685	-0.9405	-1.3074
	(1.8463)	(2.4704)	(1.3086)	(1.0478)	(1.8299)
ers	0.7903	-0.0464	**-28.9637*****	-15.7212*	-
	(10.3988)	(12.4007)	**(7.6404)**	(8.7798)	-
IT	**-17.4864*****	2.9200	-5.3057	2.0732	-4.5101
	(4.6234)	(8.8328)	(3.4863)	(3.1628)	(3.8294)
FI	-15.1873	-42.7909	-14.2118	-20.3465	-3.9456
	(14.6961)	(26.2050)	(16.1468)	(13.4327)	(19.4381)
FM	13.1264	20.5382	1.4946	4.5167	11.0268
	(8.8948)	(17.6239)	(11.2466)	(10.3034)	(10.6137)
extconf	0.3786	-0.1408	2.4214*	-0.6076	1.5194
	(2.1177)	(2.8750)	(1.2865)	(1.4293)	(2.2957)
corruption	-2.1792	-2.9961	0.3348	0.1313	-0.9060
	(2.1895)	(3.6574)	(1.7957)	(1.9988)	(2.9516)
demoacc	-3.2898*	0.3203	-0.2944	-0.3151	-1.4629
	(1.8045)	(2.9979)	(1.8813)	(1.1534)	(1.6047)
ethnictens	-1.6153	-1.3520	0.9598	0.1180	-0.9540
	(1.7483)	(2.3873)	(1.3244)	(1.3412)	(1.4753)
govstab	-1.1201	3.4935	**2.2261****	-2.1061	0.4353
	(1.4419)	(2.3805)	**(0.8986)**	(2.1042)	(2.4553)
intconf	**-3.6389****	0.4547	-1.2601	**3.7247****	-1.1172
	(1.6633)	(2.5126)	(1.5396)	**(1.5460)**	(2.3078)
laworder	1.2774	1.0166	4.0290*	-1.8976	3.6529
	(2.1212)	(3.1074)	(2.1503)	(1.6117)	(2.4170)
milpol	**5.2856****	4.0691	-2.9054	0.0177	1.6214
	(2.3200)	(3.2339)	(1.8190)	(1.5324)	(1.6667)
reltensions	-0.1242	-1.1499	1.3748	2.1241	-0.5773
	(1.5682)	(2.3884)	(1.2340)	(1.3700)	(1.8601)
Constant	**53.4824****	-17.5125	7.5123	-1.9851	-8.3556
	(26.1837)	(37.7146)	(17.6057)	(25.4320)	(28.1996)
Countries	61	63	58	65	54
R-squared	0.5192	0.4899	0.6790	0.4735	0.4991
RMSE	12.73	17.23	8.614	9.762	10.71

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. Data for the index of exchange rate stability (ers) are not available for the fifth cycle. Bold indicates a significance level below 5%. Source: authors’ calculations.

Table 5. Cross-sectional regressions for the bilateral exchange rate variation - backward stepwise selection

	FED tightening I: 2004 – June 2007	**FED easing I: July 2007 – May 2014**	**FED tightening II: June 2014 – Dec 2018**	**FED easing II: Jan 2019 – Jan 2022**	**Fed tightening III: Feb 2022 - Sep 2023**
Variables	DXRcycle_1	DXRcycle_2	DXRcycle_3	DXRcycle_4	DXRcycle_5
CAB		-0.3738		**0.4898****	
		(0.2285)		**(0.1977)**	
RESGDP		**-0.4075****	**-0.1087****		**-0.1600*****
		(0.1821)	**(0.0431)**		**(0.0572)**
NIIP		6.4131			2.5039*
		(4.6179)			(1.2762)
Gdeficit	**0.9412****		**-0.8511*****	-0.8569	
	(0.3764)		**(0.1704)**	(0.5811)	
Gdebt			-0.0612**		
			(0.0284)		
CPI	**-1.0617*****	**2.6812*****	**1.0046****		**1.0877****
	(0.3166)	**(0.8072)**	**(0.4786)**		**(0.4387)**
FUELX	**-0.2556*****	-0.1390	**0.1687*****	0.1285*	
	(0.0650)	(0.0925)	**(0.0524)**	(0.0748)	
FUELM			**-0.4159*****	0.2806*	
			(0.0993)	(0.1625)	
kaopen			1.3469		**-2.6850****
			(0.9512)		**(1.1547)**
ers			**-27.3594*****	**-17.6173****	-
			(6.6048)	**(7.3684)**	-
IT	**-16.3697*****		-4.9236*		-4.5660
	(3.6481)		(2.8583)		(3.2522)
FI	-11.3020	**-49.2099*****	-13.5700	**-19.5798****	
	(8.4619)	**(14.7421)**	(10.0757)	**(8.1516)**	
FM		**24.8325****			10.0849
		(10.1394)			(6.1635)
extconf			2.0494*		
			(1.0478)		
govstab		2.6784*	**2.1304*****		
		(1.5746)	**(0.7742)**		
intconf	**-2.9984****			**2.4470****	
	(1.3623)			**(1.0436)**	
laworder			**4.2115****	-1.7746	**3.3111****
			(1.6513)	(1.1315)	**(1.4346)**
milpol	2.5130	3.8811*	**-3.2809****		
	(1.5286)	(2.1165)	**(1.3117)**		
reltensions			1.3420	2.2711*	
			(0.9919)	(1.3185)	
Constant	**30.0433*****	-17.7384	3.4317	-9.1127	-4.5227
	(11.2073)	(15.0958)	(13.7423)	(11.3732)	(6.9015)
Countries	61	63	58	65	54
R-squared	0.4109	0.4561	0.6653	0.4295	0.4362
RMSE	11.93	15.45	8.029	8.880	9.474

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. Variables with p-values above 20% are sequentially removed from the model from the highest to the lowest p-value. Data for the index of exchange rate stability (ers) are not available for the fifth cycle. Bold indicates a significance level below 5%. Source: authors' calculations.

In light of this possible complementarity between inflation-targeting regimes and fixed-exchange rate regimes (Aizenman et al., 2011), we can note that less flexible exchange rate regimes played an important role during the Taper tantrum and the Pandemic monetary cycles. Indeed, we found that the exchange rate depreciation was more limited in countries with higher *ex-ante* exchange rate stability[8]. This empirical evidence shows that the relative merits of inflation-targeting and flexible exchange rate regimes vary over time. The stabilizing properties of these different regimes may evolve over the different monetary cycles. We may also suspect the presence of non-linearities.

Tables 6 and 7 show that the explanatory power for EMP regression ranges from 30 percent to 80 percent[9]. The EMP index considers the interdependence between bilateral exchange rates, foreign exchange intervention, and policy rate changes. As fully described by Goldberg and Krogstrup (2022), the EMP index can be seen as a comprehensive exchange rate policy index. The weights for bilateral exchange rates, foreign exchange intervention (FXI), and policy rate changes are framed in a model of supply and demand for foreign currency: "Any given excess supply or demand for a currency - an international capital flow pressure - can be offset by an equivalent amount of FXI, or by an endogenous exchange rate movement or change in the domestic monetary policy rate sufficient to generate an offsetting private balance of payments flow" (Goldberg and Krogstrup, 2022). Consequently, the EMP index can capture dimensions of international financial spillovers other than simple bilateral exchange rates.

We find that the current account balance is now an important determinant of EMP variations during monetary cycles. An *ex-ante* current account surplus can offer more room for maneuvering intervention during the monetary cycle, especially during tightening, to cope with flight-to-quality movements. We observe that countries with less flexible exchange rate regimes and more developed financial markets experience less exchange rate market pressures. In light of the previous discussion on the relative merits of inflation-targeting regimes and less flexible exchange rate regimes, we found that exchange rate stability is associated with fewer exchange rate pressures in three cycles out of five.

For the institutional variables, countries with higher levels of corruption rating (less corruption) experience less exchange rate market pressure in two cycles out of five. The difference between financial institution development and financial market development can provide interesting insights. More developed financial markets help to cope with pressures. Besides, financial institution development is associated with higher pressures. The influence of institutional variables depends on the monetary cycle. There is a larger, significant positive association during the GFC. This may reveal that institutional variables may play a more important role during large recessions and episodes of acute financial stress[10].

[8] The data for the Exchange Rate Stability are not available during the fifth cycle.
[9] The data for the EMP indexes are not available during the fifth cycle.
[10] This may be illustrated by the famous Warren buffet's quote: "A rising tide floats all boats….. only when the tide goes out do you discover who's been swimming naked." The role of institution quality may be hidden during monetary easing. Large episodes of financial and economic stress may reveal the importance of good institutions.

Table 6. Cross-sectional regressions for EMP variation

	FED tightening I: 2004 – June 2007	**FED easing I: July 2007 – May 2014**	**FED tightening II: June 2014 – Dec 2018**	**FED easing II: Jan 2019 – Jan 2022**
Variables	EMPcycle_1	EMPcycle_2	EMPcycle_3	EMPcycle_4
CAB	0.3713*	0.0836	-0.3309*	-0.0282
	(0.1799)	(0.1378)	(0.1796)	(0.3315)
RESGDP	-0.1087*	-0.0498	0.0432	-0.0200
	(0.0515)	(0.0406)	(0.0583)	(0.0568)
NIIP	-0.6710	0.8588	0.6654	-0.0347
	(2.3040)	(1.3172)	(1.4141)	(1.9426)
Gdeficit	0.1481	0.0676	0.5243	0.3575
	(0.2196)	(0.1735)	(0.3412)	(0.4882)
Gdebt	0.0523*	0.0109	-0.0088	0.0094
	(0.0286)	(0.0180)	(0.0214)	(0.0186)
CPI	0.0196	-0.0788	0.2381	-0.0797
	(0.2302)	(0.3778)	(0.3083)	(0.6533)
FUELX	-0.1174*	-0.0146	0.0068	0.0558
	(0.0644)	(0.0509)	(0.0375)	(0.0618)
FUELM	-0.2733*	0.1326	0.0031	-0.0497
	(0.1435)	(0.0773)	(0.1012)	(0.1375)
kaopen	-0.2601	0.3427	-0.8433	-0.2918
	(0.6273)	(0.4036)	(0.8519)	(1.0997)
ers	-7.9386	2.1804	**-11.0477****	-7.5097
	(5.5385)	(1.9166)	**(3.9744)**	(7.2901)
IT	-0.7695	2.7046	-1.3262	-1.8400
	(1.8337)	(2.0800)	(2.4821)	(2.4837)
FI	2.7659	3.7644	**16.8537*****	-1.6193
	(4.6766)	(6.6758)	**(4.7194)**	(9.0615)
FM	-2.9530	-7.7224*	**-9.6606****	1.6901
	(3.7439)	(4.1598)	**(3.2455)**	(6.9718)
extconf	-1.8975*	0.4709	-0.5402	-0.7535
	(0.9725)	(0.7217)	(0.6964)	(0.7241)
corruption	-1.0710*	**-1.8870*****	0.8749	1.1422
	(0.5058)	**(0.5902)**	(0.7300)	(1.5586)
demoacc	-1.5388*	-0.4585	-0.0346	-0.3799
	(0.7871)	(0.7658)	(0.8489)	(0.8327)
ethnictens	0.0110	-0.7467	-0.8244	-0.9144
	(0.4374)	(0.6620)	(0.6758)	(1.1709)
govstab	-1.1928	0.7118	0.1925	-0.8122
	(0.7720)	(0.4753)	(0.8191)	(1.2353)
intconf	-0.2328	-0.6223	-0.2107	0.8274
	(0.4842)	(0.6696)	(0.7020)	(1.1932)
laworder	0.0226	1.5921*	0.4921	-0.7753
	(0.7360)	(0.8698)	(1.1836)	(1.1278)
milpol	1.0047	1.4267*	-0.7600	-0.3786
	(0.5937)	(0.7744)	(1.0975)	(0.9926)
reltensions	-0.6505	0.3890	1.5546*	-0.1687
	(0.5757)	(0.6836)	(0.7969)	(1.0292)
Constant	**47.9931*****	-9.9382	0.2934	21.3171
	(13.2738)	(8.6049)	(12.1105)	(16.8123)
Countries	34	37	36	35
R-squared	0.8169	0.6290	0.7508	0.5238
RMSE	2.297	2.555	2.624	3.703

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. Data for the EMP indexes are not available during the fifth cycle. Bold indicates a significance level below 5%. Source: authors' calculations.

Table 7. Cross-sectional regressions for the EMP variation - backward stepwise selection

	FED tightening I: 2004 – June 2007	**FED easing I: July 2007 – May 2014**	**FED tightening II: June 2014 – Dec 2018**	**FED easing II: Jan 2019 – Jan 2022**
Variables	EMPcycle_1	EMPcycle_2	EMPcycle_3	EMPcycle_4
CAB	**0.2851*** **	**0.1434*** **	**-0.3632*** **	
	(0.0667)	**(0.0499)**	**(0.0956)**	
RESGDP	**-0.0847*** **	**-0.0587* **		
	(0.0224)	**(0.0299)**		
NIIP				
GDeficit			**0.6079*** **	
			(0.1214)	
Gdebt	**0.0424*** **			
	(0.0089)			
CPI			0.2620	
			(0.1874)	
FUELX	**-0.0947*** **			**0.0767*** **
	(0.0246)			**(0.0246)**
FUELM	**-0.2075*** **	**0.1263*** **		
	(0.0526)	**(0.0440)**		
kaopen		0.4880*		
		(0.2723)		
ers	**-5.5121*** **		**-7.8250*** **	**-5.5836*** **
	(1.7070)		**(2.2291)**	**(1.9437)**
IT		1.2110	-2.9149*	
		(0.8609)	(1.5027)	
FI		6.7426*	**15.8086*** **	
		(3.6310)	**(4.7414)**	
FM		**-7.3645*** **	**-5.8688** **	
		(2.0023)	**(2.6826)**	
extconf	**-1.7226*** **	0.9637*		
	(0.4206)	(0.4816)		
corruption	**-0.8996** **	**-1.9404*** **	0.7141	
	(0.3265)	**(0.4672)**	(0.5035)	
demoacc	**-1.3440*** **	-0.9946**		
	(0.2940)	(0.4371)		
ethnictens			-0.5776	
			(0.4167)	
govstab	**-0.8420*** **			
	(0.2482)			
intconf		**-0.9792** **		
		(0.4099)		
laworder		**1.6009*** **		
		(0.5005)		
milpol		**1.3845** **	**-1.1500*** **	
		(0.5294)	**(0.4089)**	
reltensions			**0.9924** **	
			(0.4711)	
Constant	38.5930***	-3.5384	-1.0353	4.1801***
	(7.1478)	(4.0283)	(3.5280)	(1.0513)
Countries	34	37	36	35
R-squared	0.7535	0.5723	0.6972	0.3055
RMSE	1.843	2.140	2.129	2.738

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. Data for the EMP indexes are not available during the fifth cycle. We use a backward stepwise selection procedure for the variables. Variables with p-values above 20% are sequentially removed from the model from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations.

In Tables 8 and 9, we can see that countries with higher levels of CPI inflation have experienced an appreciation of their MSCI indexes in three cycles out of five. This was not the case during the GFC during the Taper tantrum. For countries with larger surpluses in the current account balance and *ex-ante* larger holdings of international reserves, the MSCI indexes have appreciated during the three last cycles. During the second cycle, the GFC cycle, large NIIPs were associated with better performance of their stock markets. In fact, a combination of international reserves, current account surpluses, or positive net international investment positions can help emerging countries cope with stock market pressures, especially during tightening episodes.

The development of financial institutions was associated with inferior performance and resilience during the first two tightenings, namely, before the GFC and the 'Taper Tantrum'. We can conjecture that countries with a higher degree of development in their financial institutions may be subject to a higher movement of mistrust in the financial markets, especially emerging countries that have an intermediate level in development of their financial institutions. Furthermore, the institution's role was vital during the GFC and the "Taper Tantrum" cycle. In addition to the financial institution variable, the institutional variables had some significance. For example, in countries with less religious tensions (i.e., a higher score for the variable relations), their financial markets performed better than other countries during the "Taper Tantrum" cycle.

Furthermore, countries with less internal conflict (i.e., a better score in the intconf variable) and a better score in terms of 'Law and Order' have experienced a more significant decline in their stock market during the GFC cycle[11]. We can also mention that countries with better governance stability have experienced worsened performance on the stock markets over the first cycle, the tightening before the GFC. Finally, countries with better democratic accountability, less religious tensions,[12] and a better score in the variable 'law order' have experienced better performance during the easing cycle induced by the COVID-19 pandemic.

Finally, it could be useful to provide an overview of the results discovered in our research as we run several cross-country regressions for three macro-financial variables. The general findings are as follows in the models with backward stepwise selection tables in Tables 5, 7, and 9. First, cross-country heterogeneity in the *ex-ante* macroeconomic fundamentals and institutional variables has some explanatory power in explaining the differences in the performance and resilience of a large cross-section of emerging countries during the different US monetary cycles. Especially, the relative merits of inflation-targeting regimes and less flexible exchange rate regimes varies over time.

Second, these determinants are asymmetric during tightenings and easings, which may indicate that during tightenings, especially more recent tightenings due to dollar dominance, the resilience of countries is revealed. That being said, the influence of holdings of international reserves, CPI inflation, and current balance are well-defined during several monetary cycles for our three explained variables.

[11] A possible interpretation is that they trusted their institutions more, thereby experiencing a higher appreciation of their stock markets during the great moderation..
[12] At the 10 percent level.

Table 8. Cross-sectional regressions for the MSCI index variation

	FED tightening I: 2004 – June 2007	**FED easing I: July 2007 – May 2014**	**FED tightening II: June 2014 – Dec 2018**	**FED easing II: Jan 2019 – Jan 2022**	**Fed tightening III: Feb 2022 - Sep 2023**
Variables	MSCIcycle_1	MSCIcycle_2	MSCIcycle_3	MSCIcycle_4	MSCIcycle_5
CAB	-1.5820	0.8056	2.1013	**3.7019*** **	1.0069
	(1.4040)	(1.3107)	(1.3733)	**(1.2331)**	(0.7718)
RESGDP	0.3741	-0.0612	0.4494	-0.0333	-0.1468
	(0.3717)	(0.4317)	(0.3894)	(0.2648)	(0.1761)
NIIP	10.4082	16.3796	-4.6400	-3.7179	-2.8632
	(10.4259)	(13.2510)	(10.5847)	(6.4502)	(4.1361)
Gdeficit	-3.3382*	-1.3642	-1.6300	-0.7816	0.6026
	(1.7395)	(1.8981)	(2.0081)	(1.7591)	(1.6115)
Gdebt	-0.2242	**-0.4812** **	0.1510	0.0292	0.1189
	(0.1556)	**(0.2107)**	(0.1210)	(0.1189)	(0.0950)
CPI	-0.8933	2.8022	2.2708	**2.4345** **	4.2375*
	(1.2953)	(3.1401)	(3.0947)	**(1.0917)**	(2.3072)
FUELX	**1.3291** **	0.1400	-0.0975	-0.1458	-0.2567
	(0.5145)	(0.5106)	(0.2609)	(0.2414)	(0.2351)
FUELM	0.5994	0.6406	0.1995	-0.9329	-1.6948
	(0.6636)	(0.8894)	(0.5399)	(0.7679)	(1.4090)
kaopen	3.5950	-4.2378	-8.0831	-11.1031	2.5653
	(4.5324)	(8.0719)	(5.6184)	(8.2217)	(7.0247)
ers	-13.9039	-65.8101	20.8828	25.3125	-
	(23.3277)	(50.5754)	(24.9157)	(27.1327)	-
IT	-27.1232	-12.5068	17.8509	10.3949	15.8783
	(16.1791)	(29.5982)	(13.3204)	(10.7161)	(11.2351)
FI	**-74.7074** **	48.1606	-81.5720	-12.8955	13.0366
	(30.8771)	(59.8687)	(48.9711)	(50.0994)	(49.6860)
FM	4.0190	17.1513	34.0788	25.2255	18.5117
	(33.7413)	(39.5147)	(32.2638)	(39.4681)	(27.6034)
extconf	-0.6651	2.8162	-3.5150	-3.9266	-7.4822
	(5.3965)	(8.1842)	(6.0002)	(4.3807)	(4.5427)
corruption	7.0472	9.4542	12.5971*	0.0223	-1.3282
	(6.9930)	(13.1469)	(6.7760)	(6.1556)	(8.2039)
demoacc	2.2546	0.7758	2.4525	**10.4388** **	0.4003
	(4.0143)	(6.6859)	(5.0544)	**(4.3749)**	(4.6381)
ethnictens	0.2848	-3.0823	-7.2076	-5.0144	1.0482
	(3.8629)	(5.3991)	(6.7450)	(4.8100)	(6.3120)
govstab	-4.7673	-3.6656	**-9.3375** **	4.8019	1.7239
	(4.1416)	(5.9413)	**(4.3344)**	(5.0057)	(5.4592)
intconf	5.2869	-9.5779	8.1230*	1.3874	0.1152
	(5.6058)	(7.8430)	(4.6653)	(5.6830)	(7.1059)
laworder	-8.2732	-10.8152	-2.2657	10.1926	5.7969
	(4.9162)	(10.9675)	(6.8801)	(7.0982)	(9.5584)
milpol	-6.9763	-8.3994	-6.3476	-2.6898	-4.7581
	(5.7237)	(8.8180)	(6.5963)	(5.5903)	(8.2402)
reltensions	3.4724	2.1177	11.1228*	8.2015	-3.6971
	(4.8889)	(5.9553)	(5.7203)	(5.8158)	(5.2910)
Constant	132.2971	152.1266	-14.9999	-99.3836	45.0447
	(76.1744)	(110.4634)	(77.5892)	(77.5544)	(95.1920)
Countries	39	44	45	44	44
R-squared	0.7887	0.7463	0.4452	0.6434	0.5550
RMSE	20.24	31.29	21.86	21.73	23.99

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. Bold indicates a significance level below 5%. Source: authors' calculations.

Table 9. Cross-sectional regressions for the MSCI variation - backward stepwise selection

	FED tightening I: 2004 – June 2007	**FED easing I: July 2007 – May 2014**	**FED tightening II: June 2014 – Dec 2018**	**FED easing II: Jan 2019 – Jan 2022**	**Fed tightening III: Feb 2022 - Sep 2023**
Variables	MSCIcycle_1	MSCIcycle_2	MSCIcycle_3	MSCIcycle_4	MSCIcycle_5
CAB			1.8921*	**2.8357*** **	**1.2139** **
			(1.0894)	**(0.7788)**	**(0.5845)**
RESGDP			**0.3260** **		
			(0.1422)		
NIIP		**20.6097*** **			**-5.2687** **
		(6.3923)			**(2.0591)**
Gdeficit	-1.7817*		-2.0614		
	(0.9319)		(1.3251)		
Gdebt		-0.2482*	0.1373*		0.1341*
		(0.1232)	(0.0756)		(0.0685)
CPI		**4.4311** **		**3.2733*** **	**4.0851** **
		(2.1580)		**(1.0317)**	**(1.7339)**
FUELX	**0.9180** **				-0.2099
	(0.3380)				(0.1550)
FUELM				-0.6456*	-1.6183*
				(0.3752)	(0.8372)
kaopen		-6.3564*	-6.1469	-6.9717*	
		(3.7329)	(3.6632)	(4.0977)	
ers	**-26.2608** **	**-56.5185*** **			
	(11.9296)	**(13.6488)**			
IT	**-22.5462** **		12.8086		**15.1116** **
	(8.9436)		(7.9744)		**(7.3195)**
FI	**-53.1829*** **	43.5014	**-81.3427** **		
	(11.2608)	(28.9008)	**(38.6590)**		
FM			38.4880		22.1271
			(24.8987)		(16.2644)
extconf				-5.1425*	-6.5920*
				(2.5551)	(3.6307)
corruption		8.8498	9.0982*		
		(5.6832)	(4.5822)		
demoacc				**10.7888*** **	
				(2.8209)	
ethnictens			**-8.2838** **		
			(3.7976)		
govstab	**-7.1514** **		**-9.9294*** **		
	(2.8119)		**(2.9244)**		
intconf		**-10.5788** **	6.3844		
		(4.1152)	(3.9500)		
laworder		**-11.1314** **		8.6055*	7.9230
		(5.3443)		(4.5681)	(5.0598)
milpol			-6.5956		-6.1578
			(4.8920)		(5.2053)
reltensions			**10.6281*** **	4.5851*	
			(3.8280)	(2.7031)	
Constant	**179.0449*** **	**122.6686*** **	12.3096	-35.6822	32.7229
	(30.1521)	**(35.2992)**	(26.2127)	(31.9476)	(40.2296)
Countries	39	44	45	44	44
R-squared	0.7201	0.6905	0.3983	0.5541	0.5304
RMSE	16.47	27.16	19.50	18.82	20.43

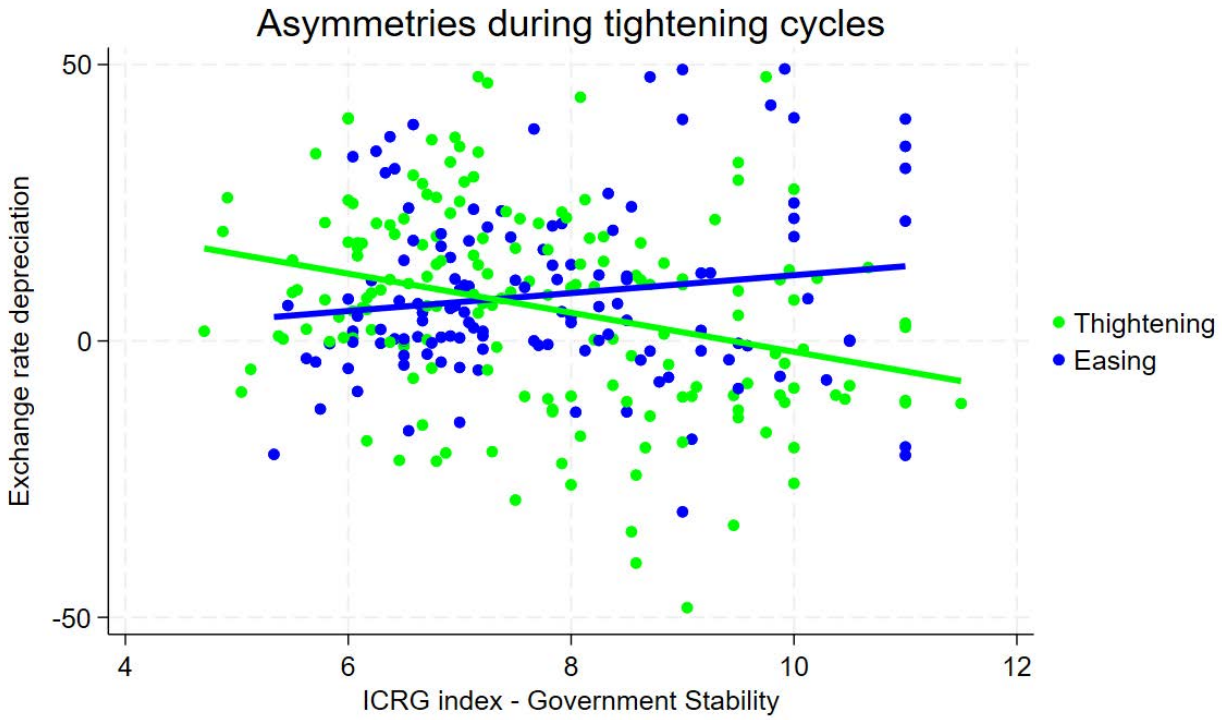
Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations.

Third, the significance of *ex-ante* institutional variables increases during the GFC and the 'Taper Tantrum' monetary cycles, which may indicate that the benefits of having good institutions can only be revealed during difficult times (when the tide is low). This potential asymmetry may be related to the real-time reaction of policy makers in the face of unexpected events. This 'de facto' quality of institutions may be the yardstick on which resillience and performance should be evaluated.

4.2. Panel data regressions

After exploring cross-sectional regressions, we stack the cross-sections to build an unbalanced panel database where the time dimension will be our five cycles, so $T = 5$ or 4 (depending on data availability). We preserve the chronological structure of the data as the US monetary cycles are observed at the same time for all the countries. Thus, we explore the potential asymmetries between monetary cycles. Thanks to dummy variables for tightening and easing episodes. Figures 2 and 3 present graphical evidence showing that the benefit of having a better score in the government stability variable only appears during tightening by limiting exchange rate depreciation and providing an expansion of the stock market.

Figure 2. Asymmetries during tightening cycles for the bilateral exchange rate



Note: with the data sample of Appendix C for the 5 cycles. The score of Government Stability is observed one year before the cycles. Source: authors' calculations.

Tables 10 to 12 provide empirical evidence that confirms our preliminary graphical evidence. The benefit of having better government stability only appears during bad times for the exchange rate and the stock market indexes. For the exchange rate market pressure index, the financial institutions variable is associated with an increase of pressures and democratic accountability is associated with a reduction of pressures, in line with the cross-sectional regressions.

Table 10. Panel evidence for the bilateral exchange rate

	Tightenings	**Easings**
Variables	DXR 4 Cycles	DXR 4 Cycles
CAB	**-0.3295****	-0.3368
	(0.1495)	(0.2073)
tight	**41.9752*****	
	(12.9289)	
c.CAB#c.tight	-0.0072	
	(0.2555)	
kaopen	-1.4127	-1.3132
	(1.0452)	(1.1562)
c.kaopen#c.tight	0.0994	
	(1.5586)	
NIIP	-1.6504	4.8681*
	(1.6844)	(2.5342)
c.NIIP#c.tight	**6.5185****	
	(3.0429)	
FUELM	0.2130	0.4774***
	(0.1689)	(0.1830)
c.FUELM#c.tight	0.2645	
	(0.2491)	
Gdebt	-0.0663	-0.0305
	(0.0491)	(0.0418)
c.GDebt#c.tight	0.0358	
	(0.0645)	
govstab	2.1891*	-4.0505***
	(1.1590)	(0.9436)
c.govstab#c.tight	**-6.2396*****	
	(1.4945)	
Constant	-7.9835	**33.9917*****
	(9.0842)	**(9.1997)**
Countries (max.)	83	83
Observations	247	247
R-squared	0.1989	0.1989
RMSE	16.51	16.51

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations. Only the four first cycles are included, as we use the ers variable in the backward stepwise selection procedure.

Table 11. Panel evidence for Exchange Market Pressure indexes

	Tightenings	**Easings**
Variables	EMP 4 Cycles	EMP 4 Cycles
ers	-2.3539	-2.9106
	(1.7499)	(1.9754)
tight	1.9320	
	(4.9594)	
c.ers#c.tight	-0.5567	
	(2.6389)	
RESGDP	-0.0206	-0.0441*
	(0.0184)	(0.0266)
c.RESGDP#c.tight	-0.0236	
	(0.0323)	
NIIP	0.4262	1.3500
	(0.5967)	(0.9920)
c.NIIP#c.tight	0.9238	
	(1.1576)	
Gdeficit	0.0739	-0.0310
	(0.0764)	(0.1234)
c.GDeficit#c.tight	-0.1049	
	(0.1451)	
demoacc	-0.5104	**-1.0196*** **
	(0.3225)	**(0.3738)**
c.demoacc#c.tight	-0.5093	
	(0.4937)	
FM	-2.6745	-2.9718
	(1.9805)	(2.5208)
c.FM#c.tight	-0.2973	
	(3.2057)	
govstab	-0.0953	-0.3528
	(0.2491)	(0.2339)
c.govstab#c.tight	-0.2574	
	(0.3417)	
FI	3.3818	**5.6219** **
	(2.8110)	**(2.7090)**
c.FI#c.tight	2.2401	
	(3.9039)	
ethnictens	-0.4969	-0.5011
	(0.3301)	(0.3339)
c.ethnictens#c.tight	-0.0042	
	(0.4695)	
Constant	**8.1967*** **	**10.1287** **
	(3.0796)	**(3.8874)**
Countries (max.)	37	37
Observations	142	142
R-squared	0.2657	0.2657
RSME	3.008	3.008

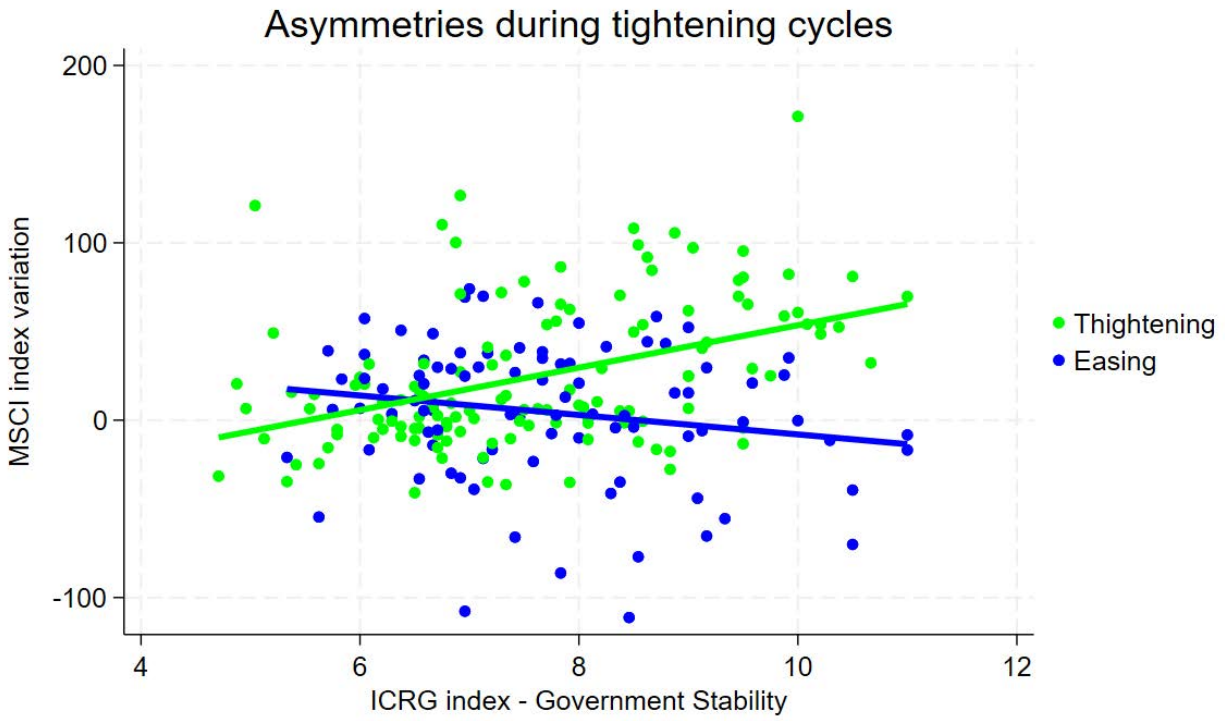
Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations. Only the four first cycles are included due to missing data for EMP.

Table 12. Panel evidence for MSCI indexes

	Tightenings	**Easings**
Variables	MSCI 4 Cycles	MSCI 4 Cyles
CAB	**1.4598****	0.7739
	(0.7006)	(0.6057)
tight	-30.0741	
	(37.9127)	
c.CAB#c.tight	-0.6859	
	(0.9262)	
FUELM	-0.0846	**-1.6007*****
	(0.6675)	**(0.4906)**
c.FUELM#c.tight	-1.5160*	
	(0.8284)	
FI	-27.7682	**-78.4734*****
	(23.6623)	**(22.0292)**
c.FI#c.tight	-50.7052	
	(32.3294)	
Gdeficit	-1.8118	**-2.2064*****
	(1.3384)	**(0.7742)**
c.GDeficit#c.tight	-0.3946	
	(1.5462)	
govstab	-5.5716*	**9.2714*****
	(2.9149)	**(2.2233)**
c.govstab#c.tight	**14.8430*****	
	(3.6661)	
corruption	6.1084	2.4394
	(4.9762)	(3.1911)
c.corruption#c.tight	-3.6690	
	(5.9115)	
ers	**-34.5878****	-12.2621
	(15.0331)	(12.0133)
c.ers#c.tight	22.3256	
	(19.2435)	
Constant	**59.3109****	29.2368
	(27.1966)	(26.4144)
Countries (max.)	46	46
Observations	172	172
R-squared	0.4157	0.4157
RMSE	34.78	34.78

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations. Only the four first cycles are included, as we use the ers variable in the backward stepwise selection procedure.

Figure 3. Asymmetries during tightening cycles for the MSCI index



Note: with the data sample of Appendix D for the 5 cycles. The score of Government Stability is observed one year before the cycles.
Source: authors' calculations.

4.3. Robustness checks

In Appendix E, we present several robustness check results where we pooled all the cycles (column 1), pooled the tightening cycles (column 2), pooled the easing cycles (column 3), assumed a homogeneous interaction between tightening cycles and the main explanatory variables (column 4), and assumed a heterogeneous interaction between tightening cycles and the main explanatory variables (column 5) for the bilateral exchange rate in Table E1, and for the MSCI indexes in Table E2. Overall, the results indicate robustness, especially for the asymmetries between government stability during the tightening and easing cycles. Tables E1 and E2 provide us with some insight into the importance of building an institutional framework that helps to enhance resilience and performance during bad times. The initial cross-country position of government stability explains the cross-country performance and resilience of countries during the next monetary cycles. These pieces of evidence show that even if building relevant institutions is difficult and takes time, this may provide long-run benefits and maintain the economy on a sustainable path.

5. Conclusion

The share of the U.S. in global output has steadily declined in recent years. The relative decline of the U.S. in the world economy mirrors the relative decline of advanced economies as a whole and the corresponding rise of emerging markets spearheaded by China. However, despite the relative decline of the U.S. in the real economy, the U.S. dollar still reigns supreme. The dollar still dominates international trade and financial transactions, foreign exchange reserves of central banks, and denomination of oil and other commodities. Furthermore, the dominance looks set to continue into the foreseeable future in light of the increase in global uncertainty in the post-Covid world and the enduring safe haven currency status of the dollar. The unchallenged supremacy of the dollar, combined with the world's largest and most liquid financial markets, means that swings in the U.S. Federal Reserve's monetary policy have an outsized impact on global financial markets. Emerging markets are especially vulnerable to the Fed's tightening and easing cycles. But some emerging markets are more resilient than others. The natural question that arises is, why?

Our empirical analysis of the determinants of emerging-market resilience in response to the Fed's policy delved into five alternating tightening and easing cycles between 2004 and 2023. This time period is ideal to investigate our research question because it contains big shocks such as the global financial crisis, Taper Tantrum, and Covid-19 pandemic, which induced sharp swings in U.S. monetary policy. Cross-country regressions explored the link between *ex-ante* macroeconomic and institutional variables and three measures of resilience, namely bilateral exchange rate against the USD, exchange rate market pressure (EMP) (Goldberg and Krogstrup, 2023), and country-specific Morgan Stanley Capital International index (MSCI). At a broader level, our analysis confirms that *ex-ante* macroeconomic and institutional variables do matter, determinants of resilience differ during U.S. tightening versus easing, and institutional variables gain greater significance during downturns. Our evidence sheds new light on the relative role of various macroeconomic and institutional variables in explaining the resilience of emerging markets in response to the Fed's tightening and easing cycles.

Emerging-market policymakers can infer some policy implications from our specific empirical findings. For instance, we find that international reserves, current account balance, and inflation are all important determinants of performance in response to U.S. monetary policy swings. This reinforces the conventional wisdom that strong fundamentals protect emerging markets. Our study contributes to the literature on emerging-market resilience to U.S. monetary policy by analyzing the behavior of three measures of resilience over a time period which witnessed extended cycles of both tightening and easing. Another contribution is our comparative analysis of emerging-market response to tightening versus easing cycles. Finally, our paper suggests a number of future research directions. For one, we can explore the performance of emerging-market real economy to the tightening and easing cycles of the U.S. Fed. Another idea is to replicate our exercise for the European Central Bank or People's Bank of China. And yet another idea is to explore why some emerging-market central banks follow the Fed's lead more than others? These are just a few examples of related future research.

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Appendix A. Data sources and definitions

Variable	Definition	Source, Identifier
DXRcycle_i	Variation in log of UXR during the monetary cycle "i" in percent	Own calculations based on UXR
MSCIcycle_i	Variation in log of MSCI index during the monetary cycle "i" in percent	Own calculations based MSCI
EMPcycle_i	Variation of EMP index during the monetary cycle "i"	Own calculations based on emp_usd
XR	XR, USD per Domestic Currency, Period Average	IMF, IFS, EDNA_USD_XDC_RATE
UXR	1 USD = UXR Domestic currency, Domestic currency per USD	Computed from XR
EMP	Exchange rate Market Pressures - Goldberg-Krogstrup (2023)	https://www.newyorkfed.org/medialibrary/media/research/economists/goldberg/EMP_index_full.csv
MSCI	MSCI country indexes	https://www.msci.com/index-methodology
CAB	Current Account Balance in % of GDP	World Bank, WDI, BN.CAB.XOKA.GD.ZS
NIIP	net IIP / GDP domestic currency	https://www.brookings.edu/articles/the-external-wealth-of-nations-database/
GDeficit	Gov. Net Lending/Borrowing in % of GDP	IMF, WEO, GGXCNL_NGDP
GDebt	General Gov. Gross Debt in % of GDP	IMF, WEO, GGXWDG_NGDP
CPI	Consumer Price Inflation	World Bank, WDI, FP.CPI.TOTL.ZG
FUELX	Fuel Export on Total Exports	World Bank, WDI, TX.VAL.FUEL.ZS.UN
FUELM	Fuel Import on Total Imports	World Bank, WDI, TM.VAL.FUEL.ZS.UN
kaopen	Chinn-Ito index	https://web.pdx.edu/~ito/Chinn-Ito_website.htm
FI	Financial Institution index	IMF, FDI, FD_FI_IX
FM	Financial Market index	IMF, FDI, FD_FM_IX
extconf	ICRG index - External Conflict	https://www.prsgroup.com/
bureau	ICRG index - Bureaucracy Quality	https://www.prsgroup.com/
corruption	ICRG index - Corruption	https://www.prsgroup.com/
demoacc	ICRG index - Democratic Accountability	https://www.prsgroup.com/
ethnictens	ICRG index - Ethnic Tensions	https://www.prsgroup.com/
govstab	ICRG index - Government Stability	https://www.prsgroup.com/
intconf	ICRG index - Internal Conflict	https://www.prsgroup.com/
laworder	ICRG index - Law and Order	https://www.prsgroup.com/
milpol	ICRG index - Law and Order	https://www.prsgroup.com/
reltensions	ICRG index - Religious Tensions	https://www.prsgroup.com/
ers	Exchange Rate Stability Index	https://web.pdx.edu/~ito/trilemma_indexes.htm
RES	Total reserves minus gold (current US$)	World Bank, WDI, FI.RES.XGLD.CD
CURGDP	GDP (current US$)	World Bank, WDI, NY.GDP.MKTP.CD
RESGDP	Total reserves minus gold (% of GDP)	Own calculations, 100*(RES/CURGDP)
IT	Inflation Targeters	Own elaboration

Appendix B. Composition of the samples in the cross-sectional regressions

Largest sample (65 countries) in the bilateral exchange rate regressions in Tables 6 and 7: United Kingdom, Denmark, Norway, Sweden, Switzerland, Canada, Japan, Iceland, Australia, New Zealand, South Africa, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, Uruguay, Jamaica, Trinidad and Tobago, Israel, Kuwait, Egypt, Hong Kong, India, Indonesia, South Korea, Malaysia, Pakistan, Philippines, Singapore, Thailand, Botswana, Cameroon, Ghana, Kenya, Madagascar, Morocco, Mozambique, Nigeria, Namibia, Tanzania, Tunisia, Uganda, Zambia, Armenia, Belarus, Albania, Kazakhstan, Bulgaria, Moldova, Russia, China, Ukraine, Czech Republic, Hungary, Mongolia, Croatia, Poland, Romania.

Largest sample (37 countries) in the EMP regressions in Tables 8 and 9: United Kingdom, Denmark, Norway, Sweden, Switzerland, Canada, Japan, Australia, New Zealand, South Africa, Bolivia, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, Israel, Jordan, Hong Kong, India, South Korea, Malaysia, Singapore, Thailand, Botswana, Morocco, Tunisia, Armenia, Russia, China, Ukraine, Czech Republic, Hungary, Croatia, Poland, Romania.

Largest sample (45 countries) in the MSCI regressions in Tables 10 and 11: United Kingdom, Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland, Canada, Japan, Finland, Ireland, Portugal, Spain, Turkey, Australia, New Zealand, South Africa, Brazil, Chile, Colombia, Mexico, Peru, Israel, Jordan, Kuwait, Egypt, Sri Lanka, Hong Kong, India, Indonesia, South Korea, Malaysia, Pakistan, Philippines, Singapore, Thailand, Morocco, China, Czech Republic, Hungary, Poland.

Appendix C. Panel evidence for the bilateral exchange during the five cycles

	Tightenings	**Easings**
Variables	DXR 5 cycles	DXR 5 cycles
CAB	**-0.3295****	-0.1635
	(0.1487)	(0.1730)
tight	**34.4543*****	
	(10.9600)	
c.CAB#c.tight	0.1660	
	(0.2281)	
kaopen	-1.4127	-1.3631
	(1.0396)	(0.9381)
c.kaopen#c.tight	0.0496	
	(1.4003)	
NIIP	-1.6504	3.0376*
	(1.6754)	(1.5742)
c.NIIP#c.tight	**4.6880****	
	(2.2990)	
FUELM	0.2130	**0.4813*****
	(0.1680)	**(0.1491)**
c.FUELM#c.tight	0.2683	
	(0.2247)	
GDebt	-0.0663	-0.0132
	(0.0489)	(0.0308)
c.GDebt#c.tight	0.0531	
	(0.0578)	
govstab	2.1891*	**-3.2524*****
	(1.1528)	**(0.7211)**
c.govstab#c.tight	**-5.4415*****	
	(1.3598)	
Constant	-7.9835	**26.4708*****
	(9.0356)	**(6.2031)**
Countries (max)	84	84
Observations	301	301
R-squared	0.1640	0.1640
rmse	15.88	15.88

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations.

Appendix D. Panel evidence for the MSCI indexes during the five cycles

	Tightenings	**Easings**
Variables	MSCI 5 cycles	MSCI 5 cycles
CAB	1.1104	0.1714
	(0.7343)	(0.6082)
tight	-48.8189	
	(38.7173)	
c.CAB#c.tight	-0.9390	
	(0.9535)	
RESGDP	0.1020	**-0.2857****
	(0.1705)	**(0.1144)**
c.RESGDP#c.tight	-0.3877*	
	(0.2053)	
FI	-48.0720	**-76.9205*****
	(32.1093)	**(27.0512)**
c.FI#c.tight	-28.8485	
	(41.9854)	
GDeficit	-1.6081	0.3710
	(1.1956)	(0.8234)
c.GDeficit#c.tight	1.9790	
	(1.4517)	
FM	62.1074*	24.2695
	(33.1691)	(23.2395)
c.FM#c.tight	-37.8379	
	(40.5002)	
IT	14.7739*	7.6210
	(8.8401)	(6.8778)
c.IT#c.tight	-7.1529	
	(11.2005)	
FUELX	-0.0486	-0.2907
	(0.1905)	(0.2468)
c.FUELX#c.tight	-0.2421	
	(0.3118)	
FUELM	-0.1543	-0.7861*
	(0.6673)	(0.4486)
c.FUELM#c.tight	-0.6318	
	(0.8040)	
govstab	**-6.4414****	**11.1605*****
	(3.0182)	**(2.3375)**
c.govstab#c.tight	**17.6019*****	
	(3.8175)	
Constant	39.7995	-9.0194
	(27.9186)	(26.8250)
Countries (max.)	47	47
Observations	220	220
R-squared	0.2897	0.2897
RMSE	36.41	36.41

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations.

Appendix E. Robustness checks

Table E1. Panel evidence for the bilateral exchange during the five cycles

	Pooled	**Pooled tightenings**	**Pooled easing**	**Interaction tightenings**	**Heterogenous**
Variables	DXR 5 cycles	DXR 5 cycles	DXR 5 cycles	DXR 5 cycles	DXR 5 cycles
CAB	-0.2070*	-0.1635	**-0.3295****	**-0.3295****	**-0.3295****
	(0.1173)	(0.1724)	**(0.1493)**	**(0.1487)**	**(0.1492)**
tight				**34.4543*****	10.1814
				(10.9600)	(11.1203)
c.CAB#c.tight				0.1660	0.2323
				(0.2281)	(0.1974)
kaopen	**-1.5105****	-1.3631	-1.4127	-1.4127	-1.4127
	(0.7040)	(0.9352)	(1.0441)	(1.0396)	(1.0432)
c.kaopen#c.tight				0.0496	-0.1175
				(1.4003)	(1.2684)
NIIP	1.7823*	3.0376*	-1.6504	-1.6504	-1.6504
	(1.0167)	(1.5693)	(1.6826)	(1.6754)	(1.6813)
c.NIIP#c.tight				**4.6880****	2.9088
				(2.2990)	(2.0643)
FUELM	**0.4309*****	**0.4813*****	0.2130	0.2130	0.2130
	(0.1120)	**(0.1487)**	(0.1687)	(0.1680)	(0.1686)
c.FUELM#c.tight				0.2683	-0.2120
				(0.2247)	(0.2071)
GDebt	-0.0408	-0.0132	-0.0663	-0.0663	-0.0663
	(0.0288)	(0.0307)	(0.0491)	(0.0489)	(0.0490)
c.GDebt#c.tight				0.0531	0.0729
				(0.0578)	(0.0597)
govstab	**-1.3326****	**-3.2524*****	2.1891*	2.1891*	2.1891*
	(0.6678)	**(0.7189)**	(1.1577)	(1.1528)	(1.1568)
1.time#c.govstab#c.tight					**-3.3217****
					(1.3420)
3.time#c.govstab#c.tight					0.5115
					(1.4324)
5.time#c.govstab#c.tight					-1.2937
					(1.4593)
c.govstab#c.tight				**-5.4415*****	
				(1.3598)	
Constant	**14.5127*****	**26.4708*****	-7.9835	-7.9835	-7.9835
	(5.2905)	**(6.1835)**	(9.0746)	(9.0356)	(9.0672)
Observations	301	173	128	301	301
R-squared	0.0951	0.1702	0.1444	0.1640	0.3726
RMSE	16.33	16.57	14.89	15.88	13.81

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations.

Table E2. Panel evidence for the MSCI indexes during the five cycles

Variables	**Pooled** MSCI 5 cycles	**Pooled tightenings** MSCI 5 cycles	**Pooled easing** MSCI 5 cycles	**Interaction tightenings** MSCI 5 cycles	**Heterogenous** MSCI 5 cycles
CAB	0.9921*	0.1714	1.1104	1.1104	1.1104
	(0.5955)	(0.6036)	(0.7426)	(0.7343)	(0.7380)
tight				-48.8189	14.4724
				(38.7173)	(34.0218)
c.CAB#c.tight				-0.9390	-0.6605
				(0.9535)	(0.8613)
RESGDP	**-0.2220****	**-0.2857****	0.1020	0.1020	0.1020
	(0.1057)	**(0.1135)**	(0.1724)	(0.1705)	(0.1713)
c.RESGDP#c.tight				-0.3877*	-0.1437
				(0.2053)	(0.1882)
FI	**-64.4896*****	**-76.9205*****	-48.0720	-48.0720	-48.0720
	(23.1149)	**(26.8455)**	(32.4722)	(32.1093)	(32.2711)
c.FI#c.tight				-28.8485	-19.2923
				(41.9854)	(39.3283)
GDeficit	-1.3532*	0.3710	-1.6081	-1.6081	-1.6081
	(0.7629)	(0.8172)	(1.2091)	(1.1956)	(1.2016)
c.GDeficit#c.tight				1.9790	0.4655
				(1.4517)	(1.3728)
FM	34.0355	24.2695	62.1074*	62.1074*	62.1074*
	(21.5714)	(23.0628)	(33.5439)	(33.1691)	(33.3361)
c.FM#c.tight				-37.8379	-24.1073
				(40.5002)	(38.3384)
IT	**14.3814****	7.6210	14.7739	14.7739*	14.7739*
	(5.9038)	(6.8255)	(8.9400)	(8.8401)	(8.8846)
c.IT#c.tight				-7.1529	-5.7592
				(11.2005)	(10.1759)
FUELX	-0.2347	-0.2907	-0.0486	-0.0486	-0.0486
	(0.1726)	(0.2449)	(0.1927)	(0.1905)	(0.1915)
c.FUELX#c.tight				-0.2421	0.0529
				(0.3118)	(0.2711)
FUELM	**-0.8027****	-0.7861*	-0.1543	-0.1543	-0.1543
	(0.3882)	(0.4452)	(0.6748)	(0.6673)	(0.6706)
c.FUELM#c.tight				-0.6318	-0.2385
				(0.8040)	(0.7634)
govstab	**5.3239****	**11.1605*****	**-6.4414****	**-6.4414****	**-6.4414****
	(2.0846)	**(2.3197)**	**(3.0523)**	**(3.0182)**	**(3.0334)**
1.time#c.govstab#c.tight					**10.0534*****
					(3.5667)
3.time#c.govstab#c.tight					3.3441
					(3.8489)
5.time#c.govstab#c.tight					0.8352
					(3.7916)
c.govstab#c.tight				**17.6019*****	
				(3.8175)	
Constant	3.6636	-9.0194	39.7995	39.7995	39.7995
	(20.2270)	(26.6210)	(28.2341)	(27.9186)	(28.0593)
Observations	220	130	90	220	220
R-squared	0.1365	0.3152	0.1377	0.2897	0.4863
RMSE	39.18	35.05	38.36	36.41	31.12

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. Source: authors' calculations.