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THE PERFORMANCE OF EMERGING MARKETS DURING THE FED'S EASING AND TIGHTENING CYCLES

A RESILIENCE ANALYSIS ACROSS ECONOMIES

Joshua Aizenman, Donghyun Park, Irfan A. Qureshi, Jamel Saadaoui, and Gazi Salah Uddin

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ABSTRACT

We investigate the determinants of the performance of emerging markets (EMs) during five United States (US) Federal Reserve monetary tightening and easing cycles from 2004 to 2023. We study how macroeconomic and institutional conditions of an 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: bilateral exchange rate against the US dollar, exchange rate market pressure, and economy-specific Morgan Stanley Capital International (MSCI) index. 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.

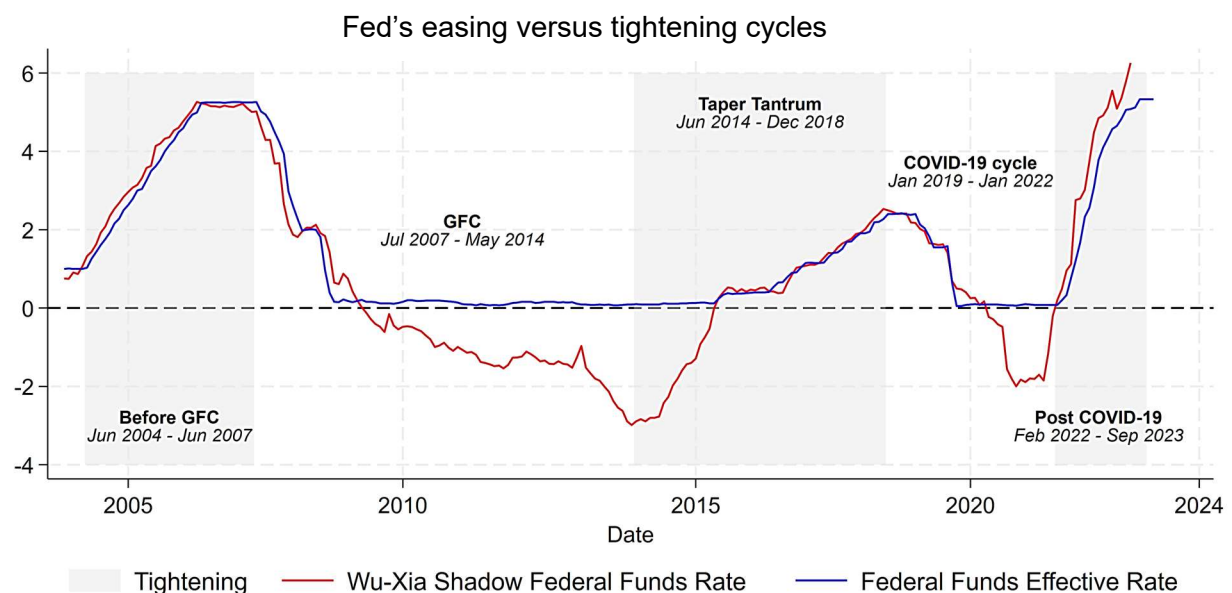
Keywords: monetary policy cycle, emerging markets, resilience, macroeconomic fundamentals, Federal Reserve

JEL code: E58

1. Introduction

The Global Financial Crisis (GFC) terminated the illusive Great Moderation (Blanchard, Dell’Ariccia, and Mauro 2010), which was followed by the United States (US) Federal Reserve’s (Fed’s) alternating tightening and easing cycles shown in Figure 1. The GFC induced 7 years of easing (2007–2014) followed by 4.5 years of tightening (“taper tantrum” years). Subsequently, 3 years of easing induced by the coronavirus disease (COVID-19) pandemic (2019–2022) led to a major tightening since February 2022, a delayed reaction to rapidly rising inflation in the US.

Figure 1: Monetary Cycles in the United States, June 2004 to September 2023



COVID-19 = coronavirus disease, Fed = Federal Reserve, GFC = Global Financial Crisis.

Sources: Data retrieved from Federal Reserve Bank of Atlanta. Wu-Xia Shadow Federal Funds Rate.

<https://www.atlantafed.org/cqer/research/wu-xia-shadow-federal-funds-rate>, and Federal Reserve Bank of St. Louis. Federal Funds Effective Rate. <https://fred.stlouisfed.org/series/FEDFUNDS>.

The vector autoregression analysis of Rey (2015) vividly illustrated that US monetary policy was a key driver of global financial cycles that affected the leverage of global banks, capital flows, and credit growth in the international financial system.

Consequently, the global financial cycles propagated by US shocks and policies constrained the policy options of financially integrated economies. Emerging markets (EMs), in particular, were exposed to “flight to quality” at times of heightened financial instability and “search for yields” when the US Fed’s massive monetary easing in response to GFC pushed the shadow Federal Funds rates toward zero (Bernanke and Reinhart 2004, Wu and Xia 2016).

From the perspective of most EMs and developing economies, global financial cycles are exogenous shocks that test their resilience. Our paper investigates the determinants of the relative performance of EMs during the Fed’s monetary tightening-easing cycles during the past 2 decades. To answer these questions, we investigate how macroeconomic conditions at the outset of each cycle influence the relative performance of emerging economies. 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: bilateral exchange rate against the US dollar, exchange rate market pressure (EMP) (Goldberg and Krogstrup 2023), and economy-specific Morgan Stanley Capital International (MSCI) index. We also include institutional factors as additional determinants of EM resilience.

We contribute to the empirical literature on EM performance in the face of US 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, the taper tantrum, and the 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.¹

Our empirical analysis yields a number of interesting findings. The current account balance is an important determinant of EMP during monetary cycles. Economies with more flexible exchange rate regimes and more developed financial markets experience lower exchange rate market pressures. Less-corrupt economies experienced lower exchange rate market pressure in two out of five cycles. Economies 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 economies 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 more financially developed economies were more subject to capital

¹ There is no unique definition of resilience. In the following, we will follow Markus Brunnermeier who discusses the concept of resilience as the ability to recover from a shock. In this respect, we will investigate the performance and recovery speed (duration to peak depreciation, for example) during the US monetary cycles.

outflows due to “flight to safety.” Economies with less religious tensions saw their financial markets perform better during the taper tantrum cycle. Economies 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 economies with better governance experienced worse stock market performance during the tightening before GFC. Economies 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, section 3 presents the empirical methodology, section 4 discusses the results, and section 5 concludes.

2. Literature Review

Previous literature has examined the impact of the Fed’s monetary policy on 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 foreign exchange (FX) reserves in buffering the exchange rate against the US dollar during the 2021–2022 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 economies can directly intervene to protect their currencies against depreciation.² Similarly, Georgiadis, Müller, and Schumann (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 Wesolowski (2021) find that the EM spillovers from the monetary policies of the Fed and European Central Bank are global.

In terms of characteristics of the economies 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, Jinjarak, and Park (2011), for instance, distinguish between group characteristics of the IT versus non-targeting EM central banks in EMs. They further distinguish between commodity-exporting IT economies from other IT economies. Alvarez and De Gregorio (2014) compare the performance of IT and fixed exchange rates in economies in the context of economic resilience. Fratzscher, Grosse-Steffen, and Rieth (2020) include a comprehensive set of policy-side controls, including fiscal rules, exchange rate regimes, and central bank independence. 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.

² 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, Coulibaly, and Zlate (2017): current account balance, fiscal balance, inflation, and FX reserves.

The broader set of economy-specific characteristics that drive macroeconomic outcomes must include the economic structure. Ahmed, Coulibaly, and Zlate (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 International Monetary Fund (IMF) (2014) World Economic Outlook (WEO), which finds that the structures of the investor 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, Jinjarak, and Park (2011) discussed in the context of different policy regimes.

Finally, another branch of the literature analyzes monetary policy shocks. Hoek, Kamin, and Yoldas (2022) study how US interest rates generate adverse spillovers to EMs. They undertake an event study-type approach around Federal Open Market Committee 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, Coulibaly, and Zlate (2017), they rank EMs according to seven indicators of vulnerability—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 gross domestic product (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, Coulibaly, and Zlate (2017) to construct our database for a large sample of industrialized and emerging economies over the different monetary-policy cycles in the US (June 2004 to September 2023).³ On the one hand, we build a database of explained financial variables observed at a monthly frequency—the bilateral exchange rate against the US dollar, the EMP (Goldberg and Krogstrup 2023), and the economy-specific MSCI index. 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 Bank for International Settlements (BIS) (Appendix A has 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 (ICRG) database built by the Political Risk Services 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, [Chinn and Ito 2006]); the financial development subindexes introduced by Svirydzenka (2016); and the exchange rate stability measure developed by Aizenman, Chinn, and Ito (2013). The ex-ante institutional variables are the indexes that can be found

³ The number of economies is subject to variations in the different samples due to data availability. The largest sample is a cross-section of 65 economies. (See Appendix B for the list. The Appendixes are available at <http://dx.doi.org/10.22617/WPS240365-2>). We keep industrialized economies as a benchmark. Thus, interaction terms with EM-specific dummy variables can reveal significant differences with industrialized economies.

in the ICRG database. A higher score reflects a better situation regarding economic 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 (e.g., government cohesion, legislative strength, popular support), corruption, military in politics, and religious tensions.

**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
<i>Explained variables:</i>												
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
<i>Explanatory variables:</i>												
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 economies 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 names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

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: (i) the Fed tightening I: June 2004 to June 2007; (ii) the Fed easing I:

July 2007 to May 2014; (iii) the Fed tightening II: June 2014 to December 2018; (iv) the Fed easing II: January 2019 to January 2022; and (v) the Fed tightening III: February 2022 to September 2023. In fact, these cycles identify several episodes of financial stress for emerging economies. The first cycle is before the 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. 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% 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 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% at the beginning of the cycle. The shadow rate was around -3% 82 months later (Figure 1). Episodes of financial stress drive the development of our explained financial variables during the GFC (Table 1, gray columns). On average, the exchange rate and the EMP registered large depreciations against the US dollar (and the euro for some economies 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 economies have used FX interventions to stabilize their exchange rates (Dominguez, Hashimoto, and Ito 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.

In the third monetary cycle, called the taper tantrum, the shadow rate increases from around -3% percent to above 2.5% 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% (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.”⁴ 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.

⁴ As noted by Aboud et al. (2024); Chinn, Ito, and Frankel (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
<i>Explained variables:</i>												
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
<i>Explanatory variables:</i>												
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 economies 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 names of the variables and the acronyms used in the table are fully described in Appendix A.

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% and below 0.1% 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 economies

implemented fiscal packages and dollar swap lines to cope with financial turmoil.⁵ The variation in bilateral exchange rates and the EMP was quite 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 (Table 2).

Table 3: Descriptive Statistics During the Fifth Cycle

	Observations	Mean	Median	SD	Minimum	Maximum
<i>Explained variables:</i>						
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
<i>Explanatory variables:</i>						
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 economies 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. The names of the variables and the acronyms used in the table are fully described in Appendix A.

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% at the end of our sample in September 2023. During this monetary cycle, the bilateral exchange rate against the dollar

⁵ Aizenman, Jinjark, and Park (2011) have shown that international reserves holding and swap lines may be complements rather than substitutes. Choi et al. (2022) describe how the new Foreign and International Monetary Authorities (FIMA) Repo Facility has extended access to dollar liquidity during the pandemic.

depreciated in most economies, averaging 7%. Ahmed et al. (2023) showed that economies with more ex-ante international reserves have limited their depreciation rate.⁶ The average level of international reserves is now at 28%. This may partially indicate that economies 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 the average of the MSCI indexes.

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 economy. 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 economy 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 economies, and a separate regression is run for each dependent variable and each subset of explanatory variables j .

⁶ Coulibaly et al. (2024) confirm the buffer effect of international reserve holdings on the exchange rate and public debt for 54 African economies. Exposure to the Belt and Road initiative will be explored when more comprehensive data will be available on public debt for African economies. Recently, the People's Republic of China has become “an international lender of last resort” as shown by Horn et al. (2023).

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 or 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 economies.⁷ Examining the heterogeneity of the performance of emerging economies 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 policymakers 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 variation, the variation of the EMP indexes and the MSCI indexes variation, respectively, during the different monetary cycles.⁸ As explained in subsection 3.2, our main objective is to explain the difference across economies in the performance and

⁷ A natural extension will be to control for crisis dummies, as in Laeven 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).

⁸ 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.

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, economies 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 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 IT 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, an economy cannot be

forced to quit an IT regime contrary to a fixed-exchange rate regime. As mentioned by Aizenman, Jinjark, and Park (2011), emerging economies 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 economies without an IT 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.

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 (0.3527)	-0.5273 (0.3144)	0.0136 (0.1547)	0.4738 (0.3245)	-0.2804 (0.3050)
RESGDP	-0.1915 (0.2430)	-0.4073* (0.2295)	-0.1300* (0.0656)	0.0018 (0.0836)	-0.1678** (0.0725)
NIIP	-1.1563 (6.8544)	7.5767 (5.9002)	0.6836 (2.0270)	0.8957 (2.9972)	4.2667* (2.1240)
GDeficit	1.3754** (0.5132)	0.4080 (0.5337)	-0.9368*** (0.3313)	-0.8932 (0.6850)	-0.1079 (0.5820)
GDebt	0.1168 (0.0693)	-0.0080 (0.1267)	-0.0644** (0.0297)	-0.0174 (0.0357)	0.0029 (0.0730)
CPI	-1.0157** (0.4351)	2.2739** (1.0917)	1.1370 (0.7073)	0.5376 (0.9455)	1.0398* (0.5615)
FUELX	-0.3972*** (0.0981)	-0.1280 (0.1246)	0.1581** (0.0610)	0.1182 (0.0791)	0.0554 (0.1007)
FUELM	-0.3648 (0.2330)	0.1702 (0.3372)	-0.4457*** (0.1269)	0.3219 (0.2140)	0.3254 (0.3874)
kaopen	0.7338 (1.8463)	0.1242 (2.4704)	1.5685 (1.3086)	-0.9405 (1.0478)	-1.3074 (1.8299)
ers	0.7903 (10.3988)	-0.0464 (12.4007)	-28.9637*** (7.6404)	-15.7212* (8.7798)	- -
IT	-17.4864*** (4.6234)	2.9200 (8.8328)	-5.3057 (3.4863)	2.0732 (3.1628)	-4.5101 (3.8294)
FI	-15.1873 (14.6961)	-42.7909 (26.2050)	-14.2118 (16.1468)	-20.3465 (13.4327)	-3.9456 (19.4381)
FM	13.1264 (8.8948)	20.5382 (17.6239)	1.4946 (11.2466)	4.5167 (10.3034)	11.0268 (10.6137)
extconf	0.3786 (2.1177)	-0.1408 (2.8750)	2.4214* (1.2865)	-0.6076 (1.4293)	1.5194 (2.2957)
corruption	-2.1792 (2.1895)	-2.9961 (3.6574)	0.3348 (1.7957)	0.1313 (1.9988)	-0.9060 (2.9516)
demoacc	-3.2898* (1.8045)	0.3203 (2.9979)	-0.2944 (1.8813)	-0.3151 (1.1534)	-1.4629 (1.6047)
ethnictens	-1.6153 (1.7483)	-1.3520 (2.3873)	0.9598 (1.3244)	0.1180 (1.3412)	-0.9540 (1.4753)
govstab	-1.1201 (1.4419)	3.4935 (2.3805)	2.2261** (0.8986)	-2.1061 (2.1042)	0.4353 (2.4553)
intconf	-3.6389** (1.6633)	0.4547 (2.5126)	-1.2601 (1.5396)	3.7247** (1.5460)	-1.1172 (2.3078)
laworder	1.2774 (2.1212)	1.0166 (3.1074)	4.0290* (2.1503)	-1.8976 (1.6117)	3.6529 (2.4170)
milpol	5.2856** (2.3200)	4.0691 (3.2339)	-2.9054 (1.8190)	0.0177 (1.5324)	1.6214 (1.6667)

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	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
reltensions	-0.1242 (1.5682)	-1.1499 (2.3884)	1.3748 (1.2340)	2.1241 (1.3700)	-0.5773 (1.8601)
Constant	53.4824** (26.1837)	-17.5125 (37.7146)	7.5123 (17.6057)	-1.9851 (25.4320)	-8.3556 (28.1996)
Economies	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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

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 economies declare to be inflation targeters, but constantly miss the inflation target, Türkiye 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 with time and with the credibility of the IT regime (de jure versus de facto).

**Table 5: Cross-Sectional Regressions for the Bilateral Exchange Rate Variation
—Backward Stepwise Selection**

	Fed tightening I June 2004–June 2007	Fed easing I June 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 (0.2285)		0.4898** (0.1977)	
RESGDP		-0.4075** (0.1821)	-0.1087** (0.0431)		-0.1600*** (0.0572)
NIIP		6.4131 (4.6179)			2.5039* (1.2762)
Gdeficit	0.9412** (0.3764)		-0.8511*** (0.1704)	-0.8569 (0.5811)	
Gdebt			-0.0612** (0.0284)		
CPI	-1.0617*** (0.3166)	2.6812*** (0.8072)	1.0046** (0.4786)		1.0877** (0.4387)
FUELX	-0.2556*** (0.0650)	-0.1390 (0.0925)	0.1687*** (0.0524)	0.1285* (0.0748)	
FUELM			-0.4159*** (0.0993)	0.2806* (0.1625)	
kaopen			1.3469 (0.9512)		-2.6850** (1.1547)

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	Fed tightening I June 2004–June 2007	Fed easing I June 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
ers			-27.3594*** (6.6048)	-17.6173** (7.3684)	-
IT	-16.3697*** (3.6481)		-4.9236* (2.8583)		-4.5660 (3.2522)
FI	-11.3020 (8.4619)	-49.2099*** (14.7421)	-13.5700 (10.0757)	-19.5798** (8.1516)	
FM		24.8325** (10.1394)			10.0849 (6.1635)
extconf			2.0494* (1.0478)		
govstab		2.6784* (1.5746)	2.1304*** (0.7742)		
intconf	-2.9984** (1.3623)			2.4470** (1.0436)	
laworder			4.2115** (1.6513)	-1.7746 (1.1315)	3.3111** (1.4346)
milpol	2.5130 (1.5286)	3.8811* (2.1165)	-3.2809** (1.3117)		
reltension s			1.3420 (0.9919)	2.2711* (1.3185)	
Constant	30.0433*** (11.2073)	-17.7384 (15.0958)	3.4317 (13.7423)	-9.1127 (11.3732)	-4.5227 (6.9015)
Economie s	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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

In light of this possible complementarity between IT regimes and fixed-exchange rate regimes (Aizenman, Jinjark, and Park 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 economies with higher ex-ante exchange rate stability.⁹ This empirical evidence shows that the relative merits of IT 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.

⁹ The data for the Exchange Rate Stability are not available during the fifth cycle.

Tables 6 and 7 show that the explanatory power for EMP regression ranges from 30% to 80%.¹⁰ 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 economies 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 IT 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.¹¹

¹⁰ The data for the EMP indexes are not available during the fifth cycle.

¹¹ In Appendix C, we provide further evidence for the GFC cycle with estimates before and after the Zero Lower Bound (ZLB).

For the institutional variables, economies 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.¹²

**Table 6: Cross-Sectional Regressions
for Exchange Rate Market Pressure Variation**

<i>Variables</i>	Fed tightening I June 2004–June 2007 EMPcycle_1	Fed easing I July 2007–May 2014 EMPcycle_2	Fed tightening II June 2014–Dec 2018 EMPcycle_3	Fed easing II Jan 2019–Jan 2022 EMPcycle_4
CAB	0.3713* (0.1799)	0.0836 (0.1378)	-0.3309* (0.1796)	-0.0282 (0.3315)
RESGDP	-0.1087* (0.0515)	-0.0498 (0.0406)	0.0432 (0.0583)	-0.0200 (0.0568)
NIIP	-0.6710 (2.3040)	0.8588 (1.3172)	0.6654 (1.4141)	-0.0347 (1.9426)
Gdeficit	0.1481 (0.2196)	0.0676 (0.1735)	0.5243 (0.3412)	0.3575 (0.4882)
Gdebt	0.0523* (0.0286)	0.0109 (0.0180)	-0.0088 (0.0214)	0.0094 (0.0186)
CPI	0.0196 (0.2302)	-0.0788 (0.3778)	0.2381 (0.3083)	-0.0797 (0.6533)
FUELX	-0.1174* (0.0644)	-0.0146 (0.0509)	0.0068 (0.0375)	0.0558 (0.0618)
FUELM	-0.2733* (0.1435)	0.1326 (0.0773)	0.0031 (0.1012)	-0.0497 (0.1375)
kaopen	-0.2601 (0.6273)	0.3427 (0.4036)	-0.8433 (0.8519)	-0.2918 (1.0997)
ers	-7.9386 (5.5385)	2.1804 (1.9166)	-11.0477** (3.9744)	-7.5097 (7.2901)
IT	-0.7695 (1.8337)	2.7046 (2.0800)	-1.3262 (2.4821)	-1.8400 (2.4837)

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¹² 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.

	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
Variables	EMPCycle 1	EMPCycle 2	EMPCycle 3	EMPCycle 4
FI	2.7659 (4.6766)	3.7644 (6.6758)	16.8537*** (4.7194)	-1.6193 (9.0615)
FM	-2.9530 (3.7439)	-7.7224* (4.1598)	-9.6606** (3.2455)	1.6901 (6.9718)
extconf	-1.8975* (0.9725)	0.4709 (0.7217)	-0.5402 (0.6964)	-0.7535 (0.7241)
corruption	-1.0710* (0.5058)	-1.8870*** (0.5902)	0.8749 (0.7300)	1.1422 (1.5586)
demoacc	-1.5388* (0.7871)	-0.4585 (0.7658)	-0.0346 (0.8489)	-0.3799 (0.8327)
ethnictens	0.0110 (0.4374)	-0.7467 (0.6620)	-0.8244 (0.6758)	-0.9144 (1.1709)
govstab	-1.1928 (0.7720)	0.7118 (0.4753)	0.1925 (0.8191)	-0.8122 (1.2353)
intconf	-0.2328 (0.4842)	-0.6223 (0.6696)	-0.2107 (0.7020)	0.8274 (1.1932)
laworder	0.0226 (0.7360)	1.5921* (0.8698)	0.4921 (1.1836)	-0.7753 (1.1278)
milpol	1.0047 (0.5937)	1.4267* (0.7744)	-0.7600 (1.0975)	-0.3786 (0.9926)
reltensions	-0.6505 (0.5757)	0.3890 (0.6836)	1.5546* (0.7969)	-0.1687 (1.0292)
Constant	47.9931*** (13.2738)	-9.9382 (8.6049)	0.2934 (12.1105)	21.3171 (16.8123)
Economies	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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

Table 7: Cross-Sectional Regressions for the Exchange Rate Market Pressure Variation—Backward Stepwise Selection

	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
Variables	EMPCycle 1	EMPCycle 2	EMPCycle 3	EMPCycle 4
CAB	0.2851*** (0.0667)	0.1434*** (0.0499)	-0.3632*** (0.0956)	
RESGDP	-0.0847*** (0.0224)	-0.0587* (0.0299)		
NIIP				
Gdeficit			0.6079*** (0.1214)	
Gdebt	0.0424*** (0.0089)			
CPI			0.2620 (0.1874)	
FUELX	-0.0947*** (0.0246)			0.0767*** (0.0246)
FUELM	-0.2075*** (0.0526)	0.1263*** (0.0440)		
kaopen		0.4880* (0.2723)		

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<i>Variables</i>	Fed tightening I June 2004–June 2007 EMPcycle 1	Fed easing I July 2007–May 2014 EMPcycle 2	Fed tightening II June 2014–Dec 2018 EMPcycle 3	Fed easing II Jan 2019–Jan 2022 EMPcycle 4
ers	-5.5121*** (1.7070)		-7.8250*** (2.2291)	-5.5836*** (1.9437)
IT		1.2110 (0.8609)	-2.9149* (1.5027)	
FI		6.7426* (3.6310)	15.8086*** (4.7414)	
FM		-7.3645*** (2.0023)	-5.8688** (2.6826)	
extconf	-1.7226*** (0.4206)	0.9637* (0.4816)		
corruption	-0.8996** (0.3265)	-1.9404*** (0.4672)	0.7141 (0.5035)	
demoacc	-1.3440*** (0.2940)	-0.9946** (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** (0.5294)	-1.1500*** (0.4089)	
reltensions			0.9924** (0.4711)	
Constant	38.5930*** (7.1478)	-3.5384 (4.0283)	-1.0353 (3.5280)	4.1801*** (1.0513)
Economies	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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

In Tables 8 and 9, we can see that economies with higher levels of consumer price index (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 economies 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 economies 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 tightening instances—before the GFC and the taper tantrum. We can conjecture that economies 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 economies 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, financial markets of economies with less religious tensions (i.e., a higher score for the variable relations) performed better than other economies during the taper tantrum cycle.

Furthermore, economies 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.¹³ We can also mention that economies with better governance stability have experienced worsened performance on the stock markets over the first cycle, the tightening before the GFC. Finally, economies with better democratic accountability, less religious tensions,¹⁴ and a better score in the variable “law order” have experienced better performance during the easing cycle induced by the COVID-19 pandemic.

¹³ A possible interpretation is that they trusted their institutions more, thereby experiencing a higher appreciation of their stock markets during the great moderation.

¹⁴ At the 10% level.

Finally, it could be useful to provide an overview of the results discovered in our research as we run several cross-sectional regressions for three macro-financial variables. The general findings in the models with backward stepwise selection tables in Tables 5, 7, and 9 are as follows: first, cross-sectional 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 economies during the different US monetary cycles. The relative merits of IT regimes and less flexible exchange rate regimes vary over time.

Second, these determinants are asymmetric during tightening and easing cycles, which may indicate that during tightening cycles, especially more recent cycles due to dollar dominance, the resilience of economies 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.

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 policymakers' real-time reaction to unexpected events. This "de facto" quality of institutions may be the yardstick on which resilience and performance should be evaluated.

Table 8: Cross-Sectional Regressions for the MSCI Index 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
<i>Variables</i>	MSCIcycle 1	MSCIcycle 2	MSCIcycle 3	MSCIcycle 4	MSCIcycle 5
CAB	-1.5820 (1.4040)	0.8056 (1.3107)	2.1013 (1.3733)	3.7019*** (1.2331)	1.0069 (0.7718)
RESGDP	0.3741 (0.3717)	-0.0612 (0.4317)	0.4494 (0.3894)	-0.0333 (0.2648)	-0.1468 (0.1761)
NIIP	10.4082 (10.4259)	16.3796 (13.2510)	-4.6400 (10.5847)	-3.7179 (6.4502)	-2.8632 (4.1361)
Gdeficit	-3.3382* (1.7395)	-1.3642 (1.8981)	-1.6300 (2.0081)	-0.7816 (1.7591)	0.6026 (1.6115)
Gdebt	-0.2242 (0.1556)	-0.4812** (0.2107)	0.1510 (0.1210)	0.0292 (0.1189)	0.1189 (0.0950)
CPI	-0.8933 (1.2953)	2.8022 (3.1401)	2.2708 (3.0947)	2.4345** (1.0917)	4.2375* (2.3072)
FUELX	1.3291** (0.5145)	0.1400 (0.5106)	-0.0975 (0.2609)	-0.1458 (0.2414)	-0.2567 (0.2351)
FUELM	0.5994 (0.6636)	0.6406 (0.8894)	0.1995 (0.5399)	-0.9329 (0.7679)	-1.6948 (1.4090)
kaopen	3.5950 (4.5324)	-4.2378 (8.0719)	-8.0831 (5.6184)	-11.1031 (8.2217)	2.5653 (7.0247)
ers	-13.9039 (23.3277)	-65.8101 (50.5754)	20.8828 (24.9157)	25.3125 (27.1327)	- -
IT	-27.1232 (16.1791)	-12.5068 (29.5982)	17.8509 (13.3204)	10.3949 (10.7161)	15.8783 (11.2351)
FI	-74.7074** (30.8771)	48.1606 (59.8687)	-81.5720 (48.9711)	-12.8955 (50.0994)	13.0366 (49.6860)
FM	4.0190 (33.7413)	17.1513 (39.5147)	34.0788 (32.2638)	25.2255 (39.4681)	18.5117 (27.6034)
extconf	-0.6651 (5.3965)	2.8162 (8.1842)	-3.5150 (6.0002)	-3.9266 (4.3807)	-7.4822 (4.5427)
corruption	7.0472 (6.9930)	9.4542 (13.1469)	12.5971* (6.7760)	0.0223 (6.1556)	-1.3282 (8.2039)
demoacc	2.2546 (4.0143)	0.7758 (6.6859)	2.4525 (5.0544)	10.4388** (4.3749)	0.4003 (4.6381)
ethnicens	0.2848 (3.8629)	-3.0823 (5.3991)	-7.2076 (6.7450)	-5.0144 (4.8100)	1.0482 (6.3120)
govstab	-4.7673 (4.1416)	-3.6656 (5.9413)	-9.3375** (4.3344)	4.8019 (5.0057)	1.7239 (5.4592)
intconf	5.2869 (5.6058)	-9.5779 (7.8430)	8.1230* (4.6653)	1.3874 (5.6830)	0.1152 (7.1059)
laworder	-8.2732 (4.9162)	-10.8152 (10.9675)	-2.2657 (6.8801)	10.1926 (7.0982)	5.7969 (9.5584)
milpol	-6.9763 (5.7237)	-8.3994 (8.8180)	-6.3476 (6.5963)	-2.6898 (5.5903)	-4.7581 (8.2402)
reltension s	3.4724 (4.8889)	2.1177 (5.9553)	11.1228* (5.7203)	8.2015 (5.8158)	-3.6971 (5.2910)
Constant	132.2971 (76.1744)	152.1266 (110.4634)	-14.9999 (77.5892)	-99.3836 (77.5544)	45.0447 (95.1920)
Economies	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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

**Table 9: Cross-Sectional Regressions for the MSCI Index Variation
—Backward Stepwise Selection**

<i>Variables</i>	Fed tightening I June 2004–June 2007 MSCIcycle 1	Fed easing I July 2007–May 2014 MSCIcycle 2	Fed tightening II June 2014–Dec 2018 MSCIcycle 3	Fed easing II Jan 2019–Jan 2022 MSCIcycle 4	Fed tightening III Feb 2022–Sep 2023 MSCIcycle 5
CAB			1.8921* (1.0894)	2.8357*** (0.7788)	1.2139** (0.5845)
RESGDP			0.3260** (0.1422)		
NIIP		20.6097*** (6.3923)			-5.2687** (2.0591)
Gdeficit	-1.7817* (0.9319)		-2.0614 (1.3251)		
Gdebt		-0.2482* (0.1232)	0.1373* (0.0756)		0.1341* (0.0685)
CPI		4.4311** (2.1580)		3.2733*** (1.0317)	4.0851** (1.7339)
FUELX	0.9180** (0.3380)				-0.2099 (0.1550)
FUELM				-0.6456* (0.3752)	-1.6183* (0.8372)
kaopen		-6.3564* (3.7329)	-6.1469 (3.6632)	-6.9717* (4.0977)	
ers	-26.2608** (11.9296)	-56.5185*** (13.6488)			
IT	-22.5462** (8.9436)		12.8086 (7.9744)		15.1116** (7.3195)
FI	-53.1829*** (11.2608)	43.5014 (28.9008)	-81.3427** (38.6590)		
FM			38.4880 (24.8987)		22.1271 (16.2644)
extconf				-5.1425* (2.5551)	-6.5920* (3.6307)
corruption		8.8498 (5.6832)	9.0982* (4.5822)		
demoacc				10.7888*** (2.8209)	
ethnictens			-8.2838** (3.7976)		
govstab	-7.1514** (2.8119)		-9.9294*** (2.9244)		
intconf		-10.5788** (4.1152)	6.3844 (3.9500)		
laworder		-11.1314** (5.3443)		8.6055* (4.5681)	7.9230 (5.0598)
milpol			-6.5956 (4.8920)		-6.1578 (5.2053)
reltension s			10.6281*** (3.8280)	4.5851* (2.7031)	
Constant	179.0449*** (30.1521)	122.6686*** (35.2992)	12.3096 (26.2127)	-35.6822 (31.9476)	32.7229 (40.2296)
Economie s	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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

For the sake of completeness, we compute two other measures of resilience in Tables 10 to 13. First, we compute the number of months required to reach peak depreciation in Tables 10 and 11. Second, we compute the number of months required to reach the lowest point in the equity MSCI index. Interestingly, we can note that being an inflation targeter is associated with a reduction of the number of months necessary to reach peak depreciation.

Table 10: Cross-Sectional Regressions for the Time to Peak Depreciation

	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
<i>Variables</i>	Time to peak	Time to peak	Time to peak	Time to peak	Time to peak
CAB	-0.2388 (0.2835)	-0.2302 (0.6236)	0.3737 (0.2347)	0.6307* (0.3156)	-0.2173* (0.1131)
RESGDP	-0.1536 (0.1576)	-0.3083 (0.3016)	0.0044 (0.0976)	-0.0501 (0.0767)	-0.0286 (0.0311)
NIIP	-3.2158 (5.6698)	2.7131 (9.8985)	-4.9210 (3.6595)	-1.4721 (3.5774)	1.9001** (0.7126)
GDeficit	0.6372* (0.3510)	0.0502 (1.0017)	-1.3299*** (0.4794)	-0.5002 (0.4893)	-0.2012 (0.1884)
GDebt	0.0735 (0.0609)	-0.0447 (0.1544)	-0.0284 (0.0397)	0.0737 (0.0445)	0.0394*** (0.0136)
CPI	-0.4048 (0.3744)	3.0272* (1.7529)	2.0127*** (0.6763)	-0.2736 (0.7903)	-0.0538 (0.1779)
FUELX	-0.3216*** (0.0721)	-0.0902 (0.2149)	0.0736 (0.0843)	0.0971 (0.0824)	0.0650* (0.0325)
FUELM	0.0226 (0.2098)	0.4610 (0.5283)	-0.4080** (0.1615)	0.2401 (0.1681)	0.2197* (0.1289)
kaopen	0.6249 (1.3546)	-0.4955 (4.5624)	3.7523** (1.6468)	-0.2401 (1.1427)	0.4681 (0.7155)
ers	-2.2830 (8.1690)	-5.8338 (20.3693)	9.6727 (11.3125)	-0.6674 (8.1057)	- -
IT	-11.5537*** (3.7298)	-5.1764 (12.4129)	-10.4217** (4.9832)	0.7126 (4.0237)	-3.2028** (1.5067)
FI	-3.5057 (13.5738)	-33.1146 (33.9516)	-35.0651* (18.5355)	-13.0231 (12.4183)	-24.3129*** (7.6996)
FM	4.7021 (8.1876)	4.1894 (27.2824)	26.4078 (15.7361)	-2.4457 (10.0080)	9.8223** (4.3537)
extconf	0.4897 (1.6652)	0.7264 (5.7660)	5.8255*** (2.0160)	-0.9171 (1.1867)	0.2587 (0.7664)
corruption	1.0499 (1.5023)	-1.1221 (6.8295)	-0.0719 (2.2254)	0.4075 (1.8276)	-1.0554 (1.2397)
demoacc	-0.7533 (1.2961)	-0.0100 (4.6775)	-0.0401 (2.0792)	-0.3379 (1.5184)	-0.0063 (0.8287)
ethnictens	-0.7372 (1.3614)	-2.3304 (3.5010)	5.6386** (2.2287)	-0.6786 (1.4736)	-0.9138 (0.6863)
govstab	1.0961 (1.0678)	3.7426 (3.8607)	-0.4158 (1.5859)	-0.8970 (1.8688)	-0.2965 (0.8522)
intconf	-2.7116* (1.3505)	2.2516 (4.3328)	-2.7251 (2.2602)	2.3921 (1.8858)	1.4027 (0.9287)
laworder	0.7363 (1.6690)	-0.0337 (5.6417)	1.9157 (2.2942)	-3.0690 (1.8994)	2.1886* (1.1832)
milpol	2.3705 (1.8068)	3.1691 (4.7407)	-4.9643** (2.0659)	0.4039 (1.7084)	-0.7327 (0.9447)

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	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	Time to peak	Time to peak	Time to peak	Time to peak	Time to peak
reltensions	-0.9752 (1.2173)	-1.6965 (3.1028)	-2.6950 (1.6372)	1.2264 (1.6887)	0.0366 (0.7456)
Constant	28.7056 (19.2843)	-7.6027 (61.6435)	11.9135 (27.8384)	19.5518 (22.5573)	2.6473 (12.3957)
Economies	61	63	58	65	54
R-squared	0.5281	0.4305	0.6909	0.4290	0.6246
RMSE	9.675	27.33	11.20	9.937	4.186

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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

**Table 11: Cross-Sectional Regressions for the Time to Peak Depreciation
—Backward Stepwise Selection**

	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	Time to peak	Time to peak	Time to peak	Time to peak	Time to peak
CAB	-0.2702* (0.1470)		0.3761* (0.2053)	0.2866** (0.1354)	-0.2068** (0.0912)
RESGDP	-0.1762 (0.1196)	-0.2395 (0.1643)		-0.1356*** (0.0403)	
NIIP			-4.3497* (2.3746)		1.6602*** (0.4719)
GDeficit	0.6965** (0.3140)		-1.1297*** (0.3252)		
GDebt	0.0895* (0.0470)		-0.0403 (0.0302)	0.0567 (0.0362)	0.0435*** (0.0137)
CPI	-0.4556 (0.2754)	4.5736*** (0.9328)	1.9812*** (0.5672)		
FUELX	-0.3082*** (0.0501)			0.0658 (0.0498)	0.0418 (0.0260)
FUELM			-0.4225*** (0.1447)	0.2316* (0.1371)	0.2027* (0.1025)
kaopen			3.5350** (1.5329)		
ers					
IT	-10.5781*** (2.6523)		-12.3277*** (3.6755)		-2.2297* (1.2010)
FI			-31.8136* (17.0352)		-23.9074*** (5.5763)
FM			25.8872* (13.2514)		9.4063** (3.7760)
extconf			5.2883*** (1.8081)		
corruption					-1.1381 (0.8563)
demoacc					
ethnictens			5.7422*** (1.9121)		-0.8586 (0.5215)
govstab	1.2208 (0.7927)	3.5157* (2.0945)			
intconf	-2.3717** (1.0411)		-2.9490 (1.9165)	1.8431* (0.9994)	1.1384* (0.5873)
laworder				-4.0806*** (0.9847)	1.9666** (0.7820)
milpol	1.7137 (1.2388)		-3.9584** (1.6129)		
reltensions			-2.6158 (1.5683)		

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	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	Time to peak	Time to peak	Time to peak	Time to peak	Time to peak
Constant	27.0949** (11.5820)	-10.3996 (14.5933)	24.7810 (17.2990)	12.8733 (9.9581)	3.0773 (5.5961)
Economies	61	63	58	65	54
R-squared	0.4917	0.3547	0.6700	0.3669	0.5777
RMSE	8.753	23.96	10.56	8.982	3.922

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%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

Table 12: Cross-Sectional Regressions for the Time to Lowest Point in Equity MSCI Indexes

	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	Time to low	Time to low	Time to low	Time to low	Time to low
CAB	0.0223 (0.0987)	-0.7908 (0.6001)	-0.1937 (0.6640)	-0.2341 (0.2943)	-0.3398 (0.2022)
RESGDP	-0.0233 (0.0262)	0.4645** (0.1879)	0.0498 (0.2273)	-0.0484 (0.0619)	0.0549* (0.0268)
NIIP	-0.0680 (0.6370)	-7.1060 (5.7911)	0.6245 (6.7688)	1.9956 (1.2628)	-0.9646 (0.7312)
GDeficit	0.0445 (0.0927)	1.4011* (0.7439)	0.1248 (0.8510)	-0.4632 (0.4469)	0.3976 (0.3390)
GDebt	0.0188* (0.0099)	0.2209 (0.1566)	0.0212 (0.0971)	-0.0080 (0.0232)	-0.0037 (0.0205)
CPI	-0.2125*** (0.0724)	-2.5890 (1.8976)	1.3476 (1.6131)	0.4750 (0.2857)	-0.3204 (0.2944)
FUELX	-0.0246 (0.0267)	-0.1613 (0.2375)	0.0279 (0.1645)	-0.0077 (0.0462)	0.1221*** (0.0418)
FUELM	-0.0321 (0.0377)	0.0949 (0.4910)	-0.2580 (0.3624)	0.1802 (0.1962)	0.2449 (0.2613)
kaopen	-0.4405 (0.2652)	4.5719 (4.8272)	4.1682 (3.4006)	4.0004** (1.4921)	0.1096 (1.0279)
ers	0.0080 (1.0377)	23.0482 (33.1679)	-1.7117 (13.9548)	-11.7030* (5.7285)	- -
IT	-0.3083 (0.5955)	-0.4871 (15.5205)	3.7220 (7.8657)	0.0762 (3.2819)	-2.3469 (2.1356)
FI	-0.0343 (1.7473)	-16.2982 (22.0011)	23.4025 (21.1437)	1.2131 (10.7162)	-6.2578 (10.3266)
FM	1.8200 (1.7347)	-21.5946 (25.7300)	-20.0463 (17.2581)	-2.0751 (6.0784)	6.5669 (5.3447)
extconf	0.2114 (0.2595)	-0.8798 (4.2353)	3.3889 (3.9967)	4.0840*** (1.1271)	1.2525 (0.9376)
corruption	-0.3513 (0.4086)	-4.8573 (7.7038)	-9.0890** (3.5648)	-2.6399* (1.2707)	0.3283 (1.7627)
demoacc	0.0723 (0.2670)	8.5079** (4.0685)	1.4937 (3.1406)	-1.6102 (1.1451)	-1.3704 (1.0166)
ethnictens	-0.0873 (0.1971)	0.4309 (3.2096)	0.6669 (3.2337)	2.2822** (1.0409)	-1.1220 (1.1533)
govstab	0.1823 (0.2543)	3.6354 (3.1911)	5.5896* (2.9042)	-1.0158 (1.2954)	-1.3545 (1.1196)
intconf	0.0885 (0.3175)	0.1653 (3.9220)	-3.2875 (2.7782)	-3.2481** (1.3835)	-1.5474 (1.2461)
laworder	0.2757 (0.2831)	4.8829 (7.3375)	6.0848 (3.9758)	0.8619 (1.2685)	-0.6536 (1.5785)
milpol	-0.6391 (0.3889)	-6.5826 (5.0103)	-2.9456 (5.0351)	1.1375 (1.5377)	1.3178 (1.1767)

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	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
<i>Variables</i>	Time to low	Time to low	Time to low	Time to low	Time to low
reltensions	0.4781* (0.2602)	0.3191 (3.5573)	-1.0461 (3.7719)	-3.4048** (1.2089)	0.6221 (0.9777)
Constant	-2.2880 (3.2888)	-20.0029 (55.8434)	-21.2901 (53.1405)	24.4524 (19.7868)	23.0916 (15.1910)
Economies	39	44	45	44	44
R-squared	0.6877	0.6056	0.5224	0.7178	0.4998
RMSE	1.099	17.26	12.25	4.607	4.322

Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. Bold indicates a significance level below 5%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

**Table 13: Cross-Sectional Regressions for the Time to Lowest Point in Equity
MSCI Indexes—Backward Stepwise Selection**

	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
<i>Variables</i>	Time to low	Time to low	Time to low	Time to low	Time to low
CAB		-0.8373** (0.3235)		-0.2095 (0.1475)	
RESGDP	-0.0247** (0.0092)	0.6805*** (0.1639)			0.0271* (0.0145)
NIIP		-10.6948** (4.0194)			
GDeficit		1.2377** (0.5110)			
GDebt	0.0168*** (0.0044)	0.2451*** (0.0810)			
CPI	-0.2278*** (0.0590)	-2.1930* (1.1278)	1.0777 (0.6548)	0.3923*** (0.1382)	
FUELX					0.0807*** (0.0188)
FUELM				0.2111* (0.1134)	
kaopen	-0.3728** (0.1662)		4.4194** (2.1028)	3.3350*** (1.0150)	
ers		30.9898*** (8.5869)		-7.2293** (3.1124)	
IT			4.9606 (2.9654)		
FI			21.3280 (15.0856)		
FM	2.1407** (0.9767)		-18.1955 (12.3085)		
extconf	0.2472 (0.1468)		3.3404 (2.1577)	4.0007*** (0.9555)	
corruption			-8.5006*** (2.2066)	-1.3198 (0.7980)	
demoacc		7.0707** (3.3529)		-1.0376 (0.7141)	
ethnictens				1.4986* (0.8648)	
govstab	0.2588* (0.1280)		4.6875*** (1.5291)		-0.9573** (0.4440)
intconf			-2.7209 (1.7756)	-3.4705*** (0.9362)	-0.8473 (0.7039)
laworder			5.3083* (2.9866)		
milpol	-0.5127** (0.2460)	-5.8641 (4.0102)	-3.0929* (1.7474)		

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	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
<i>Variables</i>	Time to low	Time to low	Time to low	Time to low	Time to low
reltensions	0.3956** (0.1589)			-2.4565*** (0.8895)	
Constant	-3.5330* (1.9925)	-12.2947 (11.0529)	-15.5642 (19.8952)	17.2033** (7.2357)	21.0648*** (6.9671)
Economies	39	44	45	44	44
R-squared	0.5776	0.5011	0.4967	0.6619	0.2985
RMSE	0.949	15.26	10.27	4.086	3.844

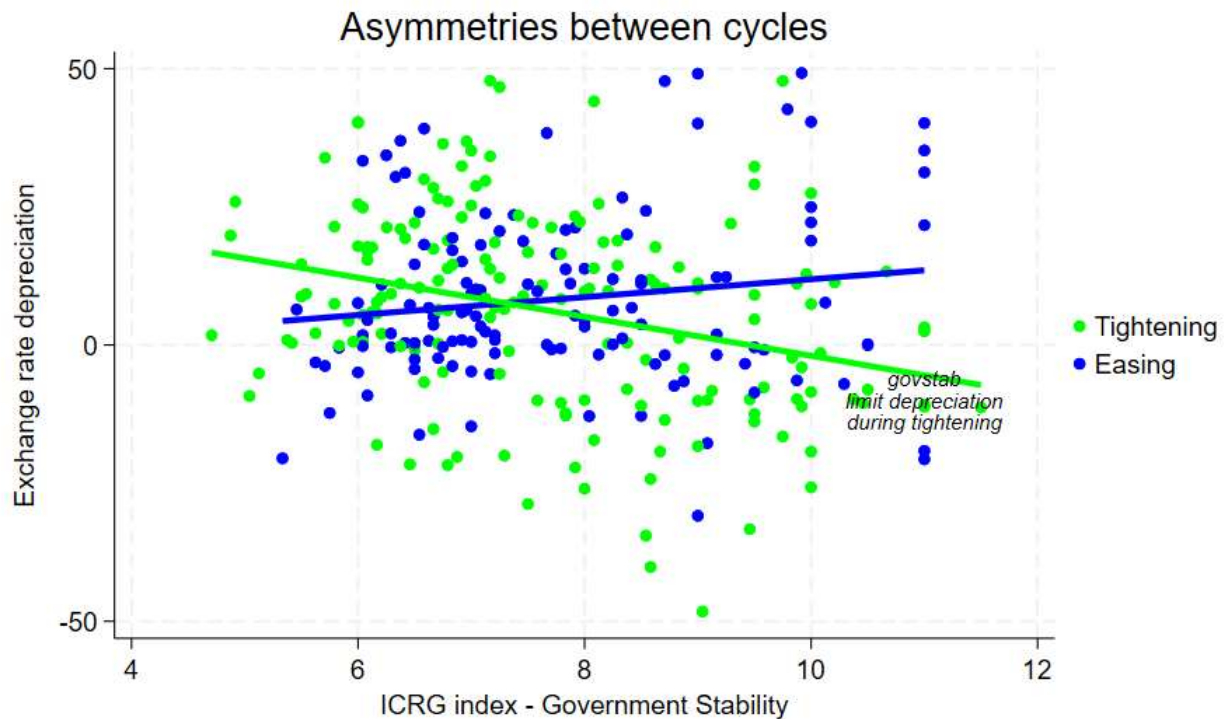
Note: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are in parentheses. We use a backward stepwise selection procedure for the variables. The variables with p-values above 20% are sequentially removed from the model starting from the highest to the lowest p-value. Bold indicates a significance level below 5%. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

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 economies. 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



ICRG = International Country Risk Guide.

Note: with the data sample of Appendix C for the 5 cycles. The score of Government Stability is observed one year before each cycle.

Source: Authors' calculations.

Tables 14 to 16 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 EMP 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.¹⁵

¹⁵ In Appendixes D and E, we provide panel evidence for the five cycles in the case of the bilateral exchange rate variations and the MSCI variations during the cycles.

Table 14: Panel Evidence for the Bilateral Exchange Rate

Variables	Tightening cycles DXR 4 cycles	Easing cycles DXR 4 cycles
CAB	-0.3295** (0.1495)	-0.3368 (0.2073)
tight	41.9752*** (12.9289)	
c.CAB#c.tight	-0.0072 (0.2555)	
kaopen	-1.4127 (1.0452)	-1.3132 (1.1562)
c.kaopen#c.tight	0.0994 (1.5586)	
NIIP	-1.6504 (1.6844)	4.8681* (2.5342)
c.NIIP#c.tight	6.5185** (3.0429)	
FUELM	0.2130 (0.1689)	0.4774*** (0.1830)
c.FUELM#c.tight	0.2645 (0.2491)	
Gdebt	-0.0663 (0.0491)	-0.0305 (0.0418)
c.GDebt#c.tight	0.0358 (0.0645)	
govstab	2.1891* (1.1590)	-4.0505*** (0.9436)
c.govstab#c.tight	-6.2396*** (1.4945)	
Constant	-7.9835 (9.0842)	33.9917*** (9.1997)
Economies (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%. Only the four first cycles are included, as we use the ers variable in the backward stepwise selection procedure. The dummies "tight" and "easy" refer to tightening and easing cycles, respectively. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

Table 15: Panel Evidence for Exchange Market Pressure Indexes

Variables	Tightening cycles EMP 4 Cycles	Easing cycles EMP 4 Cycles
ers	-2.3539 (1.7499)	-2.9106 (1.9754)
tight	1.9320 (4.9594)	
c.ers#c.tight	-0.5567 (2.6389)	
RESGDP	-0.0206 (0.0184)	-0.0441* (0.0266)
c.RESGDP#c.tight	-0.0236 (0.0323)	
NIIP	0.4262 (0.5967)	1.3500 (0.9920)
c.NIIP#c.tight	0.9238 (1.1576)	
Gdeficit	0.0739 (0.0764)	-0.0310 (0.1234)
c.GDeficit#c.tight	-0.1049 (0.1451)	
demoacc	-0.5104 (0.3225)	-1.0196*** (0.3738)
c.demoacc#c.tight	-0.5093 (0.4937)	
FM	-2.6745 (1.9805)	-2.9718 (2.5208)
c.FM#c.tight	-0.2973 (3.2057)	
govstab	-0.0953 (0.2491)	-0.3528 (0.2339)
c.govstab#c.tight	-0.2574 (0.3417)	
FI	3.3818 (2.8110)	5.6219** (2.7090)
c.FI#c.tight	2.2401 (3.9039)	
ethnictens	-0.4969 (0.3301)	-0.5011 (0.3339)
c.ethnictens#c.tight	-0.0042 (0.4695)	
Constant	8.1967*** (3.0796)	10.1287** (3.8874)
Economies (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%. Only the four first cycles are included due to missing data for EMP. The dummies “tight” and “easy” refer to tightening and easing cycles, respectively. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

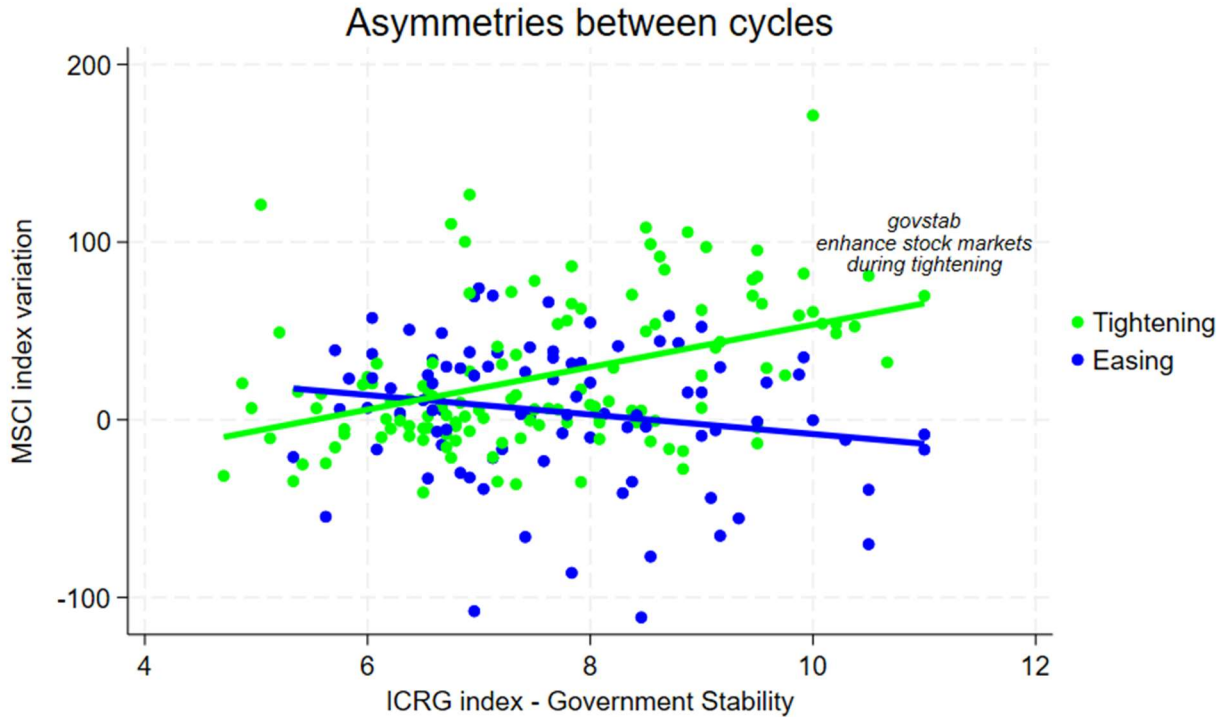
Table 16: Panel Evidence for MSCI Indexes

Variables	Tightening cycles MSCI 4 Cycles	Easing cycles MSCI 4 Cycles
CAB	1.4598** (0.7006)	0.7739 (0.6057)
tight	-30.0741 (37.9127)	
c.CAB#c.tight	-0.6859 (0.9262)	
FUELM	-0.0846 (0.6675)	-1.6007*** (0.4906)
c.FUELM#c.tight	-1.5160* (0.8284)	
FI	-27.7682 (23.6623)	-78.4734*** (22.0292)
c.FI#c.tight	-50.7052 (32.3294)	
Gdeficit	-1.8118 (1.3384)	-2.2064*** (0.7742)
c.GDeficit#c.tight	-0.3946 (1.5462)	
govstab	-5.5716* (2.9149)	9.2714*** (2.2233)
c.govstab#c.tight	14.8430*** (3.6661)	
corruption	6.1084 (4.9762)	2.4394 (3.1911)
c.corruption#c.tight	-3.6690 (5.9115)	
ers	-34.5878** (15.0331)	-12.2621 (12.0133)
c.ers#c.tight	22.3256 (19.2435)	
Constant	59.3109** (27.1966)	29.2368 (26.4144)
Economies (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%. Only the four first cycles are included, as we use the ers variable in the backward stepwise selection procedure. The dummies “tight” and “easy” refer to tightening and easing cycles, respectively. The names of the variables and the acronyms used in the table are fully described in Appendix A.

Source: Authors' calculations.

Figure 3: Asymmetries During Tightening Cycles for the MSCI Index



ICRG = International Country Risk Guide.

Note: with the data sample of Appendix D for the 5 cycles. The score of Government Stability is observed one year before each cycle.

Source: Authors' calculations.

4.3. Robustness Checks

In Appendix F, 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 F1, and for the MSCI indexes in Table F2. Overall, the results indicate robustness, especially for the asymmetries between government stability during the tightening and easing cycles. Tables F1 and F2 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 position across economies of government stability explains the cross-sectional performance and resilience of economies 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. Tables F3 and F4 present panel quantile evidence that support the results of Tables F1 and F2. Higher government stability provides a better resilience to depreciation for higher quantiles of the depreciation rate. In addition, better government stability allows for better performance on equity markets for lower quantiles of the MSCI indexes.

5. Conclusion

The US' share in global output has steadily declined in recent years. The relative decline of the US in the world economy mirrors the relative decline of advanced economies as a whole and the corresponding rise of EMs spearheaded by the People's Republic of China (PRC). However, despite the relative decline of the US in the real economy, the US dollar still reigns supreme. It 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-19 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 US Federal Reserve's monetary policy have an outsized impact on global financial markets. EMs are especially vulnerable to the Fed's tightening and easing

cycles. But some EMs 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 for investigating our research question because it contains big shocks such as the global financial crisis, the taper tantrum, and the COVID-19 pandemic, which induced sharp swings in US monetary policy. Cross-sectional regressions explored the link between ex-ante macroeconomic and institutional variables and three measures of resilience—bilateral exchange rate against the US dollar, EMP (Goldberg and Krogstrup 2023), and economy-specific MSCI index. At a broader level, our analysis confirms that ex-ante macroeconomic and institutional variables do matter, determinants of resilience differ during US 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 EMs 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 US monetary policy swings. This reinforces the conventional wisdom that strong fundamentals protect EMs. Our study contributes to the literature on emerging-market resilience to US monetary policy by analyzing the behavior of three measures of resilience over a time period that 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 US Fed. Another idea is to replicate our exercise for the European Central Bank or the People's Bank of China. 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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The Performance of Emerging Markets During the Fed’s Easing and Tightening Cycles

A Resilience Analysis Across Economies

This study investigates the determinants of emerging markets performance during five United States Federal Reserve monetary tightening and easing cycles from 2004 to 2023. It shows how macroeconomic and institutional variables are associated with emerging markets’ performance, determinants of resilience differ during tightening versus easing cycles, and institutions matter more during difficult times. Findings are largely consistent with economic intuition, i.e., current account balance, international reserves, and inflation are all important determinants of emerging markets resilience.

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