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On the Effectiveness of Foreign Exchange Reserves during the 2021-22 U.S. Monetary Tightening Cycle*

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Abstract

This paper examines whether levels of foreign exchange (FX) reserves and other fundamental factors explain cross-country differences in foreign currency depreciation observed over the 2021-22 Federal Reserve monetary policy tightening that led to a sharp appreciation of the US dollar. Considering a broad cross-section of countries, we document that an additional 10 percentage points of FX reserves/GDP held *ex-ante* were associated with 1.5 to 2 percent less exchange rate depreciation and this buffer effect was larger among less financially developed economies. Higher *ex-ante* policy rates were also associated with less depreciation, especially among financially open economies. Taken together, these results support the buffering role of FX reserves and their potential to promote monetary policy independence in the presence of international spillovers.

Keywords: International Reserves, Trilemma, Global Financial Cycle, Currency Risk, Spillovers
JEL: F3, F31, F32, F36

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1. Introduction

2022 marked an unprecedented acceleration of inflation that prompted the Federal Reserve to embark on its most aggressive monetary tightening cycle since at least 1983. With rising US interest rates and central bank balance sheet reduction underway, the US broad dollar appreciated more than 15% from May 2021 to September 2022 (Figure 1). Figure 2 shows that foreign currency depreciations against the dollar over this period were large but highly uneven, and it remains unclear whether such differential exchange rate adjustments can be traced back to differences in country fundamentals and policy configurations.

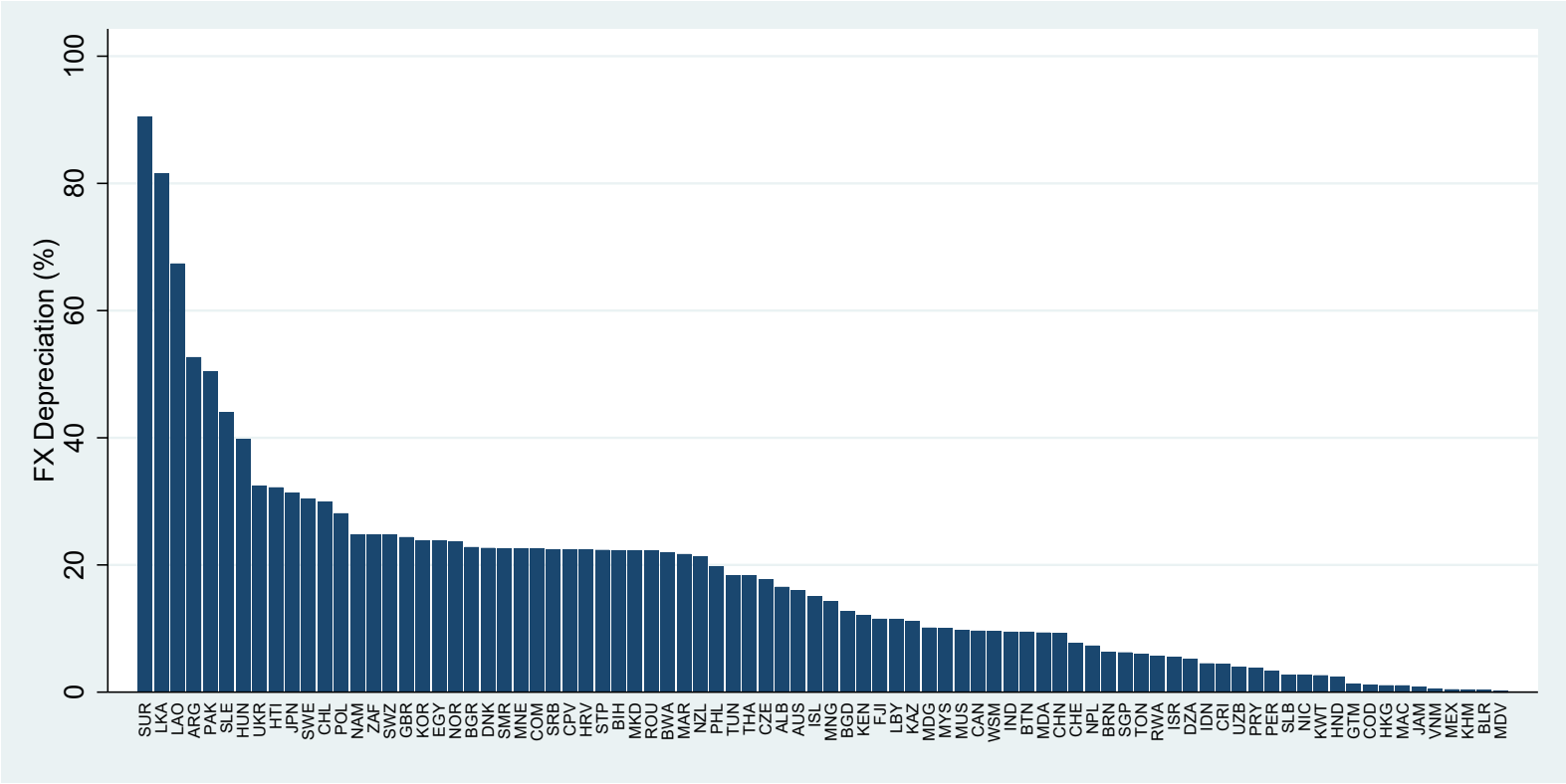
Figure 1: The nominal broad US dollar index

Note: Vertical dashed lines correspond to the episode of US dollar appreciation we study. Source: FRED. The broad nominal dollar index is a weighted average of dollar exchange rates against U.S. major trading partners.

This paper systematically examines the fundamental drivers of currency depreciation observed across countries during this episode, with a specific focus on the buffering role of foreign exchange (FX) reserves. To this end, we study the cross-section of currency depreciations realized over May 2021-September 2022 resulting from the unexpected and sharp US dollar appreciation. We test whether holding FX reserves mitigated depreciation pressures while controlling for cross-country differences in macroeconomic policies and economic fundamentals. This recent episode of US dollar appreciation presents a novel setting to test the effectiveness of FX reserves, as the extent of global market stress during this period was not just unexpected, but it also generated large and heterogeneous spillovers to the rest of the world.

We find that over the May 2021-September 2022 period, countries holding larger FX reserves *ex-ante*, i.e., in 2020, realized significantly less currency depreciation. An additional 10 percentage points of FX reserves/GDP held were associated with 1.5 to 2 percent less depreciation, and this effect was stronger among less financially developed economies. Countries with higher *ex-ante* policy rates also realized significantly less *ex-post* depreciation, and this association was stronger in more financially open countries.

Figure 2: Cross-country distribution of FX depreciation from May 2021 to September 2022



Note: FX depreciation on the y-axis corresponds to the percent depreciation against the US dollar.

We add to the literature on reserves accumulation (Aizenman and Lee, 2007; Cabezas and De Gregorio, 2019; Chinn et al., 2022) by studying the consequences of holding reserves in the presence of international spillovers (Aizenman and Riera-Crichton, 2008; Dominguez et al., 2012; Kohlscheen, 2020). Specifically, we treat the recent 2021-22-dollar appreciation episode as an external shock to the rest of the world that allows us to identify the buffering role of holding reserves on exchange rates. Closely related to our work are Eichengreen and Gupta (2015), Aizenman et al. (2016), and Ahmed et al. (2017) which test the buffering effects of reserves and fundamentals during the 2013 Taper Tantrum. However, these studies find mixed results on the role of FX reserves. Our analysis extends the literature by harnessing a large cross-section of countries to present new evidence on the buffering role of FX reserves and other fundamentals during one of the steepest episodes of US monetary tightening in recent decades.

2. Empirical framework

Our empirical strategy follows the cross-sectional regression analyses of Eichengreen and Gupta (2015), Ahmed et al. (2017), and Ahmed (2020).[1] First, consider a simple two-period setup in the spirit of differences-in-differences:

$$p_{it} = \mu + \gamma_i + \delta_t + \boldsymbol{\beta} X_i D_t + \epsilon_{it} \tag{1}$$

where p_{it} is the log exchange rate vis-à-vis the USD for country i in period $t \in \{0, 1\}$. Period 0 denotes the period before the dollar appreciation began and Period 1 denotes the treatment period of dollar appreciation. Country and time-fixed effects are given by γ_i and δ_t, respectively. The variable X_i contains a set of *ex-ante* or pre-treatment values of country fundamentals and currency factors including FX reserves, and D_t denotes an indicator equal to 0 in the pre-event period and equal to 1 in the treatment period. The vector of coefficients of interest, $\boldsymbol{\beta}$, captures the relationship between country i's *ex-ante* country fundamentals and its *ex-post* depreciation vis-à-vis the dollar. Because our setting involves two periods, the specification can be expressed in a simpler form by taking differences of the dependent variable to consider the exchange rate return over the treatment period:

$$\Delta p_i = \alpha + \boldsymbol{\beta} X_i + u_i \tag{2}$$

where $\Delta p_i = p_{i1} - p_{i0}$, $\alpha = \delta_1 - \delta_0$ and $u_i = \epsilon_{i1} - \epsilon_{i0}$. Therefore, our empirical specification takes the form of a cross-sectional regression of the percent depreciation of currency i over the treatment period May 2021 to September 2022 on *ex-ante* fundamentals observed before the treatment period.

We provide details on the covariates considered in the online appendix: FX reserves, policy rates, GDP, inflation, current account balance, net international investment position (NIIP), financial development, financial openness, trade openness, *de facto* exchange rate stability, trade exposure to oil and fuel, and external debt.

[1] Eichengreen and Gupta (2015) and Ahmed et al. (2017) use cross-sectional regressions to investigate the determinants of exchange rate changes over the 2013 Taper Tantrum period. Ahmed (2020) examines cross-sectional exchange rate changes of oil exporters and importers following an unexpected oil supply shock in 2019.

3. Results

Regression results examining the sample of depreciating currencies over the 2021-22-dollar appreciation episode are reported in Table 1. Results examining both appreciating and depreciating currencies report similar results in Table A.3 of the online appendix.

Across all specifications, the level of *ex-ante* FX reserves is significantly associated with lower *ex-post* currency depreciation against the USD. Column 2, for example, suggests that for every additional +10 percentage points (pp) of FX reserves/GDP held, the exchange rate depreciated 1.7 percent less against the dollar. The effect of holding reserves is also heterogeneous and stronger among less financially developed countries (columns 3, 4, 5). Higher policy rates also appeared to help stem currency depreciation. A policy rate that was 1 pp higher was associated with 0.348 percent less depreciation against the dollar (column 2), and this effect is substantially larger among more financially open countries (columns 3, 4, 5). These results suggest some substitutability between holding FX reserves and using the policy rate for exchange rate management, and also that holding FX reserves might enable domestic monetary policy to better target domestic objectives. Column 5 includes external debt as a control. Althought the sample size is reduced, larger external debt positions, larger NIIP and larger current account deficits all appear associated with greater currency depreciation.

Table A.4 of the online appendix provides selected results on regional sub-samples by interacting FX reserves with regional indicator variables. Within some regions such as Latin America, Middle East and North Africa, and Sub-Saharan Africa, the negative association between *ex-ante* FX reserves and *ex-post* currency depreciation was especially pronounced.

4. Concluding remarks

This paper presents new evidence on the buffering effect of holding FX reserves on currency depreciation during the recent Fed tightening episode and ensuing US dollar appreciation observed from May 2021 to September 2022. Using a broad cross-section of countries, we document statistically and economically significant estimates implying that on average, every additional 10 percentage points of FX reserves/GDP were associated with 1.5 to 2 percent less exchange rate depreciation. This buffering effect of reserves is larger among less financially developed countries. Higher *ex-ante* policy rates were also associated with less curency depreciation, and the effects of higher policy rates were stronger in more financially open economies.

Table 1: Dependent variable: FX change from May 2021- Sep 2022 (%), depreciations only

	(1) Δp_i	(2) Δp_i	(3) Δp_i	(4) Δp_i	(5) Δp_i
FX Reserves/GDP (2020)	-0.1778***	-0.1734**	-0.4474**	-0.3517***	-1.0165***
	(0.0506)	(0.0757)	(0.1907)	(0.1221)	(0.2158)
FX Reserves/GDP × Fin. Institutions			0.3400	0.2782**	1.4192***
			(0.2066)	(0.1371)	(0.3939)
Policy Rate (2020)		-0.3481	-0.8956	-1.3140**	-1.7930**
		(0.4323)	(0.7172)	(0.5022)	(0.7418)
Policy Rate × Fin. Openness			-0.4343	-0.4601	-0.5298
			(0.4778)	(0.3281)	(0.5058)
Δ Policy Rate, 2021Q2-22Q2		0.1887	0.2442		-0.8288**
		(0.4984)	(0.5617)		(0.3840)
Rel. GDP per Capita (2019)		0.0333	-0.0163		-1.1476***
		(0.0411)	(0.0520)		(0.3695)
Rel. CPI (2019)		-0.0204	-0.0348		-0.0045
		(0.0422)	(0.0436)		(0.0487)
Current Account/GDP (2019)		0.1521	-0.0807		-0.7433***
		(0.2330)	(0.3095)		(0.2360)
NIIP/GDP (2019)		0.0016	0.0089		0.1141**
		(0.0151)	(0.0163)		(0.0422)
Exchange Rate Stability (2019)		-10.3033	-4.5642		0.6444
		(8.7014)	(9.5489)		(8.7417)
Trade Openness (2019)		0.0324	0.0339		-0.0068
		(0.0514)	(0.0542)		(0.0912)
Oil & Fuel Exports (2019)		-0.1080	-0.0567		0.0627
		(0.0876)	(0.0930)		(0.1491)
Oil & Fuel Imports (2019)		-0.0216	0.0711		-0.2740
		(0.2167)	(0.3363)		(0.3653)
External Debt/GNI (2019)					0.1245
					(0.0770)
Constant	23.3637***	24.9982***	26.6400***	22.5877***	38.5309***
	(3.0280)	(7.7439)	(9.1281)	(2.6189)	(12.8417)
Observations	84	52	51	51	32
R-squared	0.0909	0.2304	0.2716	0.2283	0.5225
RMSE	16.16	10.25	10.32	9.524	8.688

Notes: Regressions include countries with depreciations below 100% during the 2021-2022 US dollar appreciation. Countries with zero exchange rate variation during the episode are excluded. Column 4 considers all variables from column 3 but uses a backward variable selection procedure with a threshold of 20% for the p-value. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

References

Ahmed, R. (2020), 'Commodity currencies and causality: Some high-frequency evidence', *Economics Letters* **189**, 109016.

Ahmed, S., Coulibaly, B. and Zlate, A. (2017), 'International financial spillovers to emerging market economies: How important are economic fundamentals?', *Journal of International Money and Finance* **76**, 133–152.

Aizenman, J., Binici, M. and Hutchison, M. M. (2016), 'The transmission of federal reserve tapering news to emerging financial markets', *International Journal of Central Banking* **12**(2), 317–356.

Aizenman, J. and Lee, J. (2007), 'International reserves: precautionary versus mercantilist views, theory and evidence', *Open Economies Review* **18**, 191–214.

Aizenman, J. and Riera-Crichton, D. (2008), 'Real exchange rate and international reserves in an era of growing financial and trade integration', *The Review of Economics and Statistics* **90**(4), 812–815.

Cabezas, L. and De Gregorio, J. (2019), 'Accumulation of reserves in emerging and developing countries: mercantilism versus insurance', *Review of World Economics* **155**, 819–857.

Chinn, M. D., Ito, H. and McCauley, R. N. (2022), 'Do central banks rebalance their currency shares?', *Journal of International Money and Finance* **122**, 102557.

Dominguez, K. M., Hashimoto, Y. and Ito, T. (2012), 'International reserves and the global financial crisis', *Journal of International Economics* **88**(2), 388–406.

Eichengreen, B. and Gupta, P. (2015), 'Tapering talk: The impact of expectations of reduced Federal Reserve security purchases on emerging markets', *Emerging Markets Review* **25**, 1–15.

Kohlscheen, E. (2020), 'Limiting risk premia in EMEs: The role of FX reserves', *Economics Letters* **196**, 109567.

Online appendix — On the Effectiveness of Foreign Exchange Reserves during the 2021-22 U.S. Monetary Tightening Cycle

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Appendix A. Descriptive statistics, data definitions and robustness

Table A.1: Descriptive statistics

Variables	N	Mean	SD	Min	Max
FX Change	124	16.57	57.14	-33.99	606.8
FX Reserves/GDP (2020)	124	29.79	26.42	0.148	144.1
Policy Rate (2020)	107	3.583	5.072	-0.75	38
Policy Rate Change, 2021Q2-22Q2	96	1.612	3.106	-5	15.85
Rel. GDP per Capita (2019)	124	24.96	32.06	0.789	143.5
Rel. CPI (2019)	116	128.2	52.57	84.46	433.6
Current Account (2019)	120	-1.937	8.564	-34.36	33.9
NIIP (2019)	120	-9.697	153.2	-271.2	914.8
Fin. Openness (2019)	116	0.404	1.51	-1.927	2.311
Fin. Institutions (2019)	119	0.467	0.197	0.0786	0.935
Exchange Rate Stability (2019)	116	0.605	0.286	0.0605	1
Trade Openness (2019)	115	90.44	56.2	26.45	353.8
Oil & Fuel Exports (2019)	105	15.46	25.06	0	95.24
Oil & Fuel Imports (2019)	108	13.84	7.211	0.528	33.96
External Debt (2019)	80	57.43	39.22	3.278	250.5

Note: Descriptive statistics for full sample of data collected. Details on data description and sources are found in the Appendix. All variables are in units of percentages except Financial Openness, Financial Institutions, and Exchange Rate Stability.

Our outcome variable is the percent depreciation in the exchange rate against the US dollar (positive values indicate foreign currency depreciation). We exclude countries that realized depreciations over the period exceeding 100%.[2] We consider 2020 levels of FX Reserves/GDP our main covariate of interest, with detail on data and sources for all covariates provided in Tables A.1 and A.2. Figure A.1 plots *ex-ante* FX Reserves/GDP against subsequent exchange rate changes against the dollar from May 2021 - September 2022. The left-panel shows that conditioning on just currencies that depreciated, the correlation between reserves and exchange rate changes is -0.317 and significant at the 1% level (N=84). The right-panel plots FX reserves against both appreciations and depreciations (N=96). The correlation between the two variables is -0.196, and it is significant at the 7% level.

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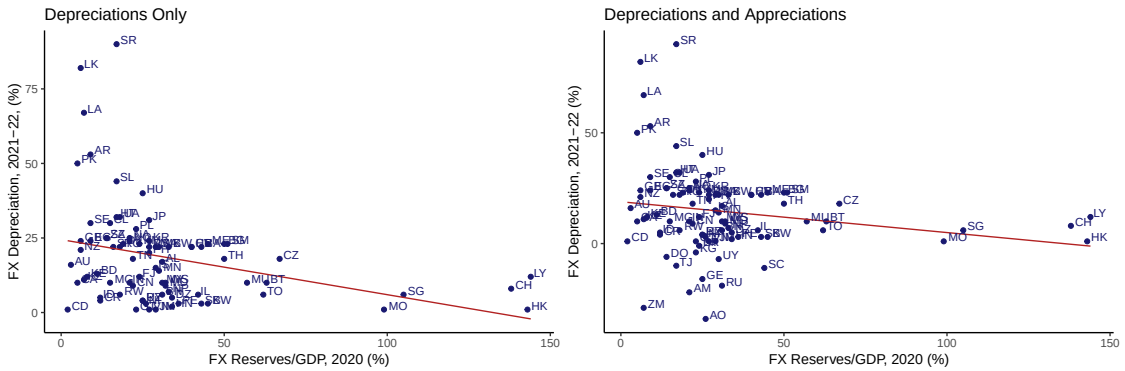
[2]Two countries are excluded: Turkey and Zimbabwe. Our results are not driven by outliers and are robust to excluding additional countries that realized very large depreciations but less than 100%.

Figure A.1: Effectiveness of reserves: Ex-ante reserves and ex-post FX depreciation



Note: FX depreciation on the y-axis corresponds to percent change against the US dollar from May 2021 to September 2022. Left panel: the correlation between reserves and exchange rate changes is -0.317 and significant at the 1% level (N=84). Right panel: the correlation between the two variables is -0.196 and it is significant at the 7% level (N=96).

We provide the country list for information: Albania, Algeria, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei, Darussalam, Bulgaria, Cabo Verde, Cambodia, Canada, Cayman Islands, Chile, China, Comoros, DR Congo, Costa Rica, Croatia, Czech Republic, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Eswatini, Fiji, Georgia, Grenada, Guatemala, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Israel, Jamaica, Japan, Kazakhstan, Kenya, Korea, Kuwait, Kyrgyzstan, Lao PDR, Lebanon, Libya, Macao, Madagascar, Malaysia, Maldives, Mauritius, Mexico, Micronesia, Moldova, Mongolia, Montenegro, Morocco, Namibia, Nepal, New Zealand, Nicaragua, North Macedonia, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Qatar, Romania, Russian Federation, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Serbia, Seychelles, Sierra Leone, Singapore, Solomon Islands, South Africa, Sri Lanka, Suriname, Sweden, Switzerland, Tajikistan, Thailand, Timor-Leste, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, United Kingdom, United States, Uruguay, Uzbekistan, Viet Nam, Zambia, Zimbabwe.

Table A.2: Data source

Variables	Definition	Source	Identifier \ website
FX Change	Percent change of exchange rate against the US dollar between May 2021 and September 2022	International Financial Statistics, IMF	ENDA_XDC_USD_RATE
FX Reserves/GDP	International-reserves-to-GDP ratio in 2020	World Development Indicators, World Bank	FI.RES.XGLD.CD; NY.GDP.MKTP.CD
Policy Rate	Policy rate in 2020Q4	International Financial Statistics, IMF	FPOLM_PA
Policy Rate Change	Variation of policy rate between 2021Q1 and 2022Q2. When unavailable, deposit rates were used	International Financial Statistics, IMF	FPOLM_PA
Deposit Rate	Deposit rate in 2020Q4	International Financial Statistics, IMF	FIDR_PA
Deposit Rate Change	Variation of deposit rate between 2021Q1 and 2022Q2	International Financial Statistics, IMF	FIDR_PA
Relative GDP per Capita	GDP per capita in 2019 relative to the US	World Development Indicators, World Bank	NY.GDP.PCAP.KD
Relative CPI	Consumer price index in 2019 relative to the US	International Financial Statistics, IMF	PCPI_IX
Current Account	Current account balance in 2019	World Development Indicators, World Bank	BN.CAB.XOKA.GD.ZS
NIIP	Net international investment position in 2019	Lane and Milesi-Ferretti's database	https://www.brookings.edu/research/the-external-wealth-of-nations-database/
Financial Openness	Capital account openness in 2019	Chinn and Ito's database	https://web.pdx.edu/ito/Chinn-Ito_website.htm
Financial Institutions	Financial Institutions in 2019	Financial Development Index, IMF	FD_FI_IX
Exchange Rate Stability	Exchange rate stability in 2019	Aizenman, Chinn and Ito's database	https://web.pdx.edu/ ito/trilemma_indexes.htm
Trade Openness	Trade openness (exports plus imports on GDP) in 2019	World Development Indicators, World Bank	NE.TRD.GNFS.ZS
Oil and Fuel Exports	Fuel exports on total exports in 2019	World Development Indicators, World Bank	TX.VAL.FUEL.ZS.UN
Oil and Fuel Imports	Fuel imports on total imports in 2019	World Development Indicators, World Bank	TM.VAL.FUEL.ZS.UN
External debt stocks	External debt stocks (% of GNI) in 2019	World Development Indicators, World Bank	DT.DOD.DECT.GN.ZS

Table A.3: Dependent variable: FX change from May 2021- Sep 2022 (%), appreciations and depreciations

	(1) Δp_i	(2) Δp_i	(3) Δp_i	(4) Δp_i	(5) Δp_i
FX Reserves/GDP (2020)	-0.1346**	-0.1997**	-0.5559**	-0.4593***	-1.2413***
	(0.0527)	(0.0840)	(0.2266)	(0.1516)	(0.2819)
FX Reserves/GDP × Fin. Institutions			0.4118	0.3293**	1.8162***
			(0.2686)	(0.1628)	(0.5051)
Policy Rate (2020)		-1.6162*	-2.2681***	-2.2521***	-2.7896***
		(0.8617)	(0.6333)	(0.5158)	(0.7129)
Policy Rate × Fin. Openness			-0.9295***	-0.8119**	-1.1436**
			(0.3102)	(0.3111)	(0.4152)
Δ Policy Rate, 2021Q2-22Q2		-0.2225	-0.2510		-1.6704**
		(0.5033)	(0.5162)		(0.6459)
Rel. GDP per Capita (2019)		0.0433	-0.0162		-0.8672**
		(0.0474)	(0.0582)		(0.4047)
Rel. CPI (2019)		0.0234	-0.0197		0.0299
		(0.0493)	(0.0416)		(0.0612)
Current Account/GDP (2019)		-0.1250	-0.4430	-0.4243	-1.0124***
		(0.2510)	(0.3161)	(0.2606)	(0.2821)
NIIP/GDP (2019)		0.0214	0.0263	0.0291	0.0835
		(0.0183)	(0.0199)	(0.0192)	(0.0504)
Exchange Rate Stability (2019)		-4.9790	1.8782		8.0996
		(8.8888)	(7.9810)		(9.4675)
Trade Openness (2019)		0.0043	0.0250		-0.0816
		(0.0583)	(0.0557)		(0.0992)
Oil & Fuel Exports (2019)		-0.1908	-0.1550	-0.1828	-0.2579
		(0.1278)	(0.1441)	(0.1349)	(0.1691)
Oil & Fuel Imports (2019)		-0.0882	0.0058		-0.5003
		(0.2964)	(0.3630)		(0.3900)
External Debt/GNI (2019)					0.1779**
					(0.0753)
Constant	18.0102***	22.2360**	27.7097***	26.2569***	37.9427***
	(3.2246)	(9.1793)	(9.9409)	(3.5602)	(11.1808)
Observations	96	61	60	60	39
R-squared	0.0360	0.3077	0.4283	0.4164	0.5811
RMSE	18.90	12.92	12.11	11.51	11.18

Notes: Regressions include countries realizing both appreciations and depreciations during the 2021-2022 US dollar appreciation. Countries with zero exchange rate variation during the episode are excluded. Column 4 considers all variables from column 3 but uses a backward variable selection procedure with a threshold of 20% for the p-value. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table A.4: Regressions with country group interactions, depreciations only

	(1) LAC Δp_i	(2) MENA Δp_i	(3) SSA Δp_i
Reseres/GDP (2020)	-0.1511***	-0.1211***	-0.0914***
	(0.0298)	(0.0275)	(0.0269)
Reserves/GDP × LAC	-0.4733***		
	(0.0816)		
MENA		27.6067***	
		(3.7692)	
Reserves/GDP × MENA		-0.8433***	
		(0.1011)	
SSA			14.2850***
			(3.9840)
Reserves/GDP × SSA			-0.2974***
			(0.0850)
Policy Rate (2020)	-1.5347***	-1.8501***	-1.1401***
	(0.4704)	(0.5182)	(0.3834)
Policy Rate × Fin. Openness	-0.4722	-0.6784*	
	(0.3045)	(0.3626)	
Oil & Fuel Exports (2019)	-0.0721		
	(0.0517)		
Exchange Rate Stability (2019)			-12.0498**
			(5.6815)
Constant	24.4379***	21.5489***	24.4649***
	(2.5491)	(2.5227)	(3.7702)
Observations	51	51	51
R-squared	0.3772	0.2918	0.2521
RMSE	8.651	9.225	9.479

Notes: Regressions include countries with depreciations below 100% during the 2021-2022 US dollar appreciation. Countries with zero exchange rate variation during the episode are excluded. In these regressions, we use a backward variable selection procedure with a threshold of 20% for the p-value. Country groups with no significant differences from the results in Table 1 are not shown to save space. Country group composition in these regressions: LAC: Argentina, Chile, Costa Rica, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Suriname; MENA: Egypt, Israel, Kuwait, Morocco; SSA: Botswana, Eswatini, Madagascar, Mauritius, Namibia, Rwanda, South Africa. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.