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Policies in Hard Times: Assessing the Impact of Financial Crises on Structural Reforms[*]

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Abstract

It is argued that crises open up a window of opportunity to implement policies that otherwise would not have the necessary political backing. The argument goes that the political cost of deep reforms declines as crises unravel structural problems that need to be urgently rectified and the public is more willing to bear the pains associated with such reforms. This paper casts doubt on this prevalent view by showing that not only the crises-reforms hypothesis is unfounded in the data, but rather crises are associated with slowing structural reforms depending on the institutional environment. In particular, we look at measures of liberalization in international trade, agriculture, network industries, and financial markets. We find that, after a financial crisis, democracies neither open nor close their economy. On the contrary, autocracies reduce liberalizations in multiple economic sectors, as the fear of regime change might lead non-democratic rulers to please vested economic interests.

Keywords: Financial crises, structural reforms, institutional systems, IMF programs, government crises, public opinion.

JEL classification codes: E44, G01, L51, P16.

1 Introduction

It has long been argued that to achieve economic health, countries often need to make changes to the basic structure of their economies. Structural reforms are deemed to raise productivity and growth by improving the technical efficiency of markets and of the broader institutional environment, or by reducing impediments to the efficient allocation of resources. These reforms range from measures as diverse as banking supervision and property right laws to changes in tariff rates or rules on hiring and firing. In the past few years, the debate on the causes and the consequences of structural reforms has been ignited once again as the global economy has slowed and monetary and fiscal policies have arguably reached their limits in helping countries rebound.

While a considerable body of work has been devoted to investigating the *consequences* of reforms—e.g., see Billmeier and Nannicini (2013), Easterly (2005), Rodrik (2006), Quinn and Toyoda (2008), Williamson and Mahar (1998), Rodrik et al. (2004), Spilimbergo et al. (2009), Prati et al. (2013)—what is much less examined are the potential *causes* of structural reforms (Høj et al. (2007), OECD (2012)). One prevailing view on the causes of structural reforms is that (economic or financial) crises could more easily lead to reforms, because the political cost of deep reforms declines as crises unravel structural problems that need to be urgently rectified and the public is more willing to bear the pains associated with such reforms. While there is considerable anecdotal evidence to suggest a catalytic role of crises in driving the reform process, whether this constitutes an empirical regularity is an issue that needs to be addressed by looking at the data.

This paper empirically examines the crises-reforms hypothesis. Specifically, we implement a difference-in-differences analysis in a panel of 70 advanced and developing countries to examine whether financial crises are a major precursor to structural reforms. Data on several kinds of real and financial reforms first constructed by the IMF in the late 2000s, combined with data on the incidence of financial crises, make up the bulk of the necessary data for the empirical analysis. The main findings of the paper are twofold. First, we provide empirical evidence contrary to the prevailing view in the literature—namely, that the crises-reforms hypothesis is unfounded in the data. Second, we document that crises could in fact trigger a reduction in structural reforms depending on the institutional environment, democratic vs. autocratic.

In democracies, we find no effect of financial crises on liberalizations, while we show that crises have a positive effect on both political instability and IMF intervention, whose combined pressure (internal and external) might lead to a stop-and-go strategy and a *de facto* stalemate in the reforms agenda. These results are in line with Mian et al. (2014), who find that polarization and political gridlock in the aftermath of a crisis might hamper liberalizations in the financial sector.

In autocracies, we show that, after a crisis, liberalizations step back in multiple economic sectors, while anti-government demonstrations, anti-market attitudes in the public opinion, and the probability of regime change all increase. This evidence conveys the picture of non-democratic rulers tending to please vested economic interests in an attempt to reduce the probability of being overthrown after a financial crisis. Our results for autocracies are complementary to those by Giuliano et al. (2013), who find that democracy—on average, considering both periods of booms

and recessions—fosters structural reforms, while there is no effect of reforms on democracy. We find that non-democracies are more prone to shut down liberalization oriented reforms in the aftermath of a crisis, and this indeed might be motivated by the fear of regime change in hard times.

The remainder of the paper is organized as follows. Section 2 frames the paper in the existing literature by providing a brief review. Section 3 describes the datasets used in the empirical analysis and presents stylized facts. Section 4 presents the main results of the paper and explores the potential mechanisms that can explain these results. Section 5 concludes.

2   Related Literature

Mian et al. (2014) is the paper most closely related to ours. Their main focus is the political gridlock and polarization in the aftermath of financial crises as a mechanism of reform laggardness. They look at reforms in the financial sector only and find a "zero effect" result, although they acknowledge that most of the zeros are not precisely estimated. We differ from their contribution both in our main focus on the effect of financial crises on structural reforms (not only financial but all types of reforms) and in the mechanisms at play. We find a negative and significant effect of crises on multiple structural reforms. In terms of mechanisms, their argument is mostly about democracies and how in democracies political power struggles may block the implementation of reforms when there is stronger opposition or more ideological fragmentation. In contrast, we distinguish between regime types (democracies vs. autocracies) as the drivers of our results. We show that the negative reforms behavior is driven by autocracies rather than democracies, and this may be explained by both the rulers' fear of regime change and people's attitudes toward the market.

The literature concerned with the causes and the consequences of structural reforms can be traced back to the key ideas in Adam Smith's Wealth of Nations about government's involvement in the economy with controls such as tariffs. More recently, how to change the fundamental aspects of the structure of an economy has been considered in more depth—seminal papers include McKinnon (1973) on financial sector reforms, and Sachs and Warner (1995) and Krueger (1997). The last two decades have seen a major surge in many different kinds of reforms adopted (or imposed) by countries around the globe. And as expected, these developments were accompanied by further interest in academic and policy circles to better understand and analyze the effects of reforms. Growing interest in the subject continues unabated with contributions being made over the last few years including Billmeier and Nannicini (2013), Christiansen et al. (2013), Estevadeordal and Taylor (2013), Giuliano et al. (2013), Prati et al. (2013), IMF (2015), Billmeier and Nannicini (2011), Quinn and Toyoda (2008), and Duval and Furceri (forthcoming), among others.

There is a broad consensus in the literature that structural reforms, particularly policy interventions aimed at promoting domestic financial development, trade, and labor and product market liberalization can invigorate economic growth, especially in the medium term (e.g., see the recent literature reviews in IMF (2015) and OECD (2016)). Structural reforms may serve to boost aggregate income by promoting both faster capital accumulation and a more efficient allocation

of resources. Worth noting though that the literature does not have a consensus on the role of reforms in the growth process; e.g., see Easterly (2005) and Rodrik (2006) for alternative viewpoints. Different strands of this literature focus on particular types of reforms including domestic financial sector reforms—e.g., Levine (1997, 2005), Williamson and Mahar (1998), Abiad and Mody (2005), Bekaert et al. (2005), Abiad et al. (2010); capital account openness—e.g., Quinn (1997), Quinn and Toyoda (2008), Quinn et al. (2011), Schindler (2009), Fernández et al. (2015); product market reforms—e.g., Conway and Nicoletti (2006), Giuliano and Scalise (2009), OECD (2016); trade tariffs—e.g., Sachs and Warner (1995), Berg and Krueger (2003).

Turning to the literature on the causes of reforms, admittedly it received less attention and there is little empirical evidence. Exceptions include Kaminsky and Reinhart (1999), Drazen and Grilli (1993), Drazen and Easterly (2001), Abiad and Mody (2005), Alesina et al. (2006), Mian et al. (2014), and Campos et al. (2010). One prominent hypothesis on the causes of structural reforms is the presence of crises that may open a window of political will to implement policies that otherwise would have been very costly (politically and economically) to see through. Crises as a potential mechanism for unlocking macroeconomic reforms are investigated by Krueger (1993) and Drazen and Grilli (1993). A crisis may create the potential for reform by destabilizing cooperation among different interest groups (Drazen and Easterly, 2001). Abiad and Mody (2005) also argue that reforms may be triggered by shocks; shocks alter the balance of decision-making power, leading to both reforms and reversals. Furthermore, Alesina et al. (2006) find that stabilizations are more likely to take place in times of crisis. We show that the crises-reforms hypothesis is unfounded in the data, at least when we look at liberalization oriented reforms.

Our result on non-democratic regimes reducing liberalizations after a crisis also relates to the literature on the political economy of autocracies. In the seminal contributions by Acemoglu and Robinson (2000, 2001), the political equilibrium rests on the excluded groups' threat of unrest against the incumbent ruler. By a similar token, incumbents could instead exploit weak institutions to buy-off opposing groups whenever they try to coordinate to overthrow the regime (Acemoglu et al., 2004). Taydas and Peksen (2012) show that welfare state spending is instrumental in the prevention of civil conflicts. Indeed, reducing liberalizations might be an alternative tool to please key economic groups and reduce the likelihood of unrest, especially when the opportunity cost of government spending increases because of a financial crisis.

Finally, as we use new data on IMF intervention as a proxy of external pressure on political decision making, our paper relates to the studies that have estimated the macroeconomic impact of IMF-sponsored programs. Barro and Lee (2005) find that a higher IMF loan-participation rate reduces growth, but has no significant effects on investment, inflation, government consumption, and trade openness. Przeworski and Vreeland (2000) show that growth rates remain lower as long as a country is under an IMF program, but rise once a country leaves the program. Dreher (2006) suggests that IMF programs reduce growth when their endogeneity is accounted for, but compliance with conditionality somewhat mitigates this effect. For low-income borrowers, Dicks-Mireaux et al. (2000) estimate a positive effect on growth and debt-service ratio, but no effect on

inflation. Vreeland (2001) suggests that the labor share of income from manufacturing decreases when a country participates in an IMF program. Garuda (2000) finds evidence of a deterioration in income distribution and poverty for program countries where external imbalance was severe, but an improvement for countries with less severe external imbalance. Easterly (2000) finds that structural adjustment lending by IMF and the World Bank lowers the growth elasticity of poverty, but detects no evidence for a direct effect on growth.

3   Data and Stylized Facts

This section describes the data employed in the analysis and provides some descriptive statistics and stylized facts. We use information from the database "Dates for Banking Crises, Currency Crashes, Sovereign Domestic or External Default (or Restructuring), Inflation Crises, and Stock Market Crashes (Varieties)" compiled by Carmen Reinhart and Kenneth Rogoff to identify the years of occurrence of financial crises.[1] The database, spanning the period 1800-2010, covers 70 countries and builds upon Reinhart (2010) and Reinhart and Rogoff (2011). We combine Banking Crises, Inflation Crises, Domestic Debt Crises, and External Debt Crises to create a single measure of financial crisis given by the occurrence of any of the four crisis episodes under consideration. We, then, construct an indicator of post-crisis period, *Post-Crisis*, which takes value of one in the year of a crisis occurrence and in the following four years (five post-crisis years in total). *Post-Crisis* is our main variable of interest to evaluate reform behavior in the aftermath of financial crises. Table A.1 in the Appendix lists our crisis episodes. Out of 306 crisis episodes, 107 are banking crises, 106 are inflation crises, 25 are domestic debt crises, and 68 are external debt crises.

Structural reform indicators cover both the "financial sector" and the "real sector" of the economy (see Spilimbergo et al. (2009) and Prati et al. (2013)). The dataset's time series dimension is around 30 years (1973–2006) and comprises a large number of countries (91 advanced and developing economies). After matching the Reinhart and Rogoff's data on financial crises with the structural reform data, we are left with a dataset containing information on 70 countries for the period 1973–2006. Financial sector reform indicators include reforms pertaining to domestic financial markets, including banking and securities markets, as well as the external capital account, while real sector structural reform indicators include measures of product market and trade reforms. Specifically, we consider in our analysis seven measures of structural reforms.

Among the real sector reforms, *Agriculture* captures the degree of government regulation and intervention in the agricultural market. Two indicators measure openness to international trade: The first one (*Trade*) captures the degree of "tariff liberalization" as measured by the average tariff rate, whereas the second one (*Current Account*) provides us with the extent of restrictions placed by the government on the proceeds from international trade in goods and services. A fourth indicator (*Networks*) measures the degree of market liberalization in the telecommunication and electricity sectors. Among the financial sector reforms, *Banking* and *Securities Markets* measure the degree

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[1]Data are available at http://www.carmenreinhart.com/data/browse-by-topic/topics/7.

of liberalization in the banking and securities markets, respectively, and taken together they are meant to assess the degree of liberalization in the domestic financial sector.[2] The last indicator of financial sector reforms, *Capital Account*, measures the degree of openness of the external capital account as captured by the existence of controls on external borrowing and lending and on other forms of financial transactions between residents and non-residents in a country.

All the indicators of structural reforms take values between zero and one. Because of the different methodologies used to construct them, it is not possible to compare values of the different indicators to assess whether a sector is more or less liberalized than another. Figure 1 illustrates the evolution of these measures over time and suggests a tendency toward a higher degree of liberalization in all sectors under consideration.[3]
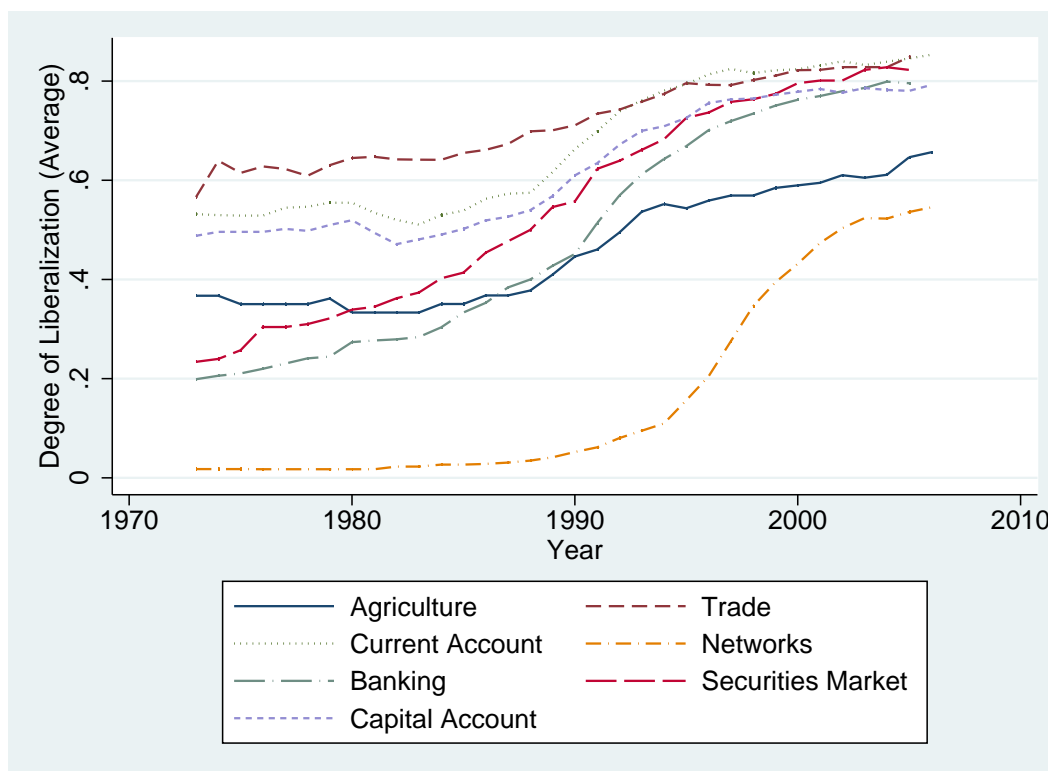
Figure 1   Average Liberalizations over Time

Furthermore, we make use of a variety of variables that allow us to better understand the mechanisms driving our results. We first look into political regime differences across countries. We use political regime classifications from Cheibub et al. (2010). Cheibub et al. (2010) categorize all countries as democracies and autocracies across different time periods, and this provides us with a dichotomous indicator of *Democracy*. Figure 2 provides some stylized facts on the total number of democratic and autocratic regimes over time with the total number of non-democratic regimes

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[2]The banking reform index is constructed by combining five sub-indices (Prati et al., 2013): "(i) credit controls, such as subsidized lending and directed credit; (ii) interest rate controls, such as floors or ceilings; (iii) competition restrictions, such as entry barriers; (iv) degree of state ownership; (v) quality of banking supervision and regulation."

[3]See Spilimbergo et al. (2009) and Prati et al. (2013) for more details on the definition and construction of these indicators. Data are available at https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/24300.

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steadily declining from the mid of the 1980s.[4] Table A.2 in the Appendix lists all available time intervals for democracies and autocracies in our sample.
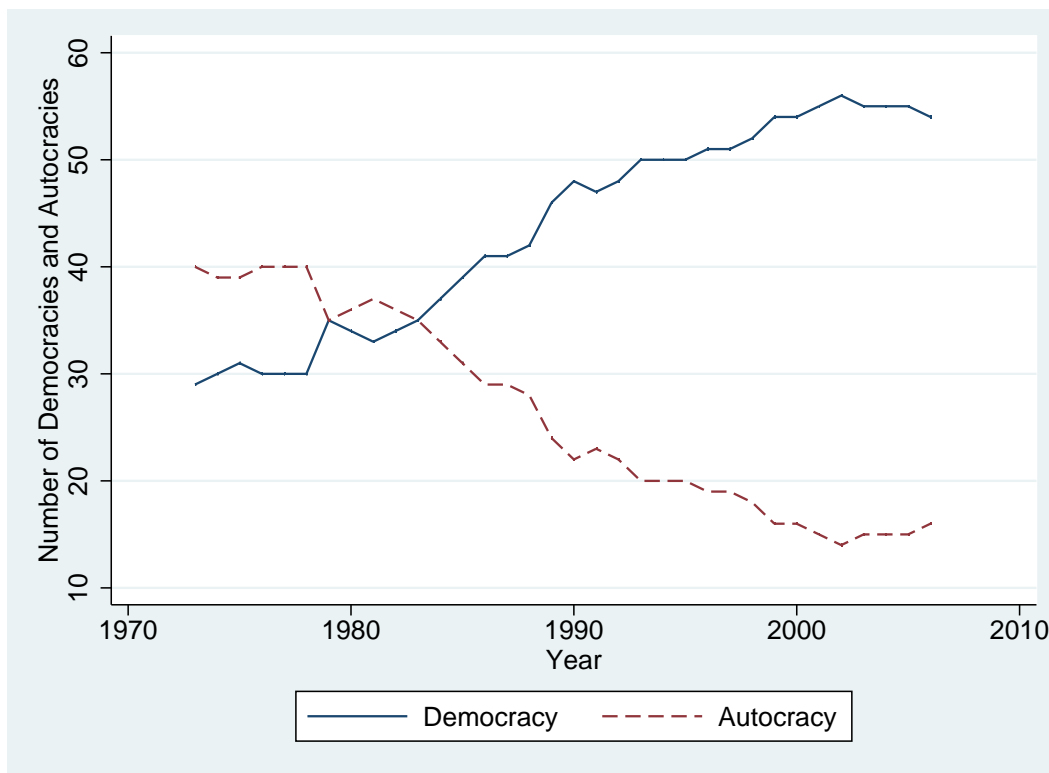

Figure 2   Total Number of Democracies and Autocracies over Time

In addition, for the period 1976-2013, we have collected novel IMF country engagement data digitized from the "IMF Archives" that reflect whenever the IMF was involved with a country in terms of loan provision and policy recommendation. This information allows us to create an *IMF Intervention* indicator whenever a country receives aid from the IMF. IMF involvement in a country in the aftermath of a crisis allows us to capture the degree of external pressure to reform and liberalize the economy.

To capture the internal political pressure on the government and the instances of political conflict in the aftermath of financial crises, we use measures of *General Strikes*, *Government Crisis*, and *Anti-Government Demonstrations* from the "Cross-National Time-Series Data Archive," which combines information on domestic conflict and other political, legislative, and economic data over the last two centuries.[5] In this dataset, *General Strikes* is defined as "any strike of 1,000 or more industrial or service workers that involves more than one employer and that is aimed at national

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[4]A country is classified as a democracy if the following criteria are met: Direct elections; elective legislature; multiple parties are allowed both *de jure* and *de facto*, they exist outside the regime front and the legislature has multiple parties; in a regime-year qualified as democracy the incumbent should not have unconstitutionally closed the lower house and written new rules in his favor. Data are available at https://sites.google.com/site/joseantoniocheibub/datasets/democracy-and-dictatorship-revisited. Our findings are robust to the use of an alternative definition of democracy vs. autocracy based on the Polity IV indicator (Nannicini and Ricciuti, 2010); results are available upon request.

[5]Data are available at https://www.cntsdata.com.

government policies or authority;" *Government Crisis* as "any rapidly developing situation that threatens to bring the downfall of the present regime, excluding situations of revolt aimed at such overthrow;" *Anti-Government Demonstrations* as "any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature." All of these three variables capture the number of associated episodes in a specific year.

Table 1   Summary Statistics

	Mean	Std. Dev.	Min	Max	Obs
Treatment and Institutions					
Post-Crisis	0.563	0.496	0	1	1,298
Democracy	0.633	0.482	0	1	1,298
Liberalization Indicators					
Agriculture	0.483	0.394	0	1	1,298
Trade	0.670	0.226	0	1	1,298
Current Account	0.633	0.268	0.1	1	1,298
Networks	0.152	0.247	0	0.9	1,298
Banking	0.448	0.290	0	1	1,298
Securities Market	0.479	0.355	0	1	1,298
Capital Account	0.578	0.274	0	1	1,298
External and Domestic Pressure					
IMF Intervention	0.409	0.492	0	1	1,298
General Strikes	0.282	0.716	0	6	1,298
Government Crisis	0.237	0.570	0	5	1,298
Anti-Government Demonstrations	1.094	2.261	0	26	1,298
World Values Survey Questions					
Private vs State Ownership	5.544	3.043	1	10	56,516
Competition Good vs Bad	3.651	2.734	1	10	56,516
Private vs State Ownership (dummy)	0.463	0.498	0	1	56,516
Competition Good vs Bad (dummy)	0.206	0.404	0	1	56,516
Signing Petitions	0.574	0.494	0	1	51,867
Joining Strikes or Demonstrations	0.484	0.500	0	1	51,867
Joining in Boycotts	0.325	0.468	0	1	51,867
Occupying Buildings or Factories	0.143	0.350	0	1	51,867

Finally, we use data from the "World Values Survey" (all waves) on general public attitudes toward market oriented policies.[6] The first question we use in our analysis captures people's opinion about private ownership vs. state ownership in the economy (*Private vs State Ownership*). The second question is about people's attitude toward market competition (*Competition Good vs Bad*). These two variables are measured on an intensity scale from 1 to 10, and higher values indicate

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[6]Data are available at http://www.worldvaluessurvey.org.

less market oriented sentiments. For both of them, we also construct a dummy indicator associated with values of the underlying variable greater than 5. Furthermore, we use answers to questions regarding participation in protests (signing petitions, joining strikes or demonstrations, joining in boycotts, occupying buildings or factories).[7] Table A.4 in the Appendix reports the list of countries for which we have WVS data, with the year of the crisis and the waves (immediately before and immediately after a crisis) that we use for the analysis.

While we use the other variables described above for a country-specific analysis in a panel of 1,298 observations, we use the WVS variables for a respondent-specific analysis in repeated cross-sections of at most 56,516 observations. Table 1 provides descriptive statistics on the key variables of the analysis. We observe that more than half of the yearly observations are associated with the (five-year) aftermath of a financial crisis. A majority of countries are democracies, and less than half of them were involved in an IMF program.

Figure 3 illustrates the evolution of the liberalization indicators ten years before and ten years after a financial crisis hits the countries in our sample (at time 0). As already captured by Figure 1, there is an increasing trend over time, both before and after a crisis. But it is now apparent that there is also a sharp and negative drop in liberalizations immediately after a crisis occurs. The lost reform momentum is never fully recovered, as the subsequent (increasing) trend has a smaller derivative than before the crisis. In the next section, we investigate whether this stylized fact survives econometric testing.
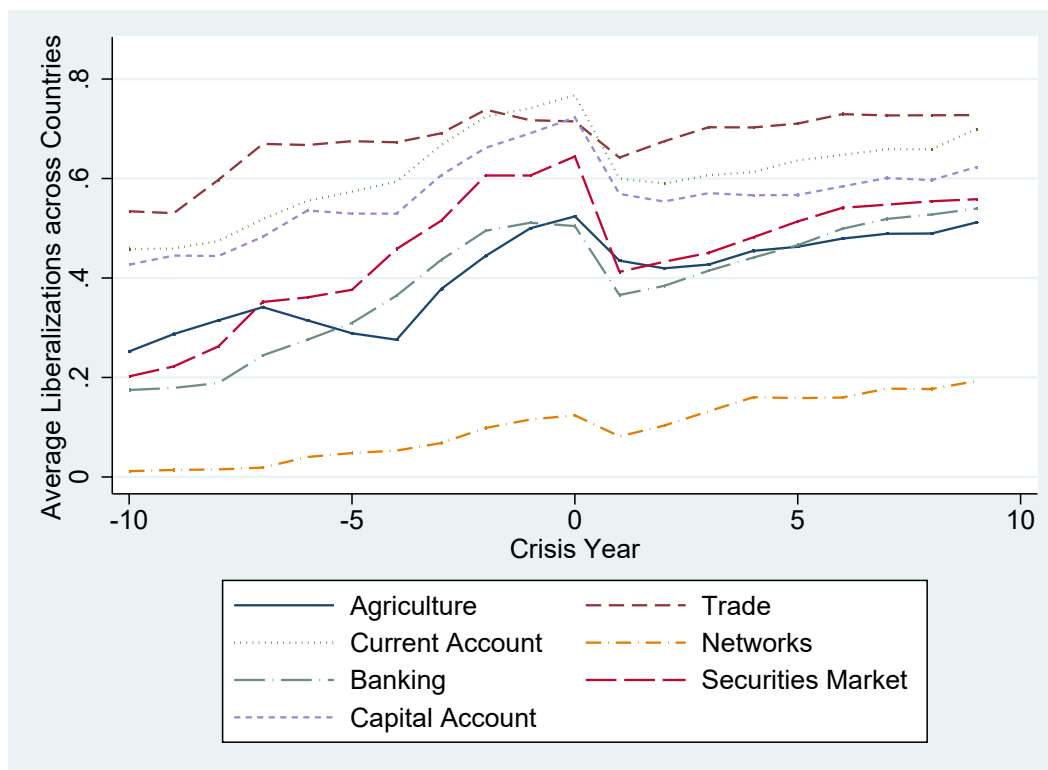

Figure 3   Average Liberalizations in the Pre- and Post-Crisis Periods

[7]For the exact survey questions used to construct our variables, see Table A.3 in the Appendix.

4 Empirical Results

We ask three interrelated questions. First, are financial crises associated with subsequent structural reforms? Second, are policy responses to crises influenced by a country's institutional setting? More specifically, is there any heterogeneity across democracies and autocracies? Third, what are the underlying mechanisms through which crises may influence reforms under different institutional environments? Do domestic conditions (e.g., government stability and the sentiment of the public opinion) or external actors (e.g., IMF engagement after crises) matter? And how? In this section, we discuss the empirical findings related to these questions after briefly laying out the econometric specifications that we use to address them.

4.1 Econometric Specifications

We estimate the following difference-in-differences specification:

$$Y_{it} = \alpha + \beta PostCrisis_{it} + \rho_i + \gamma_t + \varepsilon_{it}, \tag{1}$$

where Y_{it} denotes the outcome of interest, e.g., the different types of structural reforms discussed in the previous section, at time t for country i; $PostCrisis$ is a dummy variable equal to one within five years (including the crisis year) after the start of any of the four crises under analysis (Banking, Inflation, Domestic Debt, and External Debt); ρ_i and γ_t are country and time fixed effects, respectively; and ε_{it} is the error term. Standard errors are clustered at the country level. In order to better isolate the effect of the crises by comparing a crisis episode with the relevant set of countries and time periods, we restrict the time window in our estimations to 20 years around the start of a crisis and we also restrict the sample to countries that experienced at least one crisis in the period 1973–2006.[8]

The causal interpretation of β as the effect of financial crises rests on the identifying assumption that countries experiencing a crisis episode were on parallel trends with respect to the other countries in the pre-treatment period. This means both that crises are not triggered by differential track records of structural reforms and that reforms are not determined by the anticipation of a future crisis. To (indirectly) test for the parallel trends assumption and to assess the dynamics of the treatment effect (if any), we re-estimate the model including leads and lags of the crisis episode:

$$Y_{it} = \alpha + \sum_{k=-5}^{k=+4} \beta_k Crisis_{i(t-k)} + \rho_i + \gamma_t + \varepsilon_{it}. \tag{2}$$

Here, β_0 is the instantaneous treatment effect in the year of the crisis. The coefficients β_k with $k < 0$ test for the existence of parallel trends, as they reflect the relationship between current outcomes and a future crisis episode. To validate our identifying assumption, we expect these coefficients not

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[8]All of our findings are robust to the inclusion of countries that have experienced no crises in the control pool, and to the use of different time windows for the sample selection (i.e., 10, 15, 25, or 30 years around the crisis year, instead of 20); the results are available upon request.

to be statistically different from zero. The coefficients β_k with $k > 0$ capture dynamic treatment effects (if any), as they reflect the relationship between current outcomes and a past crisis episode.

4.2   Baseline Results

In this section, we present the main results and the heterogeneity analysis across political regimes, i.e., democracies vs. autocracies. Panel A of Table 2 reports results from regressions of structural reform variables on the post-crisis dummy controlling for country and year fixed effects.

Table 2   Financial Crises and Structural Reforms, Democracies vs. Autocracies

Dependent Variable	(1) Agriculture	(2) Trade	(3) Current Account	(4) Networks	(5) Banking	(6) Securities Market	(7) Capital Account
Panel A: All Countries							
Post-Crisis	0.012	0.004	-0.040**	-0.013	-0.036***	-0.021	-0.050***
	(0.020)	(0.013)	(0.017)	(0.014)	(0.012)	(0.015)	(0.016)
R^2	0.18	0.41	0.45	0.61	0.81	0.64	0.38
Obs	1,298	1,298	1,298	1,298	1,298	1,298	1,298
Panel B: Democratic Countries							
Post-Crisis	0.005	0.014	-0.022	-0.014	-0.019	-0.004	-0.028
	(0.018)	(0.014)	(0.017)	(0.016)	(0.013)	(0.020)	(0.017)
R^2	0.17	0.48	0.50	0.68	0.84	0.61	0.44
Obs	822	822	822	822	822	822	822
Panel C: Autocratic Countries							
Post-Crisis	-0.014	0.012	-0.072**	-0.012	-0.077***	-0.064**	-0.080***
	(0.041)	(0.029)	(0.027)	(0.018)	(0.020)	(0.024)	(0.028)
R^2	0.21	0.26	0.34	0.46	0.75	0.62	0.28
Obs	476	476	476	476	476	476	476
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors (clustered by country) are reported in parentheses.

∗ p-value < 0.10, ∗∗ p-value < 0.05, ∗ ∗ ∗ p-value < 0.01.

There is no evidence of a statistically significant relationship between the occurrence of financial crises and the adoption of more market oriented reforms. Quite the contrary. The coefficient of the variable *Post-Crisis* is positive in columns (1) and (2), where liberalization of the agricultural sector and openness to international trade are the dependent variables, but is not statistically different from zero. The estimated coefficient is negative in all remaining columns of Table 2 and is statistically significant when the dependent variable measures the degree of openness

of the current account—column (3)—and the liberalization of the banking sector and of the capital account—columns (5) and (7), respectively.

According to these estimates, on average, the degree of liberalization of the current account shrinks by 0.04 points, of the banking sector by 0.036 points, and of the capital account by 0.05 points in the five years following the outbreak of a financial crisis. To put these magnitudes in perspective, note that they correspond to 6.3%, 8.0%, and 8.7% of their respective mean values. Differently from the previous literature which argues that crises might trigger reforms (Krueger, 1993; Drazen and Grilli, 1993; Drazen and Easterly, 2001), these findings suggest that crises can be accompanied by the adoption of less market oriented policies, an even more clear-cut result than the "zero effect" disclosed by Mian et al. (2014).

An important concern for our empirical analysis is that the occurrence of financial crises may be driven by the same policy reforms under consideration, i.e., that countries hit by a crisis and the others were not on parallel trends before the treatment kicks in. To address this issue, in Table 3, we estimate two different specifications: Equation (1) augmented with the variable *Pre-Crisis*, which is a dummy equal to one in all five years preceding a financial crisis; and equation (2) with all leads and lags needed to capture both pre-trends and dynamic effects. As discussed above, the sample includes only countries that experienced at least one financial crisis in the period 1973–2006, and the time window under consideration is of 20 years around the start of a crisis.

Estimates of equation (1)—reported in the odd-numbered columns of Table 3—suggest that our (negative) results on *Current Account*, *Banking*, and *Capital Account* are robust to the inclusion of pre-trends, and that in the five years preceding a crisis treated countries and the other countries are not on differential trends (only for *Networks* the variable *Pre-Crisis* is statistically different from zero at a 10% level, but the pre-trend is not statistically significant in the specification with yearly dummies). Estimates of equation (2)—reported in the even-numbered columns of Table 3—confirm that the existence of pre-trends is not a threat to our identification. With the partial exceptions of *Agriculture* (for which we have a zero result) and *Capital Account* (but only in two years and not on average), we find no evidence of significant pre-trends. These estimates also show the dynamics of the impact of financial crises on structural reforms. For *Current Account*, *Banking*, and *Capital Account*, the impact is equally distributed across the post-treatment years. Furthermore, the yearly estimates show some negative effect of crises on reforms also for *Networks* and *Securities Market*. Figure A.1 in the Appendix visually highlights the sharp reduction in some of the liberalization indicators in the post-crisis period, and the lack of any statistical association beforehand.

Moving from this robust finding on the negative impact of crises on reforms, we now investigate whether it depends on the democratic nature of the political regime. Panels B and C in Table 2 examine if our findings systematically differ across democratic and autocratic countries. This analysis helps us understand under which institutional environments less market oriented policies are more likely to emerge as a consequence of financial crises. Panel B reports estimates of equation (1) obtained by restricting the sample only to democratic countries. Although the estimated coefficients are negative in all specifications, except those with *Agriculture* or *Trade* as

Table 3 Financial Crises and Structural Reforms, Parallel Trends vs. Dynamic Effects

Dependent Variable	(1) Agriculture	(2) Agriculture	(3) Trade	(4) Trade	(5) Current Account	(6) Current Account	(7) Networks	(8) Networks	(9) Banking	(10) Banking	(11) Securities Market	(12) Securities Market	(13) Capital Account	(14) Capital Account
Pre-Crisis	-0.006		-0.005		-0.016		0.034*		0.007		0.003		-0.018	
	(0.019)		(0.016)		(0.016)		(0.019)		(0.014)		(0.021)		(0.017)	
Post-Crisis	0.010		0.003		-0.043**		-0.007		-0.034**		-0.020		-0.053***	
	(0.022)		(0.014)		(0.017)		(0.016)		(0.013)		(0.017)		(0.017)	
Pre-Crisis(t-5)		-0.045**		0.008		-0.012		0.006		0.004		0.008		-0.013
		(0.019)		(0.017)		(0.013)		(0.011)		(0.010)		(0.017)		(0.015)
Pre-Crisis(t-4)		-0.024		-0.008		-0.019		0.011		0.002		-0.000		-0.031**
		(0.018)		(0.016)		(0.014)		(0.012)		(0.013)		(0.018)		(0.014)
Pre-Crisis(t-3)		-0.034*		-0.004		-0.022		0.012		-0.004		-0.003		-0.028*
		(0.020)		(0.018)		(0.014)		(0.013)		(0.013)		(0.017)		(0.014)
Pre-Crisis(t-2)		-0.033*		-0.007		-0.015		0.009		-0.006		-0.005		-0.009
		(0.020)		(0.016)		(0.012)		(0.015)		(0.014)		(0.016)		(0.015)
Pre-Crisis(t-1)		-0.027		-0.014		-0.021*		-0.002		-0.007		-0.013		-0.011
		(0.019)		(0.016)		(0.012)		(0.015)		(0.013)		(0.014)		(0.013)
Crisis(t)		-0.028		-0.015		-0.028*		-0.002		-0.031**		-0.026*		-0.019
		(0.018)		(0.012)		(0.014)		(0.015)		(0.012)		(0.014)		(0.013)
Post-Crisis(t+1)		-0.036*		-0.015		-0.052***		-0.011		-0.039***		-0.038***		-0.034**
		(0.021)		(0.013)		(0.014)		(0.016)		(0.012)		(0.013)		(0.015)
Post-Crisis(t+2)		-0.039*		-0.005		-0.057***		-0.025		-0.045***		-0.027**		-0.046***
		(0.022)		(0.012)		(0.015)		(0.015)		(0.010)		(0.013)		(0.015)
Post-Crisis(t+3)		-0.017		0.007		-0.043***		-0.036**		-0.037***		-0.031**		-0.041**
		(0.023)		(0.012)		(0.014)		(0.014)		(0.011)		(0.012)		(0.016)
Post-Crisis(t+4)		0.004		0.004		-0.027**		-0.025*		-0.035***		-0.020*		-0.043***
		(0.024)		(0.012)		(0.013)		(0.014)		(0.011)		(0.012)		(0.015)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.18	0.19	0.41	0.38	0.45	0.48	0.61	0.54	0.81	0.78	0.64	0.59	0.39	0.42
Obs	1,298	1,078	1,298	1,078	1,298	1,078	1,298	1,078	1,298	1,078	1,298	1,078	1,298	1,078

Robust standard errors (clustered by country) are reported in parentheses.

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01.

dependent variables, we find no evidence of any statistically significant association between crises and structural reforms in this set of countries (which also represent a larger sample than autocratic countries and should therefore be associated with more accurate estimates).

Next, we turn our attention to autocracies. Panel C suggests that our results are driven by autocratic regimes: These countries are likely to adopt less market oriented policies in the aftermath of financial crises. The estimated coefficient of *Post-Crisis* is negative in all specifications except that with *Trade* as dependent variable. Similarly to the estimates in Panel A based on the whole sample of countries, this negative association between crises and reforms is statistically significant for international trade as measured by *Current Account*, for the domestic financial sector (*Banking, Securities Market*), and for the external capital account (*Capital Account*). The estimated magnitudes are also larger than the corresponding ones obtained from the sample with all countries. The reductions in the *Current Account, Banking,* and *Capital Account* reform indicators after a crisis correspond to 11.4%, 17.2%, and 13.8% of their respective mean values.

4.3 Potential Mechanisms

In this section, we analyze possible mechanisms through which crises may have a negative effect on reforms by paying a particular attention to the distinction between democratic and autocratic countries. We start off by considering the extent to which external and domestic pressure on governments can affect policy choices in the aftermath of a crisis. We use the variable *IMF Intervention* to proxy for external inducement on governments to pass through more liberalization oriented policies after a crisis. At the same time, internal political dynamics might either result in a push on governments to implement policy reforms or in a stalemate with little room for main policy changes. The variable *Government Crisis* is meant to capture stalemate in ruling governments, while *General Strikes* and *Anti-Government Demonstrations* measure the level of social unrest and mobilization against the government. We then look at whether democratic transitions (from autocracy) or autocratic transitions (from democracy) are more likely in the aftermath of a financial crisis. We conclude our analysis on the domestic forms of pressure on governments by looking at whether crises are accompanied by a change in public attitudes toward state intervention in the economy and in people's readiness to take part in different forms of protest.

Results reported in column (1) of Table 4 suggest that countries hit by a financial crisis are more likely to request IMF intervention in the five years after the occurrence of this event, a near 30% increase with respect to mean intervention. Interestingly, though, this evidence holds only for democratic countries—column (1), Panel B—while crises appear not to trigger IMF intervention in autocracies—column (1), Panel C. Columns (2) to (4) of Panel A provide evidence that protests (strikes and anti-government demonstrations) as well as government crises are more likely to take place in countries that just experienced a financial crisis. Under this respect too, Table 4 documents the existence of interesting heterogeneity across political regimes. The after-crisis incidence of general strikes and government stalemate is not statistically different between democracies and autocracies, meaning that both regimes explain the positive correlation detected in columns (2)–

(3) of Panel A. On the other hand, only autocracies—according to the estimates reported in column (4) of Panel (C)—experience a significant and sizable increase (by about 70% of the mean) in the likelihood of anti-government demonstrations in the five years following a financial crisis.

Table 4　External and Domestic Influence in a Post-Crisis Environment

	(1) IMF Intervention	(2) General Strikes	(3) Government Crisis	(4) Anti-Government Demonstrations
Panel A: All Countries				
Post-Crisis	0.117***	0.081*	0.085**	0.375**
	(0.039)	(0.045)	(0.038)	(0.168)
R^2	0.16	0.05	0.05	0.04
Obs	1,298	1,298	1,298	1,298
Panel B: Democratic Countries				
Post-Crisis	0.121**	0.046	0.073	-0.020
	(0.046)	(0.062)	(0.052)	(0.193)
R^2	0.12	0.08	0.07	0.06
Obs	822	822	822	822
Panel C: Autocratic Countries				
Post-Crisis	0.029	0.072	0.096	0.756**
	(0.063)	(0.061)	(0.069)	(0.365)
R^2	0.25	0.06	0.08	0.11
Obs	476	476	476	476
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Robust standard errors (clustered by country) are reported in parentheses.

∗ p-value < 0.10, ∗∗ p-value < 0.05, ∗∗∗ p-value < 0.01.

The evidence we provide about a positive association between the occurrence of financial crises and anti-government demonstrations, in particular for non-democratic countries, leads us to investigate if a change of political regime is more likely to take place in the aftermath of a crisis. Estimates reported in Table 5 show that, from one year to the next, the likelihood of transitioning from autocracy to democracy increases by 2 percentage points in the five years following a financial crisis—see column (2).[9] As the mean of democratic change is 0.021, this means that the probability of transitioning from autocracy to democracy almost doubles in the aftermath of a crisis. Instead, the occurrence of financial crises does not seem to increase the probability of a democratic crisis and a subsequent autocratic transition. Therefore, while a financial crisis might threaten an

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[9]The dependent variables in columns (1) through (3) of Table 5 capture whether from one year to the next there is a regime change of any type (*Regime Change*), from autocracy to democracy (*Democratic Change*), or from democracy to autocracy (*Autocratic Change*), respectively.

autocrat's survival as the likelihood of a democratic transition increases, it does not carry the risk of democracies falling back to an autocratic regime.

Table 5   Regime Change in a Post-Crisis Environment

	(1) Regime Change	(2) Democratic Change	(3) Autocratic Change
Post-Crisis	0.014	0.020**	-0.006
	(0.009)	(0.008)	(0.006)
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
R^2	0.03	0.03	0.03
Obs	1,298	1,298	1,298

Robust standard errors (clustered by country) are reported in parentheses.

$*$ p-value < 0.10, $**$ p-value < 0.05, $***$ p-value < 0.01.

In addition, we would like to understand how the general public opinion toward competition and the government's involvement in the economy changes as a reaction to financial crises, and how this, in turn, might pressure a democratic government or a non-democratic one. As described in the data section, we employ two questions from the WVS that reflect the general public attitudes toward a market oriented economy. These variables capture: (i) People's opinion about private ownership and state ownership (*Private vs State Ownership*), (ii) people's attitude toward competition (*Competition Good vs Bad*). As mentioned before, higher values indicate less market oriented sentiments.

In Table 6, we estimate again equation (1) using as dependent variables the residuals from a set of regressions of the corresponding opinion outcome on country and year fixed effects as well as individual characteristics (education, marriage, children, and employment status). We report the estimated coefficient of *Post-Crisis* in the regression for each row-heading variable. The general message is that public attitudes become much less supportive of market oriented policies in autocracies after a crisis, while there is no substantial change of public opinion in democracies.

In particular, Panel A of Table 6 shows that there is no statistically significant change in average attitudes in democracies. On the contrary, in autocracies, the average number of people who are more in favor of state ownership rather than private ownership increases after a financial crisis. And in non-democratic countries also the average number of people who think competition is bad increases. As in Quinn and Toyoda (2007), we thus find that ideological shifts may drive liberalizations and closures. The fact that this is apparent only in autocracies should not be puzzling, as the zero average effect of crises on public attitudes in democratic countries is consistent with the emergence of more polarized opinions as in Mian et al. (2014).

Finally, and consistently with the above results on actual outcomes rather than attitudes, the (self-declared) propensity to join strikes, demonstrations, or boycotts increases in autocracies but not in democracies (see Panel B of Table 6).

The empirical results discussed in this section tell us two very different (political) tales of what happens in democratic vs. autocratic countries in the aftermath of a financial crisis.

Table 6   Change in Average Attitudes After a Crisis, Democracies vs. Autocracies

	(1) All	(2) Democracies	(3) Autocracies
Panel A: Market vs. Government			
Private vs State Ownership	0.081***	-0.018	0.248***
	(0.026)	(0.034)	(0.04)
Competition Good vs Bad	0.013	-0.04	0.092***
	(0.023)	(0.032)	(0.034)
	(0.004)	(0.006)	(0.006)
Private vs State Ownership (dummy)	0.011**	-0.001	0.032***
	(0.004)	(0.005)	(0.006)
Competition Good vs Bad (dummy)	-0.002	-0.006	0.004
	(0.003)	(0.005)	(0.005)
Obs	56,516	31,325	25,191
Panel B: Protest Sentiment			
Signing Petitions	0.004	0.008	0.002
	(0.004)	(0.005)	(0.006)
Joining Strikes or Demonstrations	0.008**	-0.002	0.03***
	(0.004)	(0.005)	(0.007)
Joining in Boycotts	0.001	-0.008*	0.023***
	(0.003)	(0.005)	(0.006)
Occupying Buildings or Factories	-0.000	-0.000	-0.001
	(0.003)	(0.003)	(0.005)
Obs	51,867	30,277	21,590

Robust standard errors for mean-difference tests are reported in parentheses.

A detailed variable description is given in Table A.3.

∗ p-value < 0.10, ∗∗ p-value < 0.05, ∗ ∗ ∗ p-value < 0.01.

4.3.1   Democratic Stalemate

In democratic countries, the counter-balancing effects of internal and external (IMF) pressure—as well as more polarized public attitudes as in Mian et al. (2014)—produce a political stalemate and this may explain the zero effect of crises on reforms. The IMF conditionality applied to crises-countries that receive financial support is intended to lead policy makers toward implementing more market oriented policies. At the same time, the internal government crisis (crisis inside the government circles driven by popular sentiment) that often follows the financial crisis exerts a negative influence on reform behavior and pushes toward less market oriented policies. These two counter-balancing effects might offset each other on average (although one might prevail in one

country and the other one in some other country). And this might be a reason why the association between financial crises and structural reforms under democracies is weak or absent.

The recent experience of Greece is a case study consistent with these general (cross-country) findings. In mid 2000s, the authorities introduced a spate of structural reforms such as corporate tax cuts, more flexible overtime arrangements, a new competition law, elimination of job tenure at public utility firms, simplification of business licensing. The IMF welcomed these reforms, but noted that there remained an unfinished agenda in the product and labor markets. The former included improved tax administration, tax simplification, reduced red tape, modernization of bankruptcy law, liberalization of gas and electricity markets. The latter included relaxation of employment protection measures, and a reduction in the minimum wages (at least for sectors under economic stress). While the authorities were enthusiastic about product market reform, they were not sanguine about the prospects for labor market reform. On the crucial issue of pension reform, the IMF urged for a public dialogue to facilitate early action. However, the authorities wished to adhere to an election promise to not introduce corrective measures in that term of office, though they did agree with the IMF assessment that fiscal sustainability would be threatened in the absence of these measures. Amid escalating internal political pressure, with large and often disorderly demonstrations taking place during critical negotiations with the IMF, the authorities were hard-pressed to resist abiding by the IMF reforms agenda. In the end, the outcome was modest (but not negative) in terms of structural adjustment.

4.3.2 Autocratic Pandering

Our empirical results on non-democratic countries show that financial crises could in fact pave the way for a regime change. In the short run, the costs may exceed the benefits as this is a painful transition. But in the long run, the reforms undertaken after the regime change unleash forces which lead to the benefits outweighing the short-run costs (see also Giuliano et al. (2013)). This process may be illustrated using the case study of the so called "Arab Spring," which is said to have been triggered in late 2010 in Tunisia.

The uncertainty and turmoil generated by the political transitions in Egypt, Jordan, Morocco, Tunisia, and Libya turned out to be more protracted than earlier anticipated. With the exception of Morocco and Jordan, growth declined sharply in 2011 and unemployment increased in many countries. Fiscal positions deteriorated as governments responded to surging commodity prices by increasing spending, even as their revenues declined due to slower economic activity, and by granting tax breaks. External positions also deteriorated due to higher food and commodity prices, and declines in tourism and capital inflows. By 2015, most Arab Countries in Transition (ACTs) had made progress toward reforming their generalized energy subsidies to create space for better-targeted social protection and higher spending on infrastructure, healthcare, and education. However, progress in reining in current spending, strengthening revenues, and implementing broad-based structural reforms, was found to be uneven. Non-conflict ACTs experienced positive growth in 2014 and the first half of 2015, supported by some recovery in European partner countries, lower

oil and commodity prices, and the early impact of the above reform efforts. Fiscal and external positions also improved in many cases, which for the first time since 2010 led to a reversal in the growth of central government deficits and strengthened reserve coverage.

Our results show that the fear of an Arab-Spring type of outcome might lead autocratic rulers to take counter-balancing measures to pander vested economic interests. Facing a tighter government budget constraints, the only available policy tool for such a pandering might be to reduce liberalizations so as to increase rents for incumbent interests. This mechanism is consistent with the negative effect of financial crises on reforms that we detect in autocratic countries.

5   Concluding Remarks

This paper aims at taking a fresh look at the prevalent view that economic crises provide an opportunity for governments to promote structural reforms that would not be possible to implement under normal economic conditions. Our empirical analysis casts doubt on this view. At least for the types of reforms we consider, we show that crises do not trigger the implementation of structural reforms. On the contrary, they are often followed by a reduction in the degree of liberalization in some sectors of the economy (e.g., the banking system). This appears to be particularly relevant in the case of autocratic regimes. In democracies the IMF pressure for adopting reforms is often counterbalanced by government crises, which play an opposite role for the implementation of reforms. In autocracies, crises induce less pro-market attitudes in the public opinion, larger anti-government demonstrations, and a higher probability of regime change, leading the autocratic rulers to close the economy in an attempt to pander vested economic interests.

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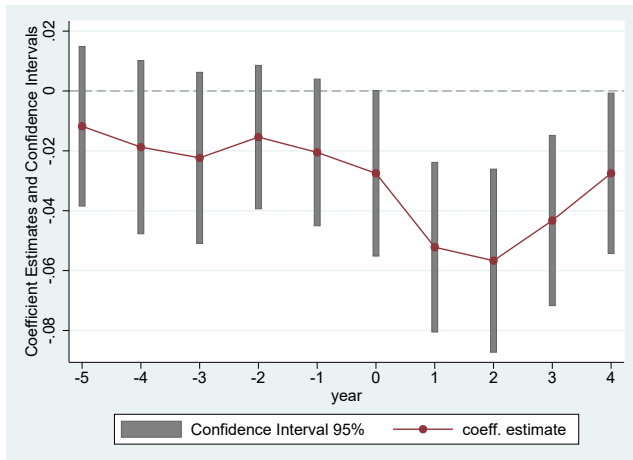
Appendix

Figure A.1   Financial Crises and Structural Reforms, Pre- and Post-Trends
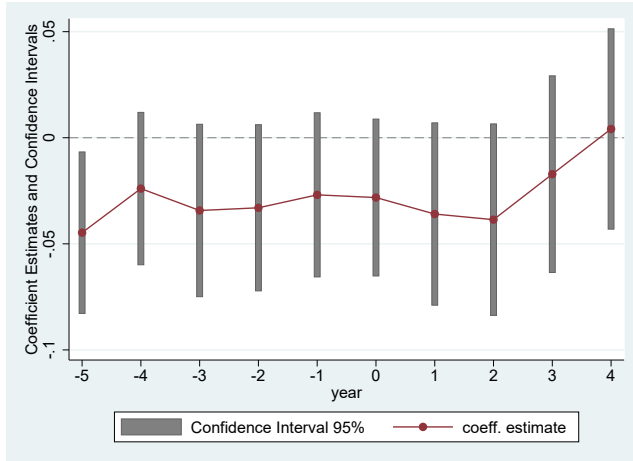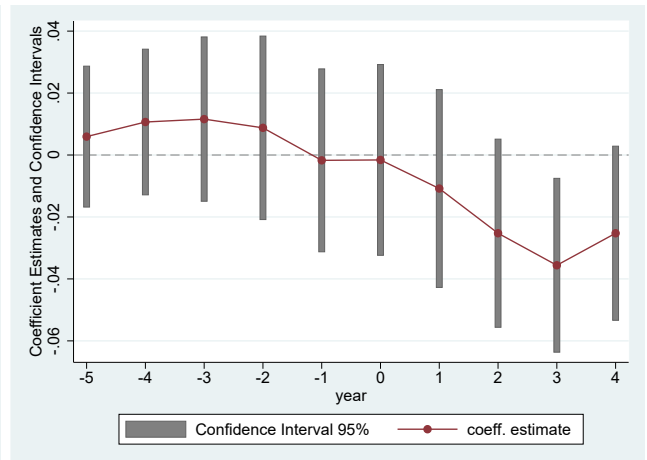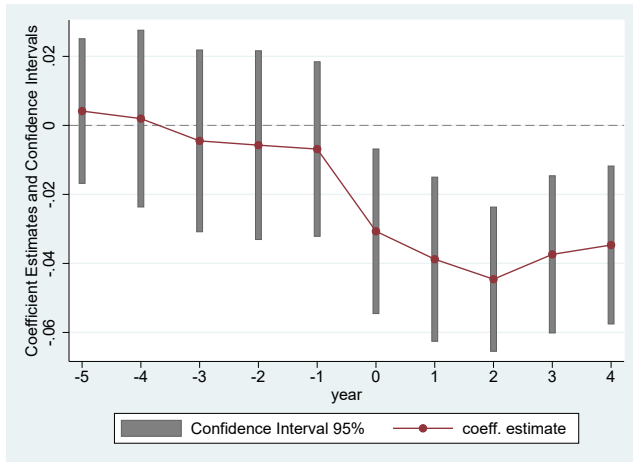

(a) Agriculture
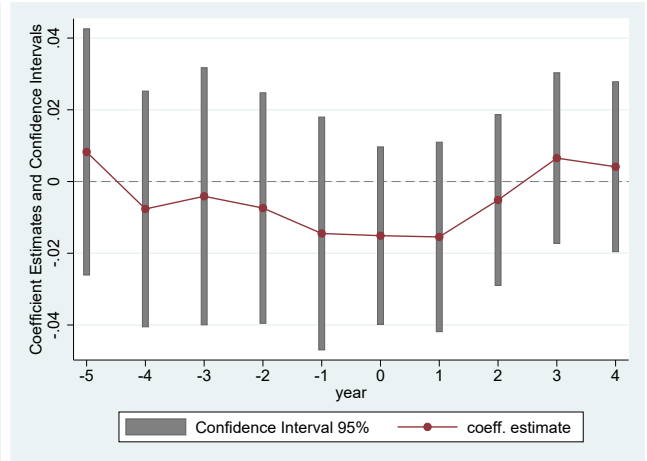
(b) Trade

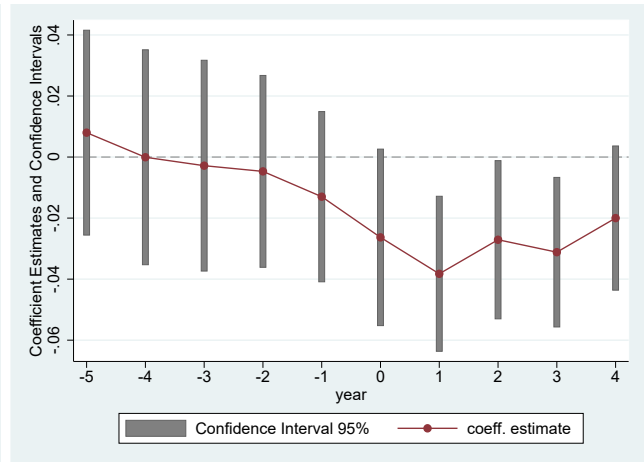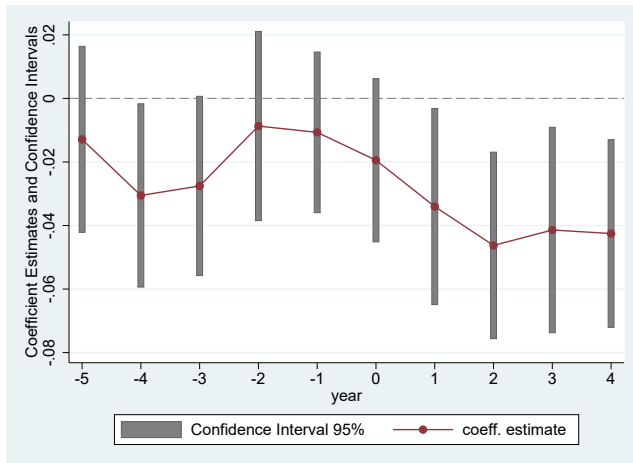(c) Current Account

(d) Networks

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Figure A.1 (Continued)   Financial Crises and Structural Reforms, Pre- and Post-Trends

(e) Banking

(f) Securities Market

(g) Capital Account

Table A.1   List of Financial Crises

Country	Crisis Year
Algeria	1990, 1991
Angola	1974, 1976, 1985, 1991, 1992
Argentina	1980, 1982, 1989, 1995, 2001, 2002, 2006
Australia	1975, 1989
Bolivia	1979, 1980, 1982, 1986, 1991, 1994, 1999
Brazil	1974, 1983, 1985, 1986, 1990, 1994, 2002
Canada	1983
Central African Republic	1976, 1981, 1983, 1988, 1994
Chile	1974, 1976, 1982, 1983, 1985, 1990
China	1992, 1994
Colombia	1979, 1982, 1985, 1987, 1998
Costa Rica	1974, 1981, 1983, 1987, 1988, 1991, 1994, 1995
Cote d'Ivoire	1977, 1979, 1983, 1988, 1994, 2000
Denmark	1987
Dominican Republic	1975, 1980, 1982, 1984, 1988, 1996, 2003, 2005
Ecuador	1974, 1981, 1982, 1983, 1998, 1999
Egypt	1980, 1981, 1984, 1986, 1989, 1990, 1992
El Salvador	1981, 1985, 1989, 1990, 1993
Finland	1991
France	1994
Germany	1977
Ghana	1974, 1976, 1979, 1982, 1986, 1987, 1993, 1997, 2000, 2003
Greece	1986, 1990, 1991
Guatemala	1974, 1986, 1989, 1990, 2001, 2006
Honduras	1981, 1990, 1994, 1999, 2001
Hungary	1990, 1991, 1995
Iceland	1974, 1985, 1988, 1993
India	1993
Indonesia	1979, 1992, 1994, 1997, 1998, 2002
Ireland	1975, 1981
Italy	1974, 1980, 1990
Japan	1974, 1992
Kenya	1984, 1985, 1992, 1994
Korea	1974, 1980, 1983, 1985, 1997
Malaysia	1985, 1997
Mauritius	1979
Mexico	1976, 1980, 1981, 1982, 1994, 1995
Morocco	1983, 1986
Myanmar	1984, 1988, 1996, 2001, 2002, 2006
New Zealand	1987
Nicaragua	1979, 1985, 1987, 2000
Nigeria	1975, 1977, 1981, 1982, 1983, 1988, 1992, 1997, 2001, 2004
Norway	1987
Panama	1983, 1988
Paraguay	1974, 1979, 1984, 1986, 1994, 1995, 2002, 2003
Peru	1975, 1976, 1978, 1980, 1983, 1984, 1985, 1999
Philippines	1981, 1984, 1997
Poland	1981, 1987, 1991
Portugal	1974, 1982
Romania	1981, 1986, 1990
Russia	1991, 1993, 1995, 1998
Singapore	1982
South Africa	1977, 1985, 1989, 1993
Spain	1977
Sri Lanka	1979, 1980, 1981, 1989, 1990, 1996
Sweden	1991
Taiwan	1983, 1995, 1997
Thailand	1974, 1980, 1996
Tunisia	1979, 1991
Turkey	1977, 1978, 1982, 1991, 1994, 2000, 2001
United Kingdom	1974, 1975, 1984, 1991, 1995
United States	1984
Uruguay	1981, 1983, 1987, 1990, 2002, 2003
Venezuela	1978, 1980, 1983, 1987, 1990, 1993, 1995, 2002, 2004
Zambia	1983, 1984, 1995
Zimbabwe	1983, 1991, 1995, 1998, 2000, 2006

Table A.2   List of Democratic and Autocratic Country Periods

Democracies	Autocracies
Argentina (1973-1975, 1983-2006), Australia (1973-2006), Bolivia (1979, 1982-2006), Brazil (1985-2006), Canada (1973-2006), Central African Republic (1993-2002), Chile (1990-2006), Colombia (1973-2006), Costa Rica (1973-2006), Denmark (1973-2006), Dominican Republic (1973-2006), Ecuador (1979-1999, 2002-2006), El Salvador (1984-2006), Finland (1973-2006), France (1973-2006), Germany (1973-2006), Ghana (1979-1980, 1993-2006), Greece (1974-2006), Guatemala (1973-1981, 1986-2006), Honduras (1982-2006), Hungary (1990-2006), Iceland (1973-2006), India (1973-2006), Indonesia (1999-2006), Ireland (1973-2006), Italy (1973-2006), Japan (1973-2006), Kenya (1998-2006), Korea (1998-2006), Mauritius (1973-2006), Mexico (2000-2006), New Zealand (1973-2006), Nicaragua (1984-2006), Nigeria (1979-1982, 1999-2006), Norway (1973-2006), Panama (1989-2006), Paraguay (1989-2006), Peru (1980-1989, 2001-2006), Philippines (1986-2006), Poland (1989-2006), Portugal (1976-2006), Romania (1990-2006), Spain (1977-2006), Sri Lanka (1973-1976, 1989-2006), Sweden (1973-2006), Taiwan (1996-2006), Thailand (1975, 1979-1990, 1992-2005), Turkey (1973-1979, 1983-2006), United Kingdom (1973-2006), United States (1973-2006), Uruguay (1985-2006), Venezuela (1973-2006).	Algeria (1973-2006), Angola (1975-2006), Argentina (1976-1982), Bolivia (1973-1978, 1980-1981), Brazil (1973-1984), Central African Republic (1973-1992, 2003-2006), Chile (1973-1989), China (1973-2006), Cote d'Ivoire (1973-2006), Ecuador (1973-1978, 2000-2001), Egypt (1973-2006), El Salvador (1973-1983), Ghana (1973-1978, 1981-1992), Greece(1973), Guatemala (1982-1985), Honduras (1973-1981), Hungary (1973-1989), Indonesia (1973-1998), Kenya (1973-1997), Korea (1973-1987), Malaysia (1973-2006), Mexico (1973-1999), Morocco (1973-2006), Myanmar (1973-2006), Nicaragua (1973-1983), Nigeria (1973-1978, 1983-1998), Panama (1973-1988), Paraguay (1973-1988), Peru (1973-1979, 1990-2000), Philippines (1973-1985), Poland (1973-1988), Portugal (1973-1975), Romania (1973-1989), Russia (1973-2006), Singapore (1973-2006), South Africa (1973-2006), Spain (1973-1976), Sri Lanka (1977-1988), Taiwan (1973-1995), Thailand (1973-1974, 1976-1978, 1991, 2006), Tunisia (1973-2006), Turkey (1980-1982), Uruguay (1973-1984), Zambia (1973-2006), Zimbabwe (1973-2006).

Table A.3   World Values Survey Questions

Variable Question	Scale
(1) Private vs State Ownership. I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Sentences: Private ownership of business should be increased vs Government ownership of business should be increased."	1=Private ownership of business should be increased; 10=Government ownership of business should be increased.
(2) Competition Good vs Bad. "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Sentences: Competition is good. It stimulates people to work hard and develop new ideas vs Competition is harmful. It brings the worst in people."	1=Competition is good; 10=Competition is harmful.
(3) Protest Sentiment (various indicators). "Now I'd like you to look at this card. I'm going to read out some different forms of political action that people can take, and I'd like you to tell me, for each one, whether you have actually done any of these things, whether you might do it or would never, under any circumstances, do it." - Signing petitions - Joining strikes or demonstrations. - Joining in boycotts - Occupying buildings or factories	1=Have done, Might do; 0=Would never do.

Notes: Questions (1) and (2) are also presented in the form of a dummy equal to 1 if the reported score is greater than 5. The analysis on the protest dummies is robust to the exclusion of the "might do" answer from the indicator variable.

Table A.4   List of Countries and Waves in the WVS

Market vs. State	Protest Sentiment
Turkey **1991** (1990, 1996); **1994** (1990, 1996); **2000** (1996); **2001** (1996, 2007). South Africa **1993** (1990, 1996). Argentina **1995** (1999); **2001** (1999, 2006); **2002** (1999, 2006). Brazil **1994** (1991, 1997); **2002** (1997, 2006). Mexico **1994**, **1995** (1996). Peru **1999** (1996, 2001). Uruguay **2002** (1996, 2006); **2003** (1996, 2006). Taiwan **1995** (1994, 2006); **1997** (1994, 2006). India **1993** (1990, 1995). Indonesia **2002** (2006). Philippines **1997** (1996, 2001). Nigeria **1992** (1990, 1995); **1997** (1995). Russia **1991**, **1993**, **1998** (1995). China **1992**, **1994** (1995).	Turkey **1991** (1990, 1996); **1994** (1990, 1996); **2000** (1996, 2001); **2001** (1996). South Africa **1993** (1990, 1996). Argentina **1995**, **2001**, **2002** (1999). Brazil **1994** (1991, 1997); **2002** (1997). Colombia **1998** (1998). Mexico **1994**, **1995** (1996). Peru **1999** (1996, 2001). Uruguay **2002** (1996, 2006); **2003** (1996, 2006). Taiwan **1995**, **1997** (1994). India **1993** (1990, 1995). Indonesia **2002** (2001). Philippines **1997** (1996, 2001). Nigeria **1992** (1990, 1995); **1997** (1995, 2000). Russia **1991**, **1993**, **1998** (1995).

Notes: For all countries, years of crisis **(bold)** and World Value Survey years are indicated.