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THE POLITICAL ECONOMY OF STRUCTURAL REFORMS*

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Abstract

Do economic structural reforms have electoral consequences? This paper studies whether voters reward or punish governments for introducing structural economic reforms. Drawing on data from a sample of 122 democratic countries over the 1975-2006 period, I note—at first glance—that no significant relationship can be discerned between the probability of a government's being voted out of office and its having put in place economic reforms in the areas of international trade, product markets, and domestic finance. However, such reforms do appear to have an impact on the outcome of subsequent elections, but to varying degrees, based on the factors of macroeconomic stability, institutional development, and a wise sequencing of proposed reforms. In other words, voters will tend to reward reformist governments if macroeconomic stability is attained, a certain threshold level of institutional quality is achieved, and an optimal sequencing of structural reforms is followed.

JEL Codes: D72, E02, O16, O24

Keywords: Elections, Structural Reforms-Trade, Current Account, Agriculture, Networks, Capital Account, Domestic Finance-Institutions.

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1. Introduction

The last quarter of the twentieth century was witness to substantial economic-reform efforts undertaken by both developed and developing countries. The rationale behind the idea of removing rigidities in markets was that they not only distorted the overall economy and hindered the efficient allocation of its resources, but they also impeded economic growth. However, in spite of the voluminous literature on the growth effects of structural reforms, there has been very little empirical work addressing the political consequences associated with them. Given the concerns about the success and sustainability of structural reforms, a natural question arises as to whether or not reforms help incumbent governments to boost their re-election prospects. The answer to this question might have important political repercussions; in particular, the reluctance of a government to implement reforms to achieve certain economic outcomes for fear of losing the next election.

A priori, it is not obvious whether voters reward or punish governments for their reform activism. Existing literature suggests that structural reforms foster growth in the long-run.[1] If this is the case, rational voters should show their appreciation by keeping governments in power, as they expect that their economic welfare will improve. However, for the question at hand, the short-run impacts of reforms are more likely to matter rather than the long-run ones. Despite the long-term gains, reforms could bear high costs in the short term for many reasons. More importantly, individuals are more likely to make political decisions based on the distribution of the gains and losses caused by economic policies instead of aggregate welfare. For instance, due to the uncertainty about the distribution of costs and benefits, voters may opt to block an efficiency-enhancing reform (Fernandez and Rodrik, 1991), or such a reform may be delayed because of a war of attrition between conflicting groups (Alesina and Drazen, 1991).

This study seeks to assess the effect of structural reforms on the probability of a change in government, a subject which has hitherto been neglected in the literature. Accordingly, the main purpose of this paper is to bring into focus the role played by structural reforms in determining election outcomes. It aims to explain how reforms shape political stability and under which conditions reforms pay off for incumbent governments. I first argue that, on average, governments, by eliminating rigidities in their markets, cannot significantly affect their likelihood of re-election. More importantly, I discover that the

[1] See, among others, Aksoy (2014), Christiansen et al. (2013), Kaminsky and Schmukler (2008), and Prati et al. (2013).

association between reforms and a government's fall from power does not differ according to the type of the reform. When governments reform the international trade sector, product markets, and financial markets, they do not influence the probability of their remaining the ruling party at the next election, neither in developed nor in developing countries. Hence, structural reforms appear to be ineffective in swaying voting behavior.

Baseline results are robust to alternative specifications. I start by estimating the baseline model by logit fixed-effect regression to control for the unobserved country characteristics. Next, I include other possible determinants of government turnover. I first probe whether voters make decisions by comparing their government's performance with other countries'. To this end, I add macroeconomic controls deviating from world averages. Then I check if voters take into consideration overall macroeconomic performance of the government by adding into the regression average economic growth, inflation, and government expenditure during the tenure of the government. In addition, I scrutinize the rationality of voters in terms of structural reforms. If voters are long-sighted, they do not reach a judgment about reform one year before an election; rather, they consider the overall reform picture during the government's tenure. Finally, I test whether endogeneity biases the main results. First of all, there might be some omitted variables that are correlated with both structural reforms and the probability of government turnover. Second, governments may choose to reform or not to reform according to their re-election prospects. They might decide not to undertake reforms if there is a high probability of losing upcoming elections, or vice versa, which will make reforms endogenous variables. To tackle the endogeneity problem, I employ an instrumental-variable approach using the weighted average of reforms of politically allied countries. All these checks for robustness confirm the absence of a statistically significant association between structural reforms and the probability of government turnover.

Yet, these results raise doubts about the political economy of structural reforms, since reforms often carry electoral costs. For this reason, I extend the analysis by studying the heterogeneity of the relationship between the probability of government turnover and structural reforms. In particular, I test whether macroeconomic conditions, institutional development, and the strategy of reform sequencing play any role in determining electoral outcomes. Results show that in countries where macroeconomic stability is attained, voters opt to reward governments for introducing economic reforms. In contrast, there is a positive and statistically significant relationship between reforms and the probability of a government being voted out of office if reforms are enacted in unstable environments. Moreover, I find that structural reforms tend to decrease

the probability of losing elections if a certain threshold level of institutional quality is achieved, whereas reforms undertaken in less institutionally developed countries significantly increase the likelihood of turnover. Finally, the results indicate that the ordering of structural reforms has electoral consequences. The probability of government turnover is significantly higher in countries where an optimal reform- sequencing strategy is not followed—meaning that the international trade sector is liberalized after the capital account—with respect to the countries that carry out an optimal reform-sequencing strategy.

To the best of my knowledge, this paper is the first study to investigate whether reforms in international trade, product markets, and financial markets affect the probability of government turnover. I seek to contribute to two strands of the literature. First, this paper adds to the literature on determinants of re-election. The economic factors that make governments stay in power or fall are widely examined in the literature. The underlying idea is that individuals attach responsibility to governments for the situation of the economy, considering the economic outcomes as the main indicator for electing governments.[2] Alesina et al. in 1998 and 2012 examine the relationship between cabinet changes and several economic indicators. They find that inflation has been positively associated with cabinet changes in OECD countries, while growth does not have a statistically significant effect on them. On the other hand, they find no indication that budget deficits lower the probability of government turnover. Imai et al. (2014) argue that economic growth, irrespective of whether it is caused by internal economic policies or imported from trading partners, greatly reduces the probability of government change. Brender and Drazen (2008), on the other hand, examine the probability of re-election in place of government change and find that, in contrast to the common wisdom, loose fiscal policies are punished rather than rewarded in both developed and developing countries. They also suggest that voters show their gratitude to governments for economic growth only in developing countries and penalize them for presiding over high inflation only in developed countries. In a panel study of 58 countries, Leigh (2009) demonstrates that the probability of re-election increases as both the domestic economy and world economy grow, while better education and media penetration increase the electoral response of voters to domestic growth. Despite the extensive effort to research issues of re-election,

[2] The economic voting behavior is also studied in the political science literature. The hypothesis that voters punish governments for adverse economic outcomes is found to be valid for Latin American countries (Lewis-Beck and Ratto, 2013) and Western Europe (Chappel Jr and Veiga, 2000). In addition, Chwieroth and Walter (2010) and Crespo-Tenorio et al. (2014) point out that crises are positively correlated with government turnover, while the relationship is conditioned by a country's institutional structure.

those studies do not take into consideration the inevitable political consequences of structural reforms.

This work is more closely related to Buti et al. (2009), Buti et al. (2010), and Lora et al. (2005). Buti et al. (2009) argue that in OECD countries, well-developed financial markets increase the re-election probability of reformist governments, as they help to reap the benefits of structural reforms. Buti et al. (2010) draw attention to the importance of separate structural reforms in terms of electoral results and examine to what extent reforms influence re-election chances. They find that structural reforms that are likelier to benefit large groups of insiders, such as employment protection and pensions, are detrimental for governments, whereas reforms in tax wedge and unemployment benefits up the odds for re-election. Finally, Lora et al. (2005) analyze the electoral impact of Washington Consensus policies in Latin American countries. They demonstrate that voters there are inclined to punish their governments for pushing through market-friendly reforms.

My paper differs from these three contributions in several key respects. While they investigate the electoral consequences of structural reforms by focusing on a limited set of countries, I consider a larger country sample that encompasses least developed countries, as well as advanced and emerging-market economies. Hence, the results and the policy implications that I derive are not confined to a particular set of countries. In addition, I examine a broader set of reforms: those in international trade, product markets, and financial markets. The extensive data set allows me to investigate the repercussions of structural reforms in different sectors. Finally, in order to go deeper into the analysis, I address the issues of whether macroeconomic conditions, institutional development, and reform ordering, which have drawn scant attention in the literature, are central for predicting the electoral consequences of economic reforms.

Second, I aim to contribute to the literature on the political economy of structural reforms. The existing literature speaks to some but not all aspects of political-economy considerations. Studies of the determinants of structural reforms, for instance, state that domestic financial reforms are put in place by both right-wing and left-wing administrations and both by presidential and parliamentary regimes (Abiad and Mody, 2005). Campos and Coricelli (2012) find a U-shaped relationship between political and financial liberalization, suggesting that there is no unilateral relationship between democratization and economic reforms, and, more importantly, that a lack of democratization might hinder reforms and even bring about reform reversals. De Haan and Sturm (2003), on the other hand, claim that democratic institutions lead to economic reforms in developing countries, which is a result later confirmed

for a larger sample of developed and developing countries by Giuliano et al. (2013). Drazen and Easterly (2001) emphasize that high inflation and black-market premiums spur reforms, while Lora and Olivera (2004) report that crises are what induce reforms in Latin America. However, the literature seems much less forthcoming on the issue of the fate of governments that have ushered in structural reforms. Establishing the truth in this sub-area is essential if governments are to fulfill their responsibility of eliminating rigidities from their economies while ensuring their own political survival. As such, this paper's analysis of reforms and the probability of government turnover will, it is hoped, enable economists to fully understand why countries differ in reform initiation, as well as the genesis of policy reversals and the magnitudes of their reforms.

The rest of the paper is organized as follows. Section 2 presents the data and motivating evidence. Section 3 describes the empirical specification and discusses the contributions made by structural reforms to a government's departure from office. In Section 4, I consider some alternative explanations of baseline results by taking into consideration the underlying macroeconomic environment, institutional quality, and reform sequencing. The last section is the conclusion.

2. Data and Motivating Evidence

2.1. Data

The data set used in this study comes from various sources. The information on structural reform has been compiled by the Research Department of the IMF and covers regulations for different sectors. For economic variables, I use the World Development Indicators of the World Bank (WB, 2011). The political and institutional variables come from the Database of Political Institutions (Keefer, 2012) and Quality of Government (Teorell et al., 2011). The combination of data sources enables me to employ data for 122 democratic countries over the 1975-2006 period.

Elections. Following Alesina et al. (1998, 2012), I employ the change of the chief executive as a dependent variable. In my view, replacing the chief executive indicates displeasure on the part of the voters with the current policy. The dependent variable is a binary variable that equals 1 if an election takes place in year t and country I and the current chief executive is not in office in year $t + 1$.

In the sample period, there were 571 elections, of which 288 were parliamentary and 283 presidential. It is also worth noting that elections occur more

often in developing countries than in developed ones. Of those 571 elections, 175 of them were carried out in developed countries, 397 of them in the developing world. The incumbent leaders were ousted in 284 elections, compared to 287 contests where they held onto power. In the developing-country category—from where 70% of the data originates—the frequency of government change is slightly lower (48%) than in the developed contingent (51%).

Reforms. The structural-reform data set consists of de jure indicators of international trade, product markets, and the financial sector. International trade is measured by average tariff rates and restrictions on current-account transactions. The former measures average tariffs and is normalized between 0 and 1, where a 0 means that tariff rates are 60% or higher and 1 means that tariff rates are 0. The latter captures the extent to which a government is compliant with its obligations under the IMF's Article VIII to free from government restriction the proceeds from international trade in goods and services.

There exist two indicators of product-market reforms. The first indicator I consider refers to the telecommunications and electricity markets. It covers the degree of regulation, including the extent of competition in the provision of these services, the presence of an independent regulatory authority, and privatization. The second reform variable is related to the agriculture sector. It captures intervention in the market for the main agricultural export commodity in each country, including the extent of public intervention, the presence of administered prices, and public ownership.

There are two financial sector reforms: domestic financial reform and capital-account reform. The domestic financial reform index is derived from Abiad et al. (2009). The index is constructed as the average of six sub-indices: (i) credit controls, such as subsidized lending and directed credit; (ii) interest-rate controls, such as floors, ceilings, or interest-rate bands; (iii) entry barriers, such as restrictions on the participation of foreign banks and on the scope of their activities; (iv) the degree of state ownership in the banking sector; (v) the quality of banking supervision and regulation, such as risk-based capital-adequacy ratios as based on the Basel I capital accord, and an independent banking supervisory agency; (vi) securities-market policy, which includes the auctioning of government securities, establishment of debt and equity markets, and policies to encourage development of these markets, such as tax incentives or development of depository and settlement systems. The capital-account reform index measures a broad set of restrictions on financial credits and personal capital transactions of residents and financial credits to non-residents, as well as the use of multiple exchange rates.

Each reform indicator is a continuous variable between 0 and 1, with a higher value indicating a greater degree of liberalization. In order to determine whether governments significantly influence their own re-electability by carrying out economic reforms, I also construct an aggregate reform variable by calculating first principal components of the reforms in all sectors, as in Giuliano et al. (2013), in addition to the individual reform indicators.

Other Variables. I employ standard control variables that are found in the literature. In particular, I control for the macroeconomic and political environment as well as for cabinet characteristics, which have been shown to display profound effects on election outcomes. Prior studies argue that economic growth, inflation, and government expenditure are leading macroeconomic factors in the probability of government turnover. The per capita GDP growth rate as a measure of economic growth captures the state of the economy and the electoral consequence of change in total output.

In their study, where they consider all cases of government changes, Alesina et al. (1998) and Alesina et al. (2012) do not establish a significant link between growth and the probability of government turnover in OECD countries. Using the same set of countries but looking only at election years, Buti et al. (2009) and Buti et al. (2010) reach a similar conclusion, whereas Brender and Drazen (2008) state that economic growth materially promotes re-election only in developing countries. I also use inflation, defined as the rate of change in the GDP deflator, to measure how price stability affects election results.

While Buti et al. (2010) do not see a connection between re-election and inflation in OECD countries, Alesina et al. (1998) and Alesina et al. (2012) show that inflation definitely raises the probability of government turnover. Similarly, Brender and Drazen (2008) maintain that inflation is negatively associated with re-election, albeit only in developed countries. In addition, government share of GDP is included to control for the role of fiscal policy.[3] The expected sign of government share of GDP can be either negative or positive. The sign will show whether governments can change the probability of their re-election through public spending.

In accordance with the previous literature, I also take into account the political system and cabinet characteristics. The former is captured by dichoto-

[3] I use the government share of GDP in place of a government surplus owing to the lack of data for the latter. Although there is no consensus about the effects of fiscal policy on re-election in the literature, the conventional wisdom is that incumbent governments spend excessively in order to attract votes.

mous variables indicating whether the political system of each country is parliamentary (or presidential), and whether the electoral system is proportional

(or majoritarian). The expected signs for these variables are positive, since political competition is more intense in parliamentary democracies and proportional electoral systems. However, previous studies provide mixed results with regard to the electoral system. Buti et al. (2009) and Buti et al. (2010) assert that re-election is more likely if candidates are elected by proportional representation. On the other hand, in a larger sample of developed and developing countries, Brender and Drazen (2008) conclude that the probability of re-election is significantly higher with majoritarian voting rules. Finally, cabinet characteristics include the number of years the cabinet has been in power, whether it is composed of a coalition of parties (or a single party), and whether it holds the majority (or minority) in the parliament.

An unpopular government could be more vulnerable to punishment from the public, especially when power is shared among diverse parties in a coalition, or the party of the executive does not have an absolute majority in the legislature. While Alesina et al. (1998) show that coalition governments are more susceptible to being voted out of power, and regimes holding a majority of the seats in the parliament enjoy greater assurance of staying in power, they later (2012) are unable to establish a correspondence between the likelihood of a change in government and margin and majority on the one hand and the possible advent of coalition governments on the other. In addition, Alesina et al. (1998) and Alesina et al. (2012) find a positive association between the probability of a government's being voted out of office and the length of its tenure. Table 1 presents summary statistics.

2.2. Motivating Evidence

When all countries are taken together, there is evidence of deregulation in each sector. Networks industries have been the most reformed area across all sectors. The networks index soared from 0.01 to 0.48 in the sample period. The domestic-finance sector is the second most regulated area. That index rose from 0.20 to 0.77. Progress in other sectors is more limited. The trade index increased from 0.59 to 0.80; the current-account index climbed from 0.49 to 0.78; the agriculture index doubled from 0.30 to 0.60; and the capital-account index moved up from 0.48 to 0.72. It should also be mentioned that the reform attempts have not been confined to developed countries.

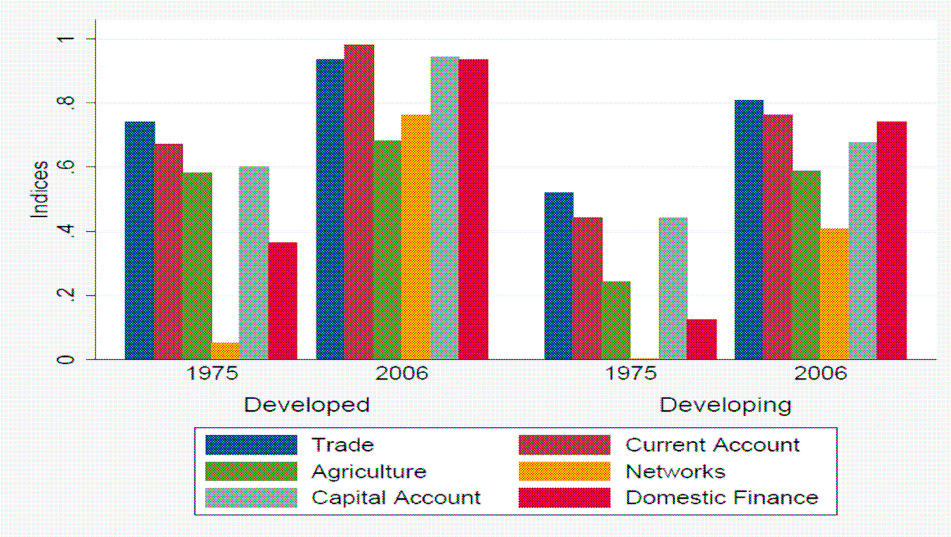
As can be seen in Figure 1, developing countries liberalized markets as well, albeit at a different pace and timing.

Table 1. Summary Statistics

Variables	Observation	Mean	Std. Dev.
Government Change (t)	509	0.50	0.50
Trade (t-1)	447	0.75	0.20
Current Account (t-1)	447	0.66	0.27
Agriculture (t-1)	347	0.51	0.38
Networks (t-1)	371	0.16	0.26
Capital Account (t-1)	447	0.63	0.27
Domestic Finance (t-1)	361	0.53	0.29
Inflation (t-1)	497	19.75	64.00
Growth (t-1)	488	1.62	4.87
Government Share of GDP (t-1)	507	17.26	7.39
Proportional Representation (t)	453	0.66	0.47
Parliamentary System (t)	509	0.48	0.50
Coalition (t)	509	0.46	0.50
Margin of Majority (t)	482	0.49	0.50
Duration (t)	509	4.26	1.93

Notes: Averaged over election term. Source: Author's estimations.

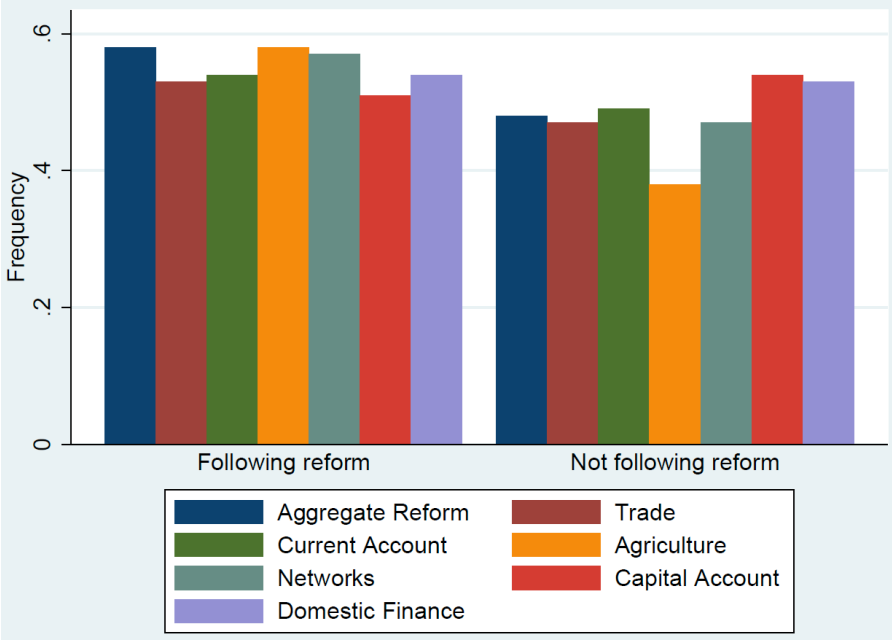
Figure 1. Structural Reform Indices



Notes: The latest year for which data are available is 2004 for networks agriculture reforms; 2005 for trade and domestic financial reforms; and 2006 for current-account and capital-account reforms. Source: IMF Estimates.

Figure 2 displays the frequency of government change following reforms versus not following reforms. According to the aggregate reform variable, which is defined as the first principal component of all reforms, it appears that enacting reforms is associated with a higher probability of government change. The probability of government turnover following reforms or not following reforms is 58% and 48%, respectively. Hence, voters seem to punish reformist governments. However, certain types of reforms might provoke different political outcomes. For this reason, the frequencies of government change associated with each reform are also depicted in Figure 2. In regard to reforms in trade, the current account, agriculture, and networks, the probability of government change is lower post-reform than pre-reform.

Figure 2. Frequency in Changes of Government and Structural Reforms



Notes: Aggregate reform is the first principal component of all reform indicators. Source: IMF Estimates.

In contrast, capital-account reform is associated with a lower probability of government turnover. Finally, in terms of domestic financial reform, no difference is seen between a government losing power after reforms and before reforms.

However, I should emphasize that only agriculture reform appears to matter for governments, as it is the only one that displays a statistically significant difference between the frequencies.

In order to probe whether the electoral impacts of reforms vary depending on several specific factors, Table 2 shows the mean of the aggregate reform variable one year before election for the cases of the government changing and not changing. The table's first two rows state that in more democratic countries, greater reform is observed before the government is re-elected. In contrast, less reform is associated with the re-election of governments. The same relationship applies to executive constraints. Despite the statistical insignificance, results indicate that more deregulated markets are prone to re-elect the leadership in countries with strong executive constraints. By contrast, the higher the extent of reform, the greater the chance the government will be sent packing in the next election in countries with weak executive constraints.

Regarding macroeconomic conditions, when the economy suffers from high growth volatility, a statistically significant difference turns up between reform before a change in government and when it is effected without a subsequent dismissal at the ballot box. It appears that a larger degree of structural

Table 2. Overall Reform Before Elections

	(1) **Gov'nment changes**	(2) **Gov'nment does not change**	(3) **T test (1) = (2) p-value**
Countries with better democracy	0.59	1.09	0.08
Countries with worse democracy	-0.29	-0.78	0.17
Countries with better executive constraints	0.74	1.09	0.25
Countries with worse executive constraints	-0.22	-0.69	0.13
Countries with higher growth volatility	0.18	-0.51	0.03
Countries with less growth volatility	0.50	0.71	0.66
Countries with higher current-account balance volatility	0.65	-0.71	0.00
Countries with less current-account balance volatility	0.31	0.51	0.48
Countries liberalized-capital-account-first	-0.08	-1.12	0.00
Countries not liberalized-capital-account-first	0.54	0.51	0.90

Notes: Averaged over election term. Source: Author's estimations.

reform is associated with government turnover in the former case, whereas in the latter case, market rigidities help incumbent governments to win elections. If there is less growth volatility, the relationship turns out to be the opposite, as expected, though with an insignificant difference. Similarly, governments undermine their own prospects for longevity by opening up markets if volatility is roiling the current-account balance: they need to keep markets closed in order not to be voted out of office.

Finally, the reform-sequencing issue is spotlighted in the last two rows of Table 2. In line with expectations, more reform is observed before a government falls, while less reform takes place before re-election of the government in countries that opened up the capital account first. In other countries, the opposite correlation is apparent, albeit with a statistically significant difference.

3. Empirical Specifications and Results

An important issue for the empirical analysis is to identify the reforms. One possibility is to use changes in the index, as with Buti et al. (2009), Buti et al. (2010), and Giuliano et al. (2013). However, focusing on these changes might fail to capture government policies, since many of them are only incremental in nature. Moreover, indices very rarely change in developed countries.

This would cause too many zeros in the sample in spite of the considerable degree of openness. A second approach is to create a binary variable when the reform index increases over the previous period, or there is a substantial rise in the index, namely in the median (Buti et al., 2009; Buti et al., 2010) by one (Christiansen et al., 2013) or by two standard deviations (Duval, 2008). This method is far from being efficient, since it neglects the magnitude of reforms. Of greater concern is the fact that the sample period was witness to many reform reversals as well as permanent reforms, so one should not run the risk of missing out on valuable information by disregarding them in the econometric analysis. Therefore, I rely on the levels of reforms proposed by Prati et al. (2013), since I believe they better reflect the actual situation of the economy and governments' policy choices.

To analyze whether and to what extent reforms lead to government changes within countries, I consider the following latent variable formulation:

$$T_{c,t} = \begin{cases} 1, & if\ T^*_{c,t} > 0 \\ 0, & if\ T^*_{c,t} \leq 0 \end{cases}$$

where $T_{c,t}$ is the dichotomous variable representing turnover that takes the value of 1 if there is a change in government in country *c* during year *t*, and $T^*_{c,t}$ is the unobservable (latent) variable. The estimation equation is thus:

$$T_{c,t} = \beta_0 + \beta_1 Reform_{s,c,t-1} + \Sigma_k \beta_k Z^k_{c,t} + u_{c,t} \quad (1)$$

where $Reform_{s,c,t-1}$ indicates reform index s, in country c, and time *t*, $Z^k_{c,t}$ denotes the set of economic and political control variables, and $u_{c,t}$ indicates the error term. I make use of the lagged value of the reform variable, as it takes time for reforms to feed into changes in the economy. In addition, macroeconomic variables will enter into the equation with a one-year lag.

I start by analyzing whether, on average, being reformist causes incumbent governments to help or hurt their own prospects for remaining in power. To this end, Table 3 reports the estimation results for the aggregate reform variable. Column 1 documents the pooled probit regression. Results indicate that aggregate reform is not statistically significant, suggesting that being reformist does not have any influence on the probability of a government being turned out of office. The margin of the majority is the only control variable that is statistically significant. In line with the expectations, governments that hold a majority in the parliament are less likely to have to step down. In column 2, I add year fixed effects to check whether unobserved time-variant country effects bias the estimated coefficients. Neither the significance nor the signs of the coefficients change. The coefficient estimate of aggregate reform remains statistically insignificant.

In columns 3 and 4, I check the sensitivity and robustness of the results with respect to alternative specifications, the probit random effect, and the linear probability model (LPM), respectively. Results do not reveal any difference in the effects of aggregate reform between these two specifications. Aggregate reform is not significantly associated with the probability of government change. However, inflation does appear to have a significant impact in column 4; high inflation elevates the probability of government turnover.[4]

Next, I probe whether results are driven by unobserved country characteristics that are themselves possibly correlated with particular explanatory variables and the likelihood of a change in government. For that purpose, I add country fixed effects to the baseline specification and summarize the results in column 5. The coefficient of aggregate reform is statistically insignificant.

[4] The dependent variable is not limited to lying between 0 and 1 in the LPM. For this reason, as a robustness check, I re-estimate the model by eliminating the values that lie outside the unit interval. The estimation results are robust to this specification.

While inflation is found to be positive and significant, the margin of the majority and the growth rate are borderline significant, with expected signs.

Table 3. Electoral Response to Structural Reform: Baseline Model

Dependent Variable: 1 if government changes	(1) (Probit)	(2) (Probit)	(3) (Probit RE)	(4) (LPM)	(5) (LPM)	Developed Countries (6) (Probit)	Developing Countries (7) (Probit)
Aggregate reform (t-1)	-0.015	-0.020	-0.043	-0.017	-0.017	0.055	-0.036
	(0.019)	(0.026)	(0.065)	(0.019)	(0.029)	(0.052)	(0.027)
Inflation (t-1)	0.002	0.003	0.005	0.001**	0.001*	0.022**	0.001
	(0.002)	(0.002)	(0.005)	(0.000)	(0.001)	(0.011)	(0.001)
Growth (t-1)	-0.007	-0.005	-0.028	-0.008	-0.015	-0.011	-0.003
	(0.010)	(0.010)	(0.027)	(0.010)	(0.010)	(0.024)	(0.011)
Government Share of GDP (t-1)	0.004	0.003	0.001	0.004	-0.011	0.021	-0.009
	(0.006)	(0.007)	(0.020)	(0.006)	(0.015)	(0.015)	(0.008)
Proportional representation	0.078	0.099	0.240	0.081	-0.181	-0.127	0.313***
	(0.075)	(0.079)	(0.274)	(0.074)	(0.201)	(0.147)	(0.112)
Parliamentary System	0.003	0.015	0.135	-0.005	0.043	0.032	0.093
	(0.072)	(0.079)	(0.259)	(0.070)	(0.237)	(0.241)	(0.111)
Coalition	0.072	0.082	0.250	0.061	0.094	0.045	0.076
	(0.070)	(0.076)	(0.219)	(0.069)	(0.082)	(0.116)	(0.098)
Majority in parliament	-0.174**	-0.175**	-0.489*	-0.168**	-0.167	-0.135	-0.290***
	(0.078)	(0.085)	(0.250)	(0.076)	(0.106)	(0.146)	(0.101)
Duration of the cabinet	0.031	0.025	0.102	0.029	0.034	-0.009	0.054*
	(0.023)	(0.026)	(0.066)	(0.022)	(0.025)	(0.036)	(0.030)
Country FE	NO	NO	NO	NO	YES	NO	NO
YEAR FE	NO	YES	NO	NO	NO	NO	NO
Observations	266	261	266	266	266	116	150
Pseudo R-squared *(within R-square for LPM)*	0.06	0.10	0.11	0.07	0.43	0.05	0.15

Notes: (1) For probit estimation, coefficients are marginal probability effects computed at sample mean. (2) Standard errors robust for heteroscedasticity are in brackets. (3) Aggregate reform is first principal component of all reform indicators. (4) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

Finally, I examine whether the association between the probability of government turnover and the existence of economic reforms varies across income groups within countries. My method was to split the countries into the categories of developed and developing according to the World Economic Outlook Database classification. Columns 6 and 7 report results for developed and developing countries, respectively. Results indicate that being reformist

does not have an impact on the probability of government turnover in either developed or developing countries. However, the determinants of government turnover are not the same in the two groups.

For the developed group, voters tend to penalize governments for price instability, as is evident by the positive and statistically significant response of inflation to the probability of government turnover; in the developing world, voters do not react to inflation, confirming the findings of Brender and Drazen (2008). Growth has the expected negative sign, though not statistically significant at conventional levels. Moreover, proportional representation, the margin of the majority, and the duration of the cabinet variables have a statistically significant impact on the likelihood of government change only in developing countries.

Even though the baseline specification finds no indication that governments increase their probability of remaining in power by enacting reforms, the effect is more likely to be different depending on the type of the reform. More importantly, this result might be driven by an individual reform variable. As suggested by Figure 2, different reforms might lead to distinct political outcomes. Therefore, as a next step, I check whether reforms in different sectors are associated with government change. The results, summarized in columns 1-6 of Table 4, are based on the pooled probit specification for each reform separately, with the control variables (column 1 in Table 3).

I find that trade reform is borderline significant with negative sign, whereas other reform variables—the current account, agriculture, networks, the capital account, and domestic finance—are not significantly associated with government change. The developed-country dummy and its interaction with each reform are statistically not different from zero, suggesting that, on average, the relationship between reforms and the probability of government turnover does not differ across different income groups. When it comes to the control variables, estimates reported in Table 4 show that voters are likely to reward governments for economic growth. While the margin in majority significantly decreases the likelihood of government turnover, proportional representation, which is statistically significant in all but five specifications, has positive impact on it.

Until now, we have found no evidence that governments are able to change the probability of turnover by implementing reforms. In the following subsection, I address concerns regarding omitted variable bias and sample selection. Finally, I conduct instrumental variable analysis to probe whether the estimations suffer from the endogeneity issue.

Table 4. Electoral Impact of Reforms in Different Sectors

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Reform (t-1)	-0.248*	0.048	0.088	0.132	-0.074	-0.079
	(0.149)	(0.124)	(0.096)	(0.164)	(0.121)	(0.133)
Developed	-0.496	0.121	-0.176	-0.142	0.012	-0.097
	(0.471)	(0.205)	(0.138)	(0.092)	(0.186)	(0.149)
Developed× Reform (t-1)	0.519	-0.257	0.067	-0.058	-0.100	0.020
	(0.538)	(0.243)	(0.175)	(0.217)	(0.227)	(0.207)
Inflation (t-1)	0.000	0.000	0.001	0.002	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Growth (t-1)	-0.012*	-0.014**	-0.006	-0.009	-0.013**	-0.013*
	(0.007)	(0.006)	(0.008)	(0.008)	(0.006)	(0.007)
Government Share of GDP (t-1)	0.005	0.004	0.002	0.002	0.004	0.007
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Proportional representation	0.136**	0.162**	0.135*	0.128*	0.166**	0.106
	(0.062)	(0.066)	(0.069)	(0.070)	(0.066)	(0.072)
Parliamentary System	-0.058	-0.051	0.105	0.115	-0.062	-0.026
	(0.065)	(0.067)	(0.079)	(0.077)	(0.067)	(0.075)
Coalition	0.038	0.036	-0.009	-0.020	0.035	0.036
	(0.057)	(0.057)	(0.068)	(0.063)	(0.057)	(0.061)
Majority in parliament	-0.120*	-0.134**	-0.129*	-0.141**	-0.137**	-0.166**
	(0.063)	(0.063)	(0.073)	(0.071)	(0.063)	(0.067)
Duration of the cabinet	0.001	0.014	0.018	0.018	0.014	0.023
	(0.018)	(0.018)	(0.021)	(0.020)	(0.018)	(0.020)
Observations	435	427	327	355	427	361
Pseudo R-squared	0.06	0.06	0.04	0.04	0.06	0.06

Notes: Probit estimation, standard errors robust for heteroscedasticity are in brackets. (2) Coefficients are marginal probability effects computed at sample mean. (3) "Developed" is a binary variable that takes a value of 1 for developed countries and 0 otherwise. (4) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

3.1. Robustness

Although unobserved country characteristics were taken into account in Table 3, the specification in column 2 might not be consistent, owing to the incidental parameter problem.[5] Similarly, LPM in column 5 neglects the binary nature of the dependent variable and therefore is not a reliable specifica-

[5] Since the number of unobserved heterogeneities increases with the number of observations, estimating them causes an incidental parameter problem for the other parameters. See Wooldridge (2010, p. 495).

tion. For these reasons, I estimate the logit fixed effect model, yet this results in a reduced sample size, since countries that do not have both turnover and no turnover are automatically dropped. Table 5 presents the estimation results. It shows that reform variables are not statistically significant, implying that governments implementing reforms are on average not affected at the following election. Besides, growth is found to be negative and significant in each specification, while the margin in majority is statically significant in all but one regression.

Government turnover might be brought about by many other factors. Following the previous literature, I take into consideration the macroeconomic indicators deviating from world averages in addition to the standard control variables. The idea is that perhaps voters' assessment of governments is not based on their country's economic conditions, but instead on how the national economy compares with the world economy. Furthermore, world economic growth could matter more than national economic growth to incumbent re-election probabilities. Leigh (2009), for instance, argues that voters are inclined to re-elect incumbent governments when the world economy grows, and that world economic growth is more beneficial to governments than domestic economic growth in less developed countries.

In contrast, Alesina et al. (2012) suggest that the difference between inflation, unemployment, and growth of OECD countries and the weighted average of G7 countries do not play any role in the probability of re-election, whereas Brender and Drazen (2008) find that world economic growth does not have a statistically significant impact on either developed or developing countries.

The results are presented in panel A of Table 6. As before, I do not find evidence of a significant relationship between reforms and government turnover. None of the coefficients of structural reforms is statistically significant. Regarding the control variables, I do not find consistent results for global economic conditions being given more weight than domestic ones.

In panel B of Table 6, I address the question of whether voters attach more importance to overall macroeconomic performance of governments than to the economic track record just before the election year. To this end, I include average inflation, growth, and the government's share of GDP during its tenure, in addition to their one-year lagged values, in the estimation equation. Brender and Drazen (2008) point out that both election-year inflation and inflation during the tenure of the government significantly decreases the probability of re-election in developed countries.

Table 5. Electoral Impact of Reforms in Different Sectors: Logit Fixed-Effects

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Reform (t-1)	1.252	-0.736	-1.701	-0.077	-1.044	0.649
	(1.188)	(0.746)	(1.035)	(0.558)	(0.815)	(0.664)
Inflation (t-1)	0.002	0.000	0.003	0.003	0.000	0.000
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
Growth (t-1)	-0.091**	-0.110**	-0.083*	-0.104**	-0.108**	-0.116**
	(0.040)	(0.044)	(0.045)	(0.045)	(0.044)	(0.050)
Government Share of GDP (t-1)	0.000	-0.022	-0.128	-0.073	-0.021	0.037
	(0.050)	(0.060)	(0.081)	(0.083)	(0.059)	(0.066)
Proportional representation	-0.888	-0.635	-0.475	-0.665	-0.589	-1.235
	(1.053)	(1.104)	(1.236)	(1.101)	(1.112)	(1.104)
Parliamentary System	1.259	1.158	0.680	1.560*	1.176	0.980
	(0.798)	(0.814)	(1.123)	(0.931)	(0.817)	(0.817)
Coalition	0.256	0.195	0.477	0.184	0.230	0.275
	(0.348)	(0.348)	(0.411)	(0.384)	(0.352)	(0.373)
Majority in Parliament	-0.281	-0.314	-0.238	-0.572	-0.304	-0.855*
	(0.439)	(0.443)	(0.510)	(0.486)	(0.447)	(0.497)
Duration of the cabinet	0.057	0.106	0.094	0.160	0.113	0.118
	(0.090)	(0.093)	(0.109)	(0.106)	(0.094)	(0.104)
Observations	328	321	237	270	321	279

Notes: (1) The figures in the table are logit coefficients. (2) Standard errors robust for heteroscedasticity are in brackets. (3) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

Estimates reported in Table 6 show that agriculture and networks reforms are borderline significant with positive signs, whereas other reforms are not substantially different from those obtained in the previous set of regressions. The developed-country dummy always has a negative sign and is statistically significant in four out of six regressions, suggesting that governments are less likely to be voted out of office in developed countries. In terms of the macroeconomic control variables, government share of GDP does not have any impact on the probability of government turnover, regardless of whether it is measured as one year before election or during the tenure of the government.

While lagged growth is statistically insignificant, average growth during the tenure of the government is always negatively signed and statistically significant in three out of six specifications. Moreover, its interaction with the developed-country dummy is insignificant. Hence, both in developed and

developing countries, voters are rational, meaning that they attach more value to overall performance of the governments.

Table 6A. Electoral Impact of Reforms in Different Sectors: Other Controls

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Panel A						
Reform (t-1)	-0.238	-0.025	0.095	0.086	-0.254	-0.119
	(0.148)	(0.112)	(0.084)	(0.121)	(0.269)	(0.115)
Developed	0.067	0.003	0.031	-0.027	0.032	-0.031
	(0.092)	(0.091)	(0.114)	(0.099)	(0.228)	(0.098)
Inflation (t-1)	0.005**	0.004	0.004	0.005*	0.009	0.002
	(0.002)	(0.002)	(0.003)	(0.003)	(0.006)	(0.002)
Growth (t-1)	-0.029	-0.034	-0.031	-0.040	-0.081	-0.033
	(0.029)	(0.029)	(0.036)	(0.033)	(0.073)	(0.031)
Government Share of GDP (t-1)	-0.118*	-0.096	-0.072	-0.090	-0.251	-0.103
	(0.062)	(0.062)	(0.070)	(0.071)	(0.155)	(0.068)
(National inflation – world inflation) (t-1)	-0.005**	-0.003	-0.003	-0.004	-0.008	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.002)
(National growth – world growth) (t-1)	0.019	0.021	0.027	0.035	0.050	0.023
	(0.029)	(0.029)	(0.036)	(0.034)	(0.073)	(0.032)
(National government share - world government share)	0.120*	0.098	0.071	0.088	0.258*	0.108
	(0.062)	(0.062)	(0.070)	(0.071)	(0.156)	(0.068)
Developed×(National inflation - world inflation) (t-1)	0.004	0.004	0.004	0.004*	0.008	0.0009
	(0.003)	(0.003)	(0.003)	(0.003)	(0.007)	(0.003)
Developed×(National growth - world growth) (t-1)	-0.006	-0.004	-0.009	-0.024	-0.013	-0.018
	(0.019)	(0.019)	(0.022)	(0.021)	(0.049)	(0.021)
Developed×(government share - world government share) (t-1)	0.120*	0.098	0.071	0.088	0.258*	0.108
	0.014	0.009	0.024*	0.015	0.023	0.008
	(0.011)	(0.012)	(0.014)	(0.012)	(0.030)	(0.012)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	435	427	327	355	427	361

Notes: See end of panel B of Table 6.

In terms of inflation, I obtain similar results to Brender and Drazen (2008). Average inflation during the tenure of the government significantly lifts the probability of government turnover only in developed countries.[6]

[6] There are other important control variables that could affect the relationship between reforms and government turnover. Economic crisis, for instance, is one of the leading determinants of reforms and at the same time could influence electoral outcomes. Besides, reforms might affect elections by altering income inequality. Finally, government change could be more likely in more institutionally developed countries. Empirical results that have not been reported to save space are robust to these alternative sets of control variables. Results are available upon request.

Table 6B. Electoral Impact of Reforms in Different Sectors: Other Controls

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Panel B						
Reform (t-1)	-0.153	0.091	0.142*	0.202*	-0.036	-0.038
	(0.146)	(0.117)	(0.085)	(0.116)	(0.111)	(0.117)
Developed	-0.379*	-0.372*	-0.624**	-0.511**	-0.323	-0.273
	(0.208)	(0.215)	(0.246)	(0.222)	(0.215)	(0.227)
Inflation (t-1)	0.001	0.003**	0.002	0.002	0.003**	0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Growth (t-1)	-0.002	-0.010	0.005	0.001	-0.009	-0.005
	(0.008)	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)
Government	0.023	-0.023	0.033	0.028	-0.026	-0.023
Share of GDP (t-1)	(0.024)	(0.032)	(0.027)	(0.028)	(0.032)	(0.042)
Inflation	-0.001	-0.004**	-0.001	-0.001	-0.004**	-0.004**
during tenure	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Growth	-0.021**	-0.019	-0.023*	-0.020	-0.019	-0.024*
during tenure	(0.010)	(0.013)	(0.013)	(0.012)	(0.013)	(0.014)
Government Share	-0.022	0.027	-0.035	-0.031	0.030	0.029
of GDP during tenure	(0.024)	(0.033)	(0.027)	(0.028)	(0.033)	(0.043)
Developed× Inflation	0.013**	0.017***	0.021***	0.016***	0.014**	0.008
during tenure	(0.006)	(0.006)	(0.008)	(0.006)	(0.006)	(0.009)
Developed× Growth	-0.001	0.010	-0.009	-0.012	0.008	0.004
during tenure	(0.025)	(0.025)	(0.028)	(0.026)	(0.026)	(0.028)
Developed× Government Share	0.014	0.008	0.025*	0.016	0.008	0.007
of GDP during tenure	(0.012)	(0.012)	(0.014)	(0.012)	(0.012)	(0.012)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	435	427	327	355	427	361

Notes: (1) Probit estimation, standard errors robust for heteroscedasticity are in brackets. (2) Coefficients are marginal probability effects computed at sample mean. (3) "Developed" is a binary variable that takes a value of 1 for developed countries and 0 otherwise. (4) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

A related concern is whether voters evaluate governments' reform implementation by just looking at one year before the election or by looking further back and taking into consideration the overall reform performance. This question is important for many reasons. Governments might avoid enacting reforms before elections in order not to risk their re-election prospects. Also, for the sake of diminishing the probability of losing elections, governments opportunistically might carry out costly reforms in the very beginning of their terms and realize only the ones that pay off immediately before elections. This will bias the results because the costless reforms will be over-represented in the sample. To test whether the association between reforms and government

turnover differs with respect to the timing of reforms, I add the average reform during the tenure of the current government to the baseline specification.

Results are summarized in Table 7. I find that only agriculture reform is statistically significant, with a p-value of 0.08. It appears that voters punish governments for agriculture reform when it is measured during the tenure of the government. As for other forms, the results do not reveal any difference from the previous ones. The estimated coefficients of trade, the current account, networks, the capital account, and domestic finance are statistically insignificant. To sum up, the idea that governments select certain types of reforms according to their distance from an election is not supported by the results in Table 7.[7]

Thus far, I have reported several robustness checks carried out by taking into account a different empirical specification, a different definition of reform, and different control variables that have been shown to be prime determinants of government turnover in the previous literature. Some aspects of endogeneity are dealt with through estimations. Logit fixed effect specification shows that omission of unobservable country characteristics does not cause bias in the estimations. A variety of control variables are included in the regression analysis in order to check whether omitted variables cause bias in coefficient estimates. I also test whether the timing of the reform changes the results by putting in reform during the tenure of the government instead of reform done one year before the election. Finally, in each regression, I include the macroeconomic indicators and economic reforms with a one-year lag in order to avoid the problems of reverse causality.

However, endogeneity of the reform variables might still bias the results. First, governments might decide to implement or not implement reforms based on their re-election prospects. For instance, if the re-election prospects are low, governments may avoid carrying out reforms and risking their future. In a similar vein, governments would be more inclined to enact reforms if they expect to be re-elected in the following election. Second, governments may choose reforms that will pay off quickly before the elections, and leave the more difficult reforms for the post-election period. Finally, leaving some important variables out of the estimation equation could make reform variables endogeneous.

In order to tackle this issue, I develop an IV strategy. The common method is to employ the weighted average of the variable of interest in the neighbor-

[7] When I consider whether or not the timing of the election matters, I find that baseline results are robust to the exclusion of early elections. To save space, I do not report these results, which are available upon request.

Table 7. Electoral Impact of Reforms in Different Sectors: Reform During the Tenure of the Government

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Reform during Tenure	-0.209	0.048	0.174*	0.178	-0.056	-0.053
	(0.155)	(0.130)	(0.098)	(0.166)	(0.127)	(0.141)
Developed	-0.621	0.095	-0.096	-0.097	0.012	-0.075
	(0.437)	(0.208)	(0.136)	(0.091)	(0.186)	(0.152)
Developed× Reform during tenure	0.672	-0.201	-0.022	-0.154	-0.079	0.002
	(0.500)	(0.248)	(0.172)	(0.210)	(0.230)	(0.213)
Inflation (t-1)	0.000	0.000	0.001	0.001	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Growth (t-1)	-0.013*	-0.014**	-0.007	-0.008	-0.013**	-0.014*
	(0.007)	(0.006)	(0.008)	(0.008)	(0.006)	(0.007)
Government Share of GDP (t-1)	0.005	0.005	0.006	0.005	0.005	0.007
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Proportional Representation	0.116*	0.141**	0.076	0.071	0.144**	0.079
	(0.062)	(0.066)	(0.068)	(0.068)	(0.066)	(0.073)
Parliamentary System	-0.053	-0.053	0.112	0.106	-0.062	-0.020
	(0.065)	(0.067)	(0.079)	(0.076)	(0.067)	(0.076)
Coalition	0.045	0.041	-0.016	-0.019	0.042	0.042
	(0.058)	(0.058)	(0.067)	(0.063)	(0.058)	(0.063)
Majority in parliament	-0.099	-0.121*	-0.128*	-0.138**	-0.122*	-0.152**
	(0.063)	(0.063)	(0.071)	(0.069)	(0.063)	(0.068)
Duration of the cabinet	-0.000	0.013	0.020	0.018	0.012	0.024
	(0.017)	(0.018)	(0.019)	(0.019)	(0.018)	(0.019)
Observations	429	419	337	364	419	351
Pseudo R-squared	0.04	0.05	0.04	0.03	0.05	0.05

Notes: (1) Probit estimation, standard errors robust for heteroscedasticity are in brackets. (2) Coefficients are marginal probability effects computed at sample mean. (3) "Developed" is a binary variable that takes a value of 1 for developed countries and 0 otherwise. (4) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

ing countries, where distance is used as the weight. The distance could be geographical distance, trade distance, or cultural distance. Following Tressel et al. (2009), I define the distance as political distance, as measured by the "entente" variable of the Correlates of War Database.[8]

[8] The entente variable takes a value of 1 if one or both states in the dyad had an understanding that consultations with the other state in the dyad would take place if a crisis occurred and 0 otherwise. There are other types of alliances, such as common pacts, defense pacts, and non-

I employ the weighted average of reform implementations of the allied countries as the instrument.[9] The logic behind the choice of this instrument is based on the assumption that policymakers in the home country are more (or less) likely to carry out reforms when their counterparts in allied countries also enact (do not enact) reforms. Hence, I conjecture that through *learning* and *spillover* channels (Abiad and Mody, 2005; Meseguer, 2006; Fidrmuc and Karaja, 2013), structural reforms diffuse from allied countries to the domestic country.[10] Moreover, I expect the instrument to be related to the dependent variable only through its impact on the reform implementation of the home country.

Panel A and panel B of Table 8 include the probit IV estimation and LPM IV estimation results, respectively, using lagged reform in political neighbors as an instrumental variable. The coefficient of lagged reform in the first stage, provided in Table 9 confirms—with the exception of agriculture reform—the relevance of reforms in the areas of trade, the current account, networks, the capital account, and domestic finance in neighbors to the promotion of parallel reforms in the home country, both with probit and LPM estimations.

Regarding the probit IV estimation in panel A of Table 8, it appears that structural reforms are not significantly associated with government turnover since the estimated coefficients of structural reforms are not significant at conventional levels.

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aggression pacts. As Rajan and Subramanian (2005) point out, the entente definition of an alliance is much more consistent with economic relationships, and therefore I choose to use this definition. However, the number of observations decreases, since some countries do not have any ally, according to the entente definition.

9 See also Giuliano et al. (2013) for a similar approach.

10 This general idea of economic reforms in one country can effect economic policies/reforms in other countries is not new. In fact, there are many studies in the literature which argue that economic policies are contagious. For instance, Meseguer (2006) finds out that learning from the region and from the rest of the world has positive and significant impact on trade liberalization, privatization, and entering into agreements with IMF. Fidrmuc and Karaja (2013) argue that the uncertain outcome of a reform can be mitigated by observing the experience of other countries. Information, which spillovers from other countries gives signal about the outcome of the reform and therefore help reduces the uncertainty. As a result, informational spillovers (depending on geographic, cultural and historical distance) have substantial impacts on fostering reforms. They also provide empirical evidence that spillovers for economic and political liberalization exist between post-communist countries. Gassebner et al. (2011) shows theoretically that reforms are more likely when they are pursued in other economies. In addition, they test the predictions of their model and point out that economic reforms diffuse from neighboring countries through the channels of geographical and cultural proximity. Finally, Abiad and Mody (2006) suggest that learning from the regional reform leaders significantly increases the likelihood of domestic financial reforms.

Furthermore, the Wald test indicates that probit IV results are not statistically different from pooled probit results.[11] The results in panel B of Table 8 are not substantially different from those in panel A. No coefficients of structural-reform variables are statistically significant.

Table 8A. Electoral Impact of Reforms in Different Sectors: IV Estimation Second Stage

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Panel A: IV Probit						
Reform (t-1)	0.160	0.356	-0.400	0.367	0.545	-0.080
	(1.685)	(1.983)	(9.783)	(0.864)	(2.189)	(0.909)
Inflation (t-1)	0.006	0.009	0.006	0.006	0.009	0.006
	(0.005)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
Growth (t-1)	-0.040	-0.037	-0.023	-0.045	-0.036	-0.038
	(0.025)	(0.033)	(0.066)	(0.027)	(0.027)	(0.028)
Government	0.040**	0.047	0.030	0.033	0.048*	0.056**
Share of GDP (t-1)	(0.018)	(0.032)	(0.219)	(0.023)	(0.028)	(0.025)
Proportional	0.292	0.294	0.276	0.224	0.289	-0.014
Representation	(0.272)	(0.349)	(0.386)	(0.331)	(0.343)	(0.316)
Parliamentary	-0.302	-0.346	-0.022	0.032	-0.325	-0.218
System	(0.243)	(0.265)	(1.612)	(0.252)	(0.233)	(0.260)
Coalition	0.267	0.229	0.258	0.093	0.230	0.250
	(0.186)	(0.186)	(1.716)	(0.195)	(0.184)	(0.216)
Majority	-0.353	-0.461*	-0.187	-0.231	-0.444*	-0.698**
in parliament	(0.280)	(0.255)	(1.560)	(0.261)	(0.268)	(0.300)
Duration	0.035	0.063	0.048	0.105	0.068	0.096
of the cabinet	(0.074)	(0.078)	(0.476)	(0.086)	(0.085)	(0.092)
Observations	243	233	172	186	233	202
Wald test of exogeneity *(p-value)*	0.46	0.94	0.93	0.73	0.87	0.74

Notes: See end of panel B of Table 8.

As is seen in the table, the Durbin-Wu-Hausman test does not reject the null hypothesis, which holds that the reform variables are exogenous, suggesting that the LPMIV estimation results are not significantly different from

[11] The Wald statistic is estimated by the simultaneous-equations system, with a two-step probit regression that was introduced by Rivers and Vuong (1988). The model includes two equations: a reduced-form equation, where the dependent variable is the endogenous variable (first stage), and a structural equation, where the dependent variable is the latent variable (second stage). This method consists of including the residuals of the first-stage equation in the second- stage equation. The Wald statistic simply tests whether the residuals from the reduced-form regression are correlated with those from the structural equation. In other words, the null hypothesis of the Wald test is that the pooled probit and probit IV results are significantly different.

the LPM results. Moreover, the Kleibergen-Paap test rejects the null hypothesis, which assumes that the instrument is weak in all of its estimations, except for column 3.

Table 8B. Electoral Impact of Reforms in Different Sectors: IV Estimation Second Stage (continued)

Dependent Variable: 1 if government changes	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Panel B: LPM IV						
Reform (t-1)	0.160	0.356	-0.400	0.367	0.545	-0.080
	(1.685)	(1.983)	(9.783)	(0.864)	(2.189)	(0.909)
Inflation (t-1)	0.006	0.009	0.006	0.006	0.009	0.006
	(0.005)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
Growth (t-1)	-0.040	-0.037	-0.023	-0.045	-0.036	-0.038
	(0.025)	(0.033)	(0.066)	(0.027)	(0.027)	(0.028)
Government	0.040**	0.047	0.030	0.033	0.048*	0.056**
Share of GDP (t-1)	(0.018)	(0.032)	(0.219)	(0.023)	(0.028)	(0.025)
Proportional	0.292	0.294	0.276	0.224	0.289	-0.014
Representation	(0.272)	(0.349)	(0.386)	(0.331)	(0.343)	(0.316)
Parliamentary	-0.302	-0.346	-0.022	0.032	-0.325	-0.218
System	(0.243)	(0.265)	(1.612)	(0.252)	(0.233)	(0.260)
Coalition	0.267	0.229	0.258	0.093	0.230	0.250
	(0.186)	(0.186)	(1.716)	(0.195)	(0.184)	(0.216)
Majority	-0.353	-0.461*	-0.187	-0.231	-0.444*	-0.698**
in parliament	(0.280)	(0.255)	(1.560)	(0.261)	(0.268)	(0.300)
Duration	0.035	0.063	0.048	0.105	0.068	0.096
of *the* cabinet	(0.074)	(0.078)	(0.476)	(0.086)	(0.085)	(0.092)
Durbin-Wu-Hausman test of exogeneity *(p-value)*	0.47	0.94	0.92	0.72	0.82	0.80
Kleibergen-Paap weak identification *F* statistic	5.90	12.65	0.114	38.53	7.38	70.07

Notes: (1) Probit estimation results are in Panel A. (2) Standard errors robust for heteroscedasticity are in brackets. (3) Coefficients are marginal probability effects computed at sample mean. (4) LPM estimation results are in Panel B. (5) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

All in all, reforms have been found to be statistically unrelated to the probability of government turnover, as in the baseline estimations. More importantly, both probit IV and LPM IV estimations are found to be statistically no different from pooled probit and LPM estimations.[12] For these reasons, I prefer to conduct the pooled probit estimation in the following sections.

[12] I also employ two other instruments. First, I instrument reforms in a given country with average reforms in the rest of the world. Second, reforms in the rest of the world, weighted by the distance from the country in question, are used as instruments. The results, which are available upon request, are very similar to the ones presented in Table 8.

4. Alternative Explanations

Until now, I have established no evidence for the existence of a credible association between structural reforms and political fortunes. A question that comes to mind is the possible heterogeneity of the relationship between reforms and government turnover. There could be certain factors that increase or decrease the probability of a government being rejected by the voters or that alter the direction of the effect of reform on the change of government. To this end, in this section, I address the question of whether the association between reforms and government turnover differs with respect to particular factors. First, I check whether macroeconomic conditions matter. Second, I examine to what extent the institutional environment is important. Finally, I investigate whether the sequencing of reforms plays a role in the political success or failure of governments.

4.1. The Role of Macroeconomic Conditions

An important issue to be aware of when planning to introduce economic reforms is how to deal with the macroeconomic environment. What should governments do in this situation if economic disequilibrium exists?

Macroeconomic stabilization is considered a sine qua non for successful economic reforms. In the literature, many studies agree that macroeconomic stabilization is the key precondition for bringing in structural reforms and thus should be given priority and taken care of before the reform process is initiated. Since any process of economic liberalization often requires costly adjustments (Edwards, 1984), macroeconomic stability should be maintained in order not to exacerbate adjustment costs. Edwards (1984) also argues that macroeconomic management after structural reforms is much more difficult than had been thought. He attributes some reform failures in Latin American countries in the 1980s to the fact that reforms took place together with macroeconomic stabilization programs that were aimed at reducing inflation, budget deficits, etc.

High volatility or a high propensity for financial crises means greater uncertainty, which eventually may deter investments. More importantly, an unstable macroeconomic environment might cause uneven distribution of costs and benefits following reforms. Furthermore, reform programs put in place within an unsettled macroeconomic environment are likely to be reversed and therefore unlikely to be credible.

Table 9. Electoral Impact of Reforms in Different Sectors: IV Estimation First Stage

Dependent Variable: Reform	(1) Trade	(2) Current A.	(3) Agriculture	(4) Networks	(5) Capital A.	(6) Domestic F.
Panel A: IV Probit						
Reform in political	0.505***	0.374***	-0.066	0.757***	0.330***	0.608***
neighbors (t-1)	(0.205)	(0.103)	(0.191)	(0.117)	(0.119)	(0.071)
Inflation (t-1)	-0.0006***	-0.0005***	0.00001	-0.0005**	-0.0005***	-0.0003
	(0.0020)	(0.0001)	(0.0003)	(0.0002)	(0.0002)	(0.0002)
Growth (t-1)	0.007*	0.013***	0.004	-0.004	0.009	0.013**
	(0.004)	(0.005)	(0.008)	(0.005)	(0.006)	(0.005)
Government	-0.005	-0.013***	-0.018**	-0.004	-0.010**	-0.014***
Share of GDP (t-1)	(0.003)	(0.004)	(0.008)	(0.004)	(0.005)	(0.004)
Proportional	-0.014	0.029	-0.001	0.071	0.032	-0.039
Representation	(0.040)	(0.066)	(0.088)	(0.068)	(0.070)	(0.071)
Parliamentary	0.073**	0.072	-0.169	-0.057	0.016	0.123**
System	(0.37)	(0.056)	(0.112)	(0.056)	(0.063)	(0.060)
Coalition	-0.020	-0.031	0.194***	-0.058	-0.025	0.014
	(0.028)	(0.040)	(0.061)	(0.054)	(0.051)	(0.038)
Majority	-0.086***	-0.056	0.138*	-0.001	-0.063	-0.12**
in parliament	(0.034)	(0.056)	(0.08)	(0.066)	(0.064)	(0.05)
Duration	-0.008	-0.010	-0.041**	0.002	-0.018*	0.015*
of the cabinet	(0.007)	(0.010)	(0.018)	(0.008)	(0.010)	(0.008)
Observations	243	233	172	186	233	202
Panel B: LPM IV						
Reform in political	0.505**	0.374***	-0.066	0.757***	0.329***	0.608***
neighbors (t-1)	(0.207)	(0.104)	(0.194)	(0.120)	(0.120)	(0.072)
Inflation (t-1)	-0.0006**	-0.0005***	0.00001	-0.0005**	-0.0005**	-0.0003
	(0.0002)	(0.0001)	(0.0003)	(0.0002)	(0.0002)	(0.0002)
Growth (t-1)	0.006*	0.013**	0.004	-0.004	0.009	0.012**
	(0.004)	(0.005)	(0.008)	(0.005)	(0.006)	(0.006)
Government	-0.005	-0.013***	-0.018**	-0.004	-0.010**	-0.014***
Share of GDP (t-1)	(0.003)	(0.004)	(0.008)	(0.004)	(0.005)	(0.004)
Proportional	-0.014	0.029	-0.001	0.071	0.032	-0.039
Representation	(0.041)	(0.067)	(0.090)	(0.070)	(0.071)	(0.072)
Parliamentary	0.073*	0.071	-0.169	-0.0057	0.016	0.123**
System	(0.038)	(0.056)	(0.114)	(0.057)	(0.064)	(0.060)
Coalition	-0.020	-0.031	0.194***	-0.058	-0.025	0.014
	(0.028)	(0.040)	(0.062)	(0.055)	(0.052)	(0.038)
Majority	-0.086**	-0.057	0.138*	-0.001	-0.063	-0.120**
in parliament	(0.034)	(0.057)	(0.082)	(0.067)	(0.064)	(0.051)
Duration	-0.008	-0.010	-0.041**	0.002	-0.018*	0.015*
of the cabinet	(0.007)	(0.010)	(0.018)	(0.008)	(0.010)	(0.008)
Observations	243	233	172	186	233	202

Notes: (1) Standard errors robust for heteroscedasticity are in brackets. (2) Coefficients are marginal probability effects computed at sample mean. (3) *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

If macroeconomic conditions are not stable, the public will expect reform attempts to be discontinued or reversed (Edwards, 1984). Edwards (1989) argues that in the presence of extensive macroeconomic disequilibrium, most countries increase tariffs and impose trade, capital, and exchange controls in order to slow the outflow of their foreign-exchange reserves. For instance, trade liberalization might cause substantial deterioration in the current-account balance in the short run owing to the decrease in tariff revenues. If a government suffers from a fiscal deficit, then it might choose the easy option of reversing reform. The high risk and cost and unequal distribution of reform gains and losses might also galvanize the political opposition against the ruling party. Therefore, governments face the risk of reform failure or being voted out of office, or both.

Loayza et al. (2007) argue that macroeconomic volatility has direct adverse effects on economic outcomes, such as economic growth and future consumption. The welfare cost of volatility works through the channels of economic and political uncertainty as well as tightening constraints on investment. Consequently, I scrutinize the question of whether the political repercussions of structural reforms are related to macroeconomic instability. To this end, I first calculate the standard deviation of real GDP per capita growth, the standard deviation of the current-account balance to GDP, and the standard deviation of the growth rate of gross capital flows to GDP over the sample period. Then I split the countries into two groups according to whether they are above or below the median of each indicator.

The volatility of these macroeconomic indicators is a prime sign of macroeconomic instability. Growth volatility is negatively associated with long-run economic growth (Hnatkovska and Loayza, 2003). Using Turkish data, Berument et al. (2012) show that higher growth volatility reduces total factor productivity and investment and causes exchange-rate depreciation, while Huang et al. (2015) find that across US states, higher growth volatility is significantly related to higher income inequality. In addition, current-account balance volatility as well as volatility in the growth rate of private capital flows might cause real exchange-rate volatility, which ultimately could trigger exchange-rate crises.

Table 10 reports the estimation results for each group of countries. The specification is the baseline pooled probit specification, but control variables are not reported, owing to space limitations. Columns 1 and 2 consider countries with more and less growth volatility, respectively. The results in column 2 indicate that international trade reforms and financial reforms are negatively related to the probability of government turnover if GDP growth volatility is low, whereas agriculture reform, unexpectedly, is statistically significant with

a positive sign. Columns 3 and 4 of Table 10 display the estimation results for more and less current-account balance volatility.

It appears that governments that enact product-market reforms in countries where the current-account balance is highly volatile are punished by voters. Yet there is a negative relationship between the probability of government turnover and trade and financial reforms in countries where the current-account balance is less volatile. Finally, I consider volatility in the growth rate of private capital flows in columns 5 and 6. Similar to the previous results, voters reward governments for financial reforms if macroeconomic stability is achieved. On the other hand, implementing agriculture reforms seems to be electorally detrimental to governments if there exists high volatility.

Overall, the results suggest that implementing structural reforms in the presence of macroeconomic disequilibrium does not benefit the party in party. Voters are inclined to reward governments for introducing financial reforms only if macroeconomic stability has been restored. International trade reform has a similar interpretation when it is measured with the trade variable, since it is significant, with a negative sign in columns 2 and 4, while it is negative but with a p-value of 0.11 in column 6. Finally, product-market reforms are found to be positively associated with government turnover in columns 4 and 6, suggesting that voters choose to penalize governments if product-market reforms are imposed under unsound macroeconomic conditions.

4.2. The Role of the Institutional Environment

Another essential condition for successful, growth-enhancing structural reforms is the institutional environment. The idea is that macroeconomic policies are effective only if a country has already reached a certain level of institutional development. For instance, Prati et al. (2013) argue that institutional underdevelopment prevents countries from taking full advantage of substantial structural reforms. Having completed a cross-country analysis, they find that structural reforms are associated with growth only in countries with a certain level of institutional quality. Conversely, in countries where institutions are not sufficiently developed, reforms do not spark growth. Similarly, Bekaert et al. (2005) assert that growth prospects from liberalization are almost three times higher for countries with a higher than median level of institutional quality. Tressel and Detragiache (2008) analyze the impact of banking reform in 91 countries from 1973 to 2005. Their findings demonstrate that banking-sector reforms promote financial deepening, but only in countries with adequate checks and balances on political power.

Bussiere and Fratzscher (2008) argue that institutional development matters only for the long-run growth potential arising from structural reforms. However, Aksoy (2014) finds that countries with better property rights and superior contracts enforcement are already benefiting from reforms in the short run, since better institutional quality alleviates the short-term negative growth impacts of reforms. More significantly, poor institutional quality exacerbates the adverse aspects of reforms. If we assume that voters are short-sighted, they will take the short-run losses brought by reforms into account rather than the long-term benefits when they get ready to vote. Thus, I expect the probability of government turnover to rise if reforms are attempted in institutionally underdeveloped countries. In contrast, voters would be willing to reward reformist governments if the costs of the reforms are not distributed unevenly and unfairly, or compensation schemes are created to ease the burden borne by reform losers, who are likelier to be found in institutionally developed countries.

To investigate the degree to which institutions mediate or enhance the electoral consequences of structural reforms, I follow an approach similar to the previous section's I compute the median of the institutional indicators for the period 1975-2006 and then split the countries into two groups, according to whether they are above or below the median level. The indicators that I employ are constraints on the executive, the quality of democracy, and the extent of political rights.[13] Table 11 presents the estimation results. As in Table 10, I do not report the coefficients of control variables in order to save space.

According to the results in column 1, implementing international trade reforms as well as domestic financial reforms significantly decreases the probability of government turnover rin more democratic countries. On the other hand, current-account and product-market reforms are statistically significant, with a positive sign in column 2, suggesting that voters opt to punish governments for carrying out these reforms in less democratic countries. In accordance with these findings, international trade reforms and financial reforms are negatively associated with the probability of government turnover when there are sufficient checks and balances on political power (column 3).

[13] Institutional data are taken from the Quality of Government Dataset. They are p_xconst, fh_polity2, and fh_pr, respectively. The constraints on the executive indicator (p_xconst) ranges from 1 to 7, where 1 corresponds to unlimited authority and 7 to the existence of other groups' effective authority equal to or greater than the executive's. The quality of democracy (fh_polity2) ranges from 0 to 10, where 0 is least democratic and 10 most democratic. Finally, political rights (fh_pr) are related to the free participation in the political process, including, among others, the right to vote freely and to join political parties. It is scaled between 1 (most free) and 7 (least free).

In the other case (column 4), only the current-account variable is statistically significant, with an expected positive sign. Finally, in columns 5 and 6, I probe whether results are robust when considering another control variable; political rights. International trade reforms and financial reforms are statistically significant, with a negative sign in column 5, showing that governments decrease their probability of losing power after reforming their economies in countries where property rights are well protected. As for the other group of countries, the results in column 6 indicate that voters penalize their governments for promulgating current-account and agriculture reforms if political rights are not well enforced.

4.3. The Role of Reform Sequencing

Another area that I have wanted to explore is the role of reform sequencing. If all reforms have the potential to promote economic growth, which type of reform should be presented first? Does the ordering of reforms matter for electoral outcomes? The relatively old literature on reform sequencing, in fact, indicates that ordering does matter. This extensive literature mainly deals with the ordering of current-account and capital-account liberalization moves. If the capital account is liberalized first, then the economy becomes more vulnerable to capital inflows. Exchange-rate volatility arising from capital flows may have a significant negative impact on exports and therefore on the current-account balance.

Regarding the relationship between capital-account liberalization and domestic financial liberalization, it is argued that the latter should be enacted first, since it is related to the development of the entire banking sector, the money markets, and the interbank markets as well as to the strengthening of all domestic financial institutions. The logic underlying this statement runs as follows: in a financially repressed economy, the domestic banking system already suffers from heavy regulations. If the capital account is liberalized in such a strait-jacketed environment, where interest rates are artificially pinned down at low levels, heavy capital outflows could take place (Edwards, 1984), and severe domestic regulations could weaken the competitiveness of domestic banks relative to international ones (Nsouli et al., 2002).

Furthermore, Kose et al. (2008) claim that, according to the IMF's sequencing approach to capital-account liberalization, financial-sector reforms that reinforce prudential regulation and supervision, along with financial restructuring, should precede any capital-account liberalization. A sound domestic financial system could also reduce domestic economies' vulnerability to capital-flow volatility.

Table 10. Electoral Impact of Reforms in Different Sectors: The Role of Macroeconomic Conditions

Conditions:	(1) **More Growth Vol.**	(2) **Less Growth Vol.**	(3) **More Current-Account Balance**	(4) **Less Current-Account Balance**	(5) **More Capital Flows Volatility**	(6) **Less Capital Flows Volatility**
Trade (t-1)	0.252	-0.354**	-0.243	-0.335**	-0.075	-0.257
	(0.286)	(0.158)	(0.292)	(0.159)	(0.294)	(0.163)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.11	0.08	0.18	0.04	0.04	0.07
Observations	175	260	140	295	223	212
Current Account (t-1)	0.125	-0.245*	-0.155	0.122	0.035	-0.161
	(0.166)	(0.137)	(0.136)	(0.181)	(0.143)	(0.150)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.14	0.05	0.03	0.05	0.04	0.07
Observations	168	184	289	138	223	204
Agriculture (t-1)	0.080	0.250**	0.293*	0.076	0.231*	-0.037
	(0.140)	(0.118)	(0.177)	(0.095)	(0.134)	(0.108)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.12	0.13	0.20	0.03	0.08	0.04
Observations	130	197	93	234	155	172
Networks (t-1)	0.152	0.178	0.473*	-0.016	0.052	0.154
	(0.206)	(0.140)	(0.288)	(0.119)	(0.159)	(0.147)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.13	0.11	0.20	0.03	0.06	0.04
Observations	131	224	96	259	163	192
Capital Account (t-1)	-0.048	-0.259**	0.170	-0.279**	0.036	-0.350**
	(0.159)	(0.133)	(0.170)	(0.130)	(0.136)	(0.149)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.14	0.07	0.20	0.05	0.04	0.08
Observations	168	259	138	289	223	204
Domestic Finance (t-1)	0.190	-0.287**	0.422	-0.188*	0.071	-0.254*
	(0.200)	(0.137)	(0.276)	(0.117)	(0.160)	(0.138)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.15	0.10	0.35	0.04	0.05	0.08
Observations	128	233	82	279	171	190

Notes: Probit estimation, standard errors robust for heteroscedasticity are in brackets. Coefficients are marginal probability effects computed at sample mean. *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

Table 11. Electoral Impact of Reforms in Different Sectors: The Role of Institutional Environment

Conditions:	(1) **Better Democracy**	(2) **Worse Democracy**	(3) **More Constraints on the Executive Power**	(4) **Less Constraints on the Executive Power**	(5) **Better Protected Property Rights**	(6) **Worse Protected Property Rights**
Trade (t-1)	-0.343**	-0.139	-0.441**	-0.131	-0.335**	-0.046
	(0.179)	(0.259)	(0.189)	(0.245)	(0.171)	(0.284)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.06	0.15	0.05	0.11	0.07	0.17
Observations	310	125	283	152	312	123
Current Account (t-1)	-0.199*	0.380*	-0.234*	0.344*	-0.218*	0.472**
	(0.123)	(0.226)	(0.135)	(0.187)	(0.122)	(0.229)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.06	0.23	0.05	0.18	0.06	0.25
Observations	308	119	272	155	314	113
Agriculture (t-1)	-0.024	0.302**	-0.004	0.133	-0.015	0.291**
	(0.104)	(0.146)	(0.108)	(0.144)	(0.102)	(0.148)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.05	0.18	0.04	0.10	0.04	0.20
Observations	223	104	201	146	232	95
Networks (t-1)	-0.081	0.409*	-0.018	0.220	-0.083	0.309
	(0.119)	(0.228)	(0.128)	(0.214)	(0.116)	(0.229)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.05	0.17	0.04	0.05	0.05	0.18
Observations	250	105	226	129	259	96
Capital Account (t-1)	-0.170	-0.178	-0.272**	0.061	-0.189*	-0.670
	(0.118)	(0.207)	(0.128)	(0.182)	(0.117)	(0.207)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.06	0.22	0.06	0.16	0.06	0.22
Observations	308	119	272	155	314	113
Domestic Finance (t-1)	-0.219*	0.006	-0.388***	0.131	-0.231*	0.095
	(0.126)	(0.215)	(0.141)	(0.183)	(0.125)	(0.221)
Control Variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.07	0.20	0.08	0.14	0.07	0.22
Observations	259	102	233	128	260	101

Notes: Probit estimation, standard errors robust for heteroscedasticity are in brackets. Coefficients are marginal probability effects computed at sample mean.
*** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

Table 12. Electoral Impact of Reforms in Different Sectors: The Role of Reform Sequencing

Reform:	(1) **Current Account**	(2) **Agriculture**	(3) **Network**	(4) **Capital Account**	(5) **Domestic Finance**
Reform (t-1)	-0.249	-0.053	0.070	-0.222	-0.022
	(0.162)	(0.149)	(0.133)	(0.144)	(0.137)
Capital Account	0.139	0.185*	0.281***	0.123**	0.141*
Liberalization First	(0.088)	(0.100)	(0.096)	(0.085)	(0.087)
Domestic Financial	-0.060	0.080	0.001	-0.068	-0.047
Liberalization First	(0.104)	(0.156)	(0.106)	(0.109)	(0.101)
Reform $(t-1) \times$ Capital Account	1.065***	0.296	0.695**	0.785***	0.092
Liberalization First	(0.376)	(0.237)	(0.299)	(0.323)	(0.266)
Reform $(t-1) \times$ Domestic Finance	0.201	0.447	-0.011	-0.034	0.331
Liberalization First	(0.380)	(0.352)	(0.441)	(0.453)	(0.378)
F test of joint significance *(p-value)*	0.03	0.12	0.00	0.06	0.42
Control Variables	YES	YES	YES	YES	YES
Pseudo R-squared	0.08	0.11	0.11	0.08	0.07
Observations	323	243	273	323	329

Notes: Probit estimation, standard errors robust for heteroscedasticity are in brackets. Coeffcients are marginal probability effects computed at sample mean. *** significant at 1%; ** significant at 5%; * significant at 10%. Source: Author's estimations.

Finally, theoretical analysis of the sequencing of liberalization steps in the areas of trade and domestic finance has been relatively scarce with respect to other orderings. Among others, Bhataccarya (1999) argues that trade liberalization should precede domestic financial liberalization, since if the expanded resources thanks to the latter are directed to the importable sector, the importable sector will grow while the exportable sector will contract.

In addition to the above arguments, Aksoy (2014) argues that the pursuit of an optimal reform sequence ameliorates the adjustment costs of structural reforms in developing countries. In particular, the short-run negative growth effects of reforms in domestic finance and the capital account weaken and become positive in certain cases—if the financial reforms follow the trade reforms, for example. That is why I expect that financial reforms are also less costly in terms of political consequences for incumbent governments, provided that the enacting countries are open to trade when they start to restructure their economy.[14]

To test this hypothesis and detect whether alternative sequencing strategies can be advocated for governments, I take the following steps. First, to obtain precise liberalization dates, I set a threshold for the indices, above which a country is considered liberalized. In keeping with previous studies, the reform variable is defined to take the value of 1 when the index is above the median of the index across all countries, and the value of 0 when the index is less than or equal to the median.[15] Then I split the countries into three groups, according to whether they first conducted current-account liberalization, capital-account liberalization, or domestic-financial liberalization.

Finally, instead of running regression analysis for each group separately, I interact each dummy with mean-deviated reform variables and present the results in Table 12. Thus, the coefficient of each dummy indicates the impact of opening up the corresponding sector first, when reform is at its median level.

The results in column 1 show that the capital-account-liberalization-first variable is borderline significant, with a positive sign (p-value of 0.11). Table 12 also reports the p-value for the F-test on the joint significance of dummies and interaction variables, showing that the test passes, with a p-value of 0.09.

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[14] Note that there might be some distributional costs specific to different sectors of the economy, which are not captured by overall economic growth.

[15] The median level of trade index is equal to 0.78, the current-account index is equal to 0.63, the capital-account and domestic-finance indices are equal to 0.50.

Therefore, in countries adhering to a capital-account-liberalization-first strategy, implementing trade reforms significantly increases the probability of government turnover. In columns 2 and 3, the electoral impacts of product-market reforms appear. In both columns, the KA first variable is positive and significant. The F test cannot reject the joint significance of interaction terms in column 3, whereas it is marginally insignificant in column 2. The results indicate that deregulation in product markets is costlier for governments in countries that opened up their capital accounts first, compared with others that opened up their current accounts first.

For capital-account reforms, the capital-account-liberalization-first dummy's interaction with them has a statistically significant positive effect on government turnover. Moreover, the joint significance test results in a p-value of 0.06, meaning that when governments implement capital-account reforms, the resulting electoral impact appears to be significantly negative if the capital account has been liberalized first, compared to countries that acted on the current account first.

Finally, the results in column 5 demonstrate that although the coefficient of the capital- account-liberalization-first variable is statistically significant, with a positive sign, the F test fails to reject the null hypothesis of joint significance. Hence, there is not enough evidence to support the notion that the probability of government turnover goes up after domestic financial reforms have been introduced in countries that first opened up their capital accounts, compared to those that started with their current accounts.[16]

To sum up, the sequencing of reforms leads to political as well as economic changes. An optimal sequence makes voters reward reformist governments, possibly because it shields the economy from the uncertainty and adjustment costs that often appear in tandem with reforms. Taken together, my results lead me to conclude that the optimal sequence of reforms is imperative for electoral success.

[16] In this analysis, I used the current-account index to determine the specific year of international trade liberalization and the ordering between international trade and financial liberalizations. The results, which are available upon request, are virtually identical to the ones yielded when the trade index was used in place of the current-account index. Moreover, when I made the capital-account-liberalization-first variable the base group, I found no indication that the ordering of capital-account and domestic-financial liberalization influences the association between structural reforms and government turnover.

5. Concluding Remarks

In this paper, I have investigated the effects of structural reforms on the probability of government turnover, an issue that has received scant attention in the literature. I have shown considerable evidence that being reformist does not affect election outcomes. The fact that there is no significant correlation—at first glance—between structural reforms and governments' losing power is not driven by the offsetting responses of different reforms. In particular, reform actions directed at international trade, product markets, and financial markets appear to have little impact on the likelihood of government turnover, both in developed and developing countries. Similar results turn up for the political effects of economic reforms executed over the incumbents' term of office.

However, the baseline regressions disguise considerable heterogeneity in terms of a country's macroeconomic structure, institutional quality, and choice of reform sequencing. First, stable economic conditions help governments increase their probability of being re-elected. Voters are more inclined to punish reformist governments if reforms have been installed where growth, the current-account balance, and private capital flows are all highly volatile. On the other hand, eliminating rigidities in their markets exerts a favorable influence over electoral outcomes, provided that macroeconomic stability is achieved. Moreover, voters tend to reward reformist governments in institutionally developed countries, as adequate institutional quality helps cushion the adverse effects of reforms; while they punish governments for introducing reforms where institutional capacities are weak. Finally, I have provided evidence that voters are more likely to accept reforms if an optimal sequence of reforms is considered. In particular, voters reward reformist governments if current- account liberalization precedes capital-account liberalization.

Also, strong macroeconomic performance, low inflation, and high growth rates are shown to be associated with a lower probability of government turnover. While a favorable overall growth performance significantly reduces the probability of a government losing power in all countries, average inflation during a government's tenure has a statistically significant effect only in developed countries. Finally, I found weak indication that voters evaluate governments' performance on the basis of a comparison with global economic conditions.

The political economy of structural reforms is much more complicated than it appears. In terms of policy implications, this paper highlights the specific conditions that affect the electoral consequences of economic structural reforms. A prudent government should take into consideration the role of the institutional environment, macroeconomic conditions, and optimal sequencing

when undertaking such changes. Stabilization programs have to be seen to before structural reforms are launched in order not to jeopardize the adjustment costs. Similarly, lack of institutional quality seems to be another reason for electoral defeats of reformist governments. Hence, political reforms should precede economic ones to boost the chances for future electoral success of reformist governments. Finally, the finding that the correct ordering of structural reforms matters for maximizing the odds of winning upcoming elections suggests that governments would do well to take into consideration the appropriate sequencing of planned reforms.

References

Abiad, A., E. Detragiache, and T. Tressel, (2009), "A New Database of Financial Reforms", *IMF Staff Papers*, 57(2), pp. 281-302.

Abiad, A. and A. Mody, (2005), "Financial Reform: What Shakes it? What Shapes it?", *The American Economic Review* 95 (1), pp. 66-88.

Aksoy, T., (2014), "Structural Reforms and Growth in Developing Countries", *Unpublished manuscript*.

Alesina, A. and A. Drazen, (1991), "Why are Stabilizations Delayed?", *The American Economic Review 81* (5), pp. 1170-1188.

Alesina, A., R. Perotti, J. Tavares, M. Obstfeld, and B. Eichengreen, (1998), "The Political Economy of Fiscal Adjustments", *Brookings Papers on Economic Activity* 1998 (1), pp. 197-266.

Alesina, A., D. Carloni, and G. Lecce, (2012), "The Electoral Consequences of Large Fiscal Adjustments", in Alberto Alesina and Francesco Giavazzi, Eds., *Fiscal Policy After the Financial Crisis*, NBER Books, pp. 531-570.

Balassa, B., (1982), *Development Strategies in Semi-industrial Economies*. Oxford University Press.

Bekaert, G., C. R. Harvey, and C. Lundblad, (2005), "Does G growth?", *Journal of Financial Economics 77* (1), pp. 3-55.

Berument, M. H., N. N. Dincer, and Z. Mustafaoğlu, (2012), "Effects of Growth Volatility on Economic Performance–Empirical Evidence from Turkey", *European Journal of Operational Research 217* (2), pp. 351-356.

Brender, A. and A. Drazen, (2008), "How do Budget Deficits and Economic Growth Affect Re-election Prospects? Evidence from a Large Panel of Countries", *The American Economic Review 98* (5), 2203-2220.

Bussiere, M. and M. Fratzscher, (2008), "Financial Openness and Growth: Short-run Gain, long-run Pain?", *Review of International Economics 16* (1), pp. 69-95.

Buti, M., A. Turrini, P. Van den Noord, and P. Biroli, (2009), "Defying the Juncker Curse: Can Reformist Governments be Re-elected?", *Empirica 36* (1), pp. 65-100.

Buti, M., A. Turrini, P. Van den Noord, and P. Biroli, (2010), "Reforms and Re-elections in OECD Countries", *Economic Policy 25* (61), pp. 61-116.

Campos, N. F. and F. Coricelli, (2012), "Financial Liberalization and Reversals: Political and Economic Determinants", *Economic Policy 27* (71), pp. 483-513.

Chappell Jr, H. W. and L. G. Veiga, (2000), "Economics and Elections in Western Europe: 1960-97", *Electoral Studies 19* (2), pp. 183-197.

Christiansen, L., M. Schindler, and T. Tressel, (2013), "Growth and Structural Reforms: A New Assessment", *Journal of International Economics 89* (2), pp. 347-356.

Chwieroth, J. M. and A. Walter, (2010), *Financial Crises and Political Turnover: A Long- run Panoramic View*. Paper presented at the International Political Economy Society Conference, Harvard University, Cambridge, MA.

Clemens, M. A. and J. G. Williamson, (2004), "Why Did the Tariff–Growth Correlation Change After 1950?", *Journal of Economic Growth 9* (1), pp. 5-46.

Crespo-Tenorio, A., N. M. Jensen, and G. Rosas, (2014), "Political Liabilities Surviving Banking Crises", *Comparative Political Studies 47* (7), pp. 1047-1074.

De Haan, J. and J.-E. Sturm, (2003), "Does More Democracy Lead to Greater Economic Freedom? New Evidence for Developing Countries", *European Journal of Political Economy 19* (3), pp. 547-563.

Drazen, A. and W. Easterly, (2001), "Do Crises Induce Reform? Simple Empirical Tests of Conventional Wisdom", *Economics & Politics 13* (2), pp. 129-157.

Duval, R., (2008), "Is There a Role for Macroeconomic Policy in Fostering Structural Reforms? Panel Evidence from OECD Countries Over the Past two Decades", *European Journal of Political Economy 24* (2), pp. 491-502.

Edwards, S., (1984), *The Order of Liberalization of the External Sector in Developing Countries*. International Finance Section, Department of Economics, Princeton University, Princeton, New Jersey.

Edwards, S., (1989), "On the Sequencing of Structural Reforms", *NBER Working Paper No. 3138*.

Edwards, S., (2009), "Sequencing of Reforms, Financial Globalization, and Macroeconomic Vulnerability", *Journal of the Japanese and International Economies 23* (2), pp. 131-148.

Edwards, S. and S. Van Wijnbergen, (1986), "The Welfare Effects of Trade and Capital Market Liberalization", *International Economic Review 27* (1), pp. 141-148.

Fernandez, R. and D. Rodrik, (1991), "Resistance to Reform: Status Quo Bias in the Presence of Individual-specific Uncertainty", *The American Economic Review 81* (5), pp. 1146-1155.

Fidrmuc, J. and E. Karaja, (2013), "Uncertainty, Informational Spillovers, and Policy Reform: A Gravity-Model Approach", *European Journal of Political Economy 32*, pp. 182-192.

Gassebner, M., N. Gaston, and M. J. Lamla, (2011), "The Inverse Domino Effect: Are Economic Reforms Contagious?", *International Economic Review, 52* (1), pp. 183-200.

Giuliano, P., P. Mishra, and A. Spilimbergo, (2013), "Democracy and Reforms: Evidence from a New Dataset", *American Economic Journal: Macroeconomics 5* (4), pp. 179-204.

Hnatkovska, V. and N. Loayza, (2003), "Volatility and Growth", *World Bank Working Papers*.

Huang, Ho-Chuan, Wen Shwo Fang, Stephen M. Miller, and Chih-Chuan Yeh, (2015), "The Effect of Growth Volatility on Income Inequality", *Economic Modelling*, 45, pp. 212-222.

Imai, M., C. A. Shelton, and R. Hayes, (2014), "Attribution Error in Economic Voting: Evidence from Trade Shocks", *Economic Inquiry 53* (1), 285-275.

Kaminsky, G. L. and S. L. Schmukler, (2008), "Short-run Pain, Long-run Gain: Financial Liberalization and Stock-market Cycles", *Review of Finance 12* (2), pp. 253-292.

Keefer, P., (2012), *Dpi2012 Database of Political Institutions: Changes and Variable Definitions*. Development Research Group, The World Bank.

Kose, M. A., J. Di Giovanni, A. Faria, G. Dell'Ariccia, P. Mauro, M. Schindler, J. D. Ostry, and M. Terrones, (2008). *Reaping the Benefits of Financial Globalization*. International Monetary Fund.

Leigh, A., (2009), "Does the World Economy Swing National Elections?", *Oxford Bulletin of Economics and Statistics 71* (2), pp. 163-181.

Lewis-Beck, M. S. and M. C. Ratto (2013), "Economic Voting in Latin America: A General Model", *Electoral Studies 32* (3), pp. 489-493.

Loayza, N. V., R. Ranciere, L. Servén, and J. Ventura, (2007), "Macroeconomic Volatility and Welfare in Developing Countries: An Introduction", *The World Bank Economic Review 21* (3), pp. 343-357.

Lora, E. and M. Olivera, (2004), "What Makes Reforms Likely: Political Economy Determinants of Reforms in Latin America", *Journal of Applied Economics 7* (1), pp. 99-135.

Lora, E., M. Olivera, S. Galiani, and E. D. Bo (2005), "The Electoral Consequences of the Washington Consensus [with comments]", *Economia 5* (2), pp. 1-61.

Meseguer, C., (2006), "Learning and Economic Policy Choices", *European Journal of Political Economy 22* (1), pp. 156-178.

Nsouli, S. M., N. Funke, and M. Rached, (2002), *The Speed of Adjustment and the Sequencing of Economic Reforms: Issues and Guidelines for Policymakers*. International Monetary Fund.

Prati, A., M. G. Onorato, and C. Papageorgiou, (2013), "Which Reforms Work and Under What Institutional Environment? Evidence from a New Data Set on Structural Reforms", *Review of Economics and Statistics 95* (3), pp. 946-968.

Quinn, D., (1997), "The Correlates of Change in International Financial Regulation", *American Political Science Review 91* (03), pp. 531-551.

Quinn, D. P. and A. M. Toyoda, (2007), "Ideology and Voter Preferences as Determinants of Financial Globalization", *American Journal of Political Science 51* (2), pp. 344-363.

Quinn, D. P. and A. M. Toyoda, (2008), "Does Capital-Account Liberalization Lead to Growth?", *Review of Financial Studies 21* (3), pp. 1403-1449.

Rajan, R. G. and A. Subramanian, (2005), "What Undermines Aid's Impact on Growth? *Technical Report*, National Bureau of Economic Research.

Rivers, D. and Q. H. Vuong, (1988), "Limited Information Estimators and Exogeneity Tests for Simultaneous Probit Models", *Journal of Econometrics 39* (3), pp. 347-366.

Spilimbergo, A., A. Prati, and J. D. Ostry, (2009), "Structural Reforms and Economic Performance in Advanced and Developing Countries", *Technical Report*, International Monetary Fund.

Teorell, J., N. Charron, M. Samanni, S. Holmberg, and B. Rothstein, (2011). *The Quality of Government Datasets*, Version 6apr11. The University of Gothenburg: The Quality of Government Institute.

Tressel, T. and E. Detragiache, (2008), "Do Fnancial-sector Reforms Lead to Financial Development? Evidence from a new dataset", *IMF Working Papers*, 1-42.

Tressel, T., M. Schindler, and L. E. Christiansen, (2009), "Growth and Structural Reforms: A New Assessment", *IMF Working Papers*, 1-52.

World Bank, (2011), *World Development Indicators 2011*. World Bank Publications.

Wooldridge, J. M., (2010), *Econometric Analysis of Cross-section and Panel Data*. MIT Press.

A. Appendix: Description of variables

A.1 Appendix: Description of reform indices

Current-Account Index: An indicator of how compliant a government is with its obligations under the IMF's Article VIII to free from government restriction the proceeds from international trade in goods and services. The index represents the sum of two sub-components, dealing with restrictions on trade in visibles, as well as in invisibles (financial and other services). It distinguishes between restrictions on residents (receipts for exports) and on non-residents (payments for imports). Although the index measures restrictions on the proceeds from transactions, rather than on the underlying transactions, many countries in practice use restrictions on trade proceeds as a type of trade restriction. The index is scored between zero and 8 in half-integer units, with 8 indicating full compliance. Source: Quinn (1997), Quinn and Toyoda (2007), and Quinn and Toyoda (2008).

Trade Index: Average tariff rates, with missing values extrapolated using implicit weighted tariff rates. The index is normalized to be between zero and unity: zero means the tariff rates are 60% or higher, while unity means the tariff rates are zero. Source: Various sources, including the IMF, the World Bank, the WTO, the UN, and the academic literature (particularly Clemens and Williamson (2004)).

Agriculture Index: The index captures market interventions on behalf of the main agricultural export commodity in each country. As data limitations preclude coding separate dimensions of intervention, the index provides a summary measure of intervention. Each country-year pair is assigned one of four degrees of intervention: (i) maximum (public monopoly or monopsony in production, transportation, or marketing); (ii) high (administered prices); (iii) moderate (public ownership in relevant producers, concession requirements); and (iv) no intervention. Source: Based on legislation and other official documents of the IMF.

Product-Market Index: A simple average of the sub-indices for the electricity and telecom markets that have been constructed, in turn, from scores along three dimensions. For electricity, they capture: (i) the degree of unbundling of generation, transmission, and distribution; (ii) whether a regulator other than government has been established; and (iii) whether the wholesale market has been liberalized. For telecom, they capture: (i) the degree of competition in local services; (ii) whether a regulator other than government has been established; and (iii) the degree of liberalization of interconnection

charges. Indices are coded with values ranging from zero (not liberalized) to two (completely liberalized). Based on national legislation and other official documents.

Capital-Account Index: Qualitative indicators of restrictions on financial credits and personal capital transactions of residents and financial credits to nonresidents, as well as the use of multiple exchange rates. This index is coded from zero (fully repressed) to three (fully liberalized). Source: Abiad et al. (2009), which follows the methodology in Abiad and Mody (2005). The original sources are mostly various IMF reports and working papers, but also central bank websites, etc. Resident/nonresident-specific indices are based on Quinn (1997), and Quinn and Toyoda (2007).

Domestic-Finance Index: The index of domestic financial liberalization is an average of six sub-indices. Five of them relate to banking: (i) interest-rate controls, such as floors or ceilings; (ii) credit controls, such as directed credit and subsidized lending; (iii) competition restrictions, such as limits on branches and entry barriers in the banking sector, including licensing requirements or limits on foreign banks; (iv) the degree of state ownership; and (v) the quality of banking supervision and regulation, including the power or independence of bank supervisors, adoption of a Basel I capital-adequacy ratio, and a framework for bank inspections. The sixth sub-index refers to the regulation of securities markets, including policies to encourage the development of bond and equity markets, and to permit access to the domestic stock market by foreigners. The sub-indices are aggregated with equal weights. Each sub-index is coded from zero (fully repressed) to three (fully liberalized). Source: Abiad et al. (2009), which follows the methodology in Abiad and Mody (2005). The original sources are mostly various IMF reports and working papers, but also central bank websites, etc. Resident/nonresident-specific indices are based on Quinn (1997), and Quinn and Toyoda (2007).