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The Political Costs of Reforms: Fear or Reality?

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The Political Costs of Reforms: Fear or Reality?[1]

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[1]This Note is based on joint work with Alberto Alesina and Dennis P. Quinn. Aleksandra Zdzienicka from the Fiscal Affairs Department contributed to the Box on Fiscal Consolidation and Electoral Outcomes.

CONTENTS

ELECTION DATA

- The electoral dataset contains information on each election taken place in the countries covered in the structural reform database, from 1960 onward. The most relevant information contained are: (i) the election date; (ii) the name of the incumbent leader (prime minister or president) and his/her party affiliation; (iii) the name of the new leader and party affiliation; (iv) the date in which the incumbent leader took office; (v) the vote share of the (coalition of) party/ies supporting the incumbent at the current, last and second-last elections. Additional information includes the types of political systems (presidential vs. parliamentarian), the electoral system (majoritarian vs. proportional), the number of parties in the coalition and the ideology of the government (right, center and left).

- The analysis is then restricted to cover an unbalanced sample of democratic elections from 1973 (or the first year in which the country is characterized as a democratic regime) to 2014 for 66 countries (Table A1.1). The identification of democratic regimes is based on the POLITY2 score—a measure of regime characteristics ranging from -10 (strongly autocratic) to 10 (strongly democratic) published by Marshall el al. (2017). A country is defined to have a democratic regime if its POLITY2 score is greater than or equal to 1. Overall, the dataset contains information on 495 elections. The variables coded for each election are listed below.

- **Election Date**. Dates for elections are taken from Bormann and Golder (2013) and the official records released by each country's electoral authority. The list of electoral authorities and their websites are reported in Table A1.2. The identification of democratic regimes is based on the POLITY2 score—a measure of regime characteristics ranging from -10 (strongly autocratic) to 10 (strongly democratic) published by Marshall el al. (2017).

- **Tenure and Party Association of Leaders**. The start and end dates in office, as well as the party affiliation, for the head of government in each country are taken from the Database on World Political Leaders produced by Roberto Ortiz de Zárate (2019). The person acting as head of the government (parliamentary systems) or president (presidential systems) preceding the election is recorded as the incumbent. The party to which the incumbent is affiliated is recorded as the incumbent´s party. The evolution of political parties is traced closely, in order to take into accounts changes of party names, mergers and separations. This allows to accurately calculate the length of the tenure of the leaders in office as well as that of the parties in office.

- **Political Regime.** Legislative and presidential elections are selected based on the political system of the country as reported in Database of Political Institutions (DPI) by Cruz et al. (2018). 300 legislative and 195 presidential elections are included in the database (See Table A1.3 for descriptive statics on the number of elections).

- **Vote Share**. A variable recording the vote share of the incumbent´s party is constructed. The main sources are the official records released by each country's electoral authority. To ensure accuracy, we complement and cross-check this information with the vote shares reported in the Global Elections Database (Brancati, 2018) and the Adam Carr's Election Archive (2019). In addition to the vote share for individual parties, we also compute the vote share of the coalition of governing parties.[2] In the case that party coalition ran on the same ticket—that is, no separate vote data for each party—the incumbent party vote share is recorded as missing, while coalition vote shares data are recorded for the incumbent. For the party composition of governments, we use Nordsieck (2019), *Politica* website as well as other online resources (Table A1.4).[3]

- **Reelection Variables.** Adapting the methodology of Brender and Drazen (2008), two binary reelection variables (*narrow* and *broad*) are constructed, to indicate whether the incumbent or his/her party is successfully reelected in the elections.

The criteria used for the ***narrow*** variable are the following:

- Narrow takes the value 1 if the incumbent leader is declared by the electoral authority as the winner of the election.
- Narrow takes the value 0 if the incumbent loses the election.
- Narrow is reported as missing if the incumbent leader has not been in office for 1 year.
- Narrow is recorded as missing if the incumbent does not run for reelection, for example when there is a constitutional limit on the terms of the office, or when the incumbent is a leader of a caretaker government, or the leader passed away in office. We checked term limit for leaders using constitutions of each country collected by World Constitutions Illustrated, a database maintained by HeinOnline.[4]

The criteria used for the ***broad*** variable are the following:

- Broad takes the value 1 if the incumbent leader is declared by the electoral authority as the winner of the election.
- Broad takes the value 0 if the incumbent loses the election.
- Broad is reported as missing if the incumbent leader has not been in office for 1 year.
- Broad is recorded as missing if the incumbent is leading an interim or caretaker government.
- Broad takes the value 1 if the incumbent leader does not run for reelection (for example due to term limit or death in office) but the ruling leader’s party still wins the election; 0 if the party loses in the election.

- **Explanatory variables.** The main explanatory variables used in the analysis are: (i) the reform in the election year, and (ii) the reform in the rest of the term. While the reform in the election year is common to the reelect and change in vote share analysis, the reform in the rest of the term can differ between the two different dependent variables. This is because in parliamentary

[2] In some cases, the incumbent´s party was in a coalition government with other parties.

[3] Politica website: http://www.kolumbus.fi/taglarsson/dokumentit/governm2.htm

[4] https://home.heinonline.org/content/World-Constitutions-Illustrated-Contemporary--Historical-Documents-and-Resources/

systems, the leader term can be different from the party term, as several different leaders might hold office within the same legislature.

- To construct the reform in the election year, we need to define the election year. When elections take place in the first three months of the year we code reforms as having taken place in the year before. This is so since governments do not normally implement major reforms in the period immediately preceding an election and because our reform variables are at the yearly frequency. Similarly, if the start of the term takes place in the last 3 months of the year, we use the following year as the year of the start of the term. To construct the reform in the rest of the term, we need to define the length (in years) of both the leader and party term. To do so, we proceed in the following way. First (only for reelect variable), when the same leader governs for two or more consecutive terms, we use the election year rather than the official term start year as the year of the start of the second and following terms. Second (only for vote share variable), we use the election year as the year of the start of the term. When there is a transition to democracy which is not followed by new elections in the year of the transition or in the following one, we use the date of the transition as the year of the start of the term. To define a transition, we use the *regtrans* variable from the POLITY2 project and select the country-year observations in which this takes value 2 or 3. Third, we construct the length of term variable as the distance between the term start and end years and cap it to 5 years.

- We then construct the reform in the election year by taking the first difference of the reform variable in the election year. Consider a term that lasted *x* years and define the election year as *t*, the reform in the rest of the term is constructed by taking the difference of the reform variable between year *t-1* and year *t-x*. To make the two explanatory variables comparable, we divide the reform in the rest of the term by the number of years in the rest of term—that is, *x-1*.

STRUCTURAL REFORM DATA

1. Structural reforms typically involve policy measures that reduce or remove impediments to the efficient allocation of resources. In many cases, the efficient allocation may involve a reduction in government intervention. But structural reforms may also encompass measures to address market failures not due to government intervention, or barriers to domestic and international competition. Following this broader view, the indicators of structural reform described below are constructed using disaggregated information capturing different components of effective regulation.

2. The database covers a balanced sample of 90 countries over the period 1973-2014 (Table A2.1). In terms of levels of economic development, the dataset covers 29 advanced economies, 43 emerging markets (EMs) and 21 low-income countries (LICs).[5] Of the 90 economies in the dataset 17 are from Asia and the Pacific, 29 are from Europe, 11 are from the Middle East and Central Asia, 14 are from Sub-Saharan Africa, and the rest of the 19 economies are from the Western Hemisphere (Table A2).

3. The indicators of regulation constructed cover both financial and real sector reforms.[6] The financial sector reforms are domestic finance, financial current account, and capital account. Real sector reforms cover the area of trade, product and labor market. All indicators are scaled to vary between zero and unity, with higher values representing greater liberalization. Differences in the values of each indicator across countries and over time provide information on the variation in the absolute degree of economic reform within each sector. However, indices are not strictly comparable across sectors, so a higher value of, say, the trade reform index than the domestic finance reform index does not imply that an economy is “more liberal” with respect to international trade than domestic finance (see Table A2.1 for the correlation of reform indicators).

A. Domestic Finance

4. The construction of the structural reform indicator for domestic finance follows the approach used in Abiad et al (2010). We consider six dimensions of domestic finance regulation[7]:

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[5] The country groups are based on the IMF WEO classification. The indicators of capital and current account are available for a sample of 126 countries from 1950 (or independence) to 2014.

[6] The dataset most comparable to ours is Ostry et al. (2009). Compared to Ostry et al. (2009), our dataset has a larger country-coverage; it covers the post crisis period; it includes additional areas of regulation (employment protection); and it provides more granular information regarding the regulatory stance of some sectors (e.g., it provides a decomposition of capital account openness in several sub-categories: FDI, portfolio investment, bonds and other debt securities, money market instrument and financial credits).

[7] Compared to Abiad et al. (2010), we do not include the dimension of capital account restriction which is covered in the *Capital Account* indicator.

- *Credit Controls*. It considers aspects of regulation related to the existence of reserve requirements, minimum amount of credit that is channeled to certain sectors, credit subsidies and ceilings.

- *Interest Rate Controls*. It captures government interventions in setting deposit and lending rates.

- *Bank Entry Barriers*. It quantifies the degree of domestic competition to foreign and domestic banks, as well as the range of financial activity that a bank can engage with.

- *Banking Supervision*. It examines whether a country has adopted a capital adequacy ratio based on the Basel standards, and whether there is an independent banking supervisory agency.

- *Privatization*. It captures the extent of state-owned banks in the domestic financial system.

- *Security Market Development*. It considers whether a country has taken measures to develop securities markets.

5. The questions used to examine the degree of financial regulation as well as the coding rules are those used in Abiad et al (2010). Along each dimension, a country is given a score on a graded scale from zero to three, with zero corresponding to the highest degree of repression and three indicating full liberalization. We aggregate the various sub-indicators using their sum, normalized between zero and one.

6. The identification of financial policy changes in the above six categories is carried through reading of available financial reports and relevant research articles produced by the IMF, such as Article IV Consultation, Financial System Stability Assessment (FSSA), Global Financial Stability Report (GFSR), IMF Selected Issues, and IMF Working Papers. Relying on IMF reports not only provides necessary country information on financial reforms, but it also implicitly provides a unified scoring standard, and consolidated evidence across countries and over time. This ensures cross-country and over time comparability.

B. Capital and Current Account

7. The construction of the structural reform indicator for capital and current account follows the approach used in Quinn (1997) and Quinn and Toyoda (2008).[8] We extend the database of Quinn and Toyoda (2008) to 126 countries from 1950 (or independence) to 2014. In addition, we also construct sub-indicators of the capital account for inward and outward Foreign Direct Investment, Portfolio Investment, Bond Market, Money Markets, and Finance and Lending

[8] This underlying project on the capital account extension and decomposition is joint work with Haillie Lee, Amy Pond, and A. Maria Toyoda.

Markets. The decomposition of the capital account indicator is available for 60 countries from 1980 to 2014.

8. These *de jure* indicators are based on the laws and regulations described in the International Monetary Fund's *Annual Report on Exchange Arrangements and Exchange Restrictions. AREAER* reports the laws governing the proceeds of transactions and the underlying transactions themselves. It contains information about policy based on six categories: payment for imports; receipts from exports; payment for invisibles; receipts from invisibles; capital flows by residents; and capital flows by non-residents. Since the 1980s, the text of the *AREAER* has contained enough information to distinguish further between and among components of the capital account.[9]

9. We consider restrictions on *exchange payments* (imports, invisibles, capital) and on *exchange receipts* (exports, invisibles, capital). In the development of new indicators, capital account transactions are broken down into five sub-categories: *foreign direct investment*, *portfolio investment, bonds and other debt securities, money market instruments, and financial credits*. For each category, resident and non-resident transactions are distinguished. Other components of the capital account are available but are not coded.[10]

C. Trade

10. The construction of the structural reform indicator for trade is based on trade tariff rate data at the product level. The main sources are the World Integrated Trade Solution (WITS) and World Development Indicators (WDI). Data in WITS and WDI are available from 1988-2014. Other data sources include: i) the World Trade Organization (WTO) for the period 1993-2014; ii) The General Agreement on Tariffs and Trade (GATT) for the period 1978 to 1987; and the Brussels Customs Union database (BTN) for the period 1966-1995.

11. We aggregate product-level tariff data by calculating simple and weighted averages, with weight given by the export share of each product. These averages are normalized between zero (closed to trade) and 1 (fully open to trade).

[9] A key concept in *AREAER* is the distinction between residents and nonresidents, which implies the direction of flows. An outward movement occurs when a resident either pays for goods or services from abroad or acquires an external capital asset in return for cash. Conversely, an inward flow occurs when a non-resident pays for goods, services, or capital assets domestically. Another important distinction is between capital account transactions, which are defined as international transfers of ownership of financial assets, and financial current account transactions, which are all other transactions

[10] We omit restrictions on real estate, personal capital transactions, and commercial credits because of the already expansive nature of this exercise.

D. Product Market

12. The structural reform indicator for product market considers liberalization in two network sectors: telecommunication and electricity. For each of these components four dimensions of regulation are considered.

Telecommunication

- *Competition*. It captures the market structure of the sector—that is, competitive versus, duopoly or monopoly.
- *Ownership*. It quantifies the extent of state-owned firms in the market.
- *Regulation*. It examines whether there is an independent regulatory agency.
- *Access*. It captures the degree of government intervention in the access to telecommunication.

Electricity

- *Unbundling*. It captures the degree of vertical integration in the market—that is, whether generation, transmission, and distribution are unbundled.
- *Ownership*. It quantifies the extent of state-owned firms in the market.
- *Regulation*. It examines whether there is an independent regulatory agency.
- *Wholesale*. It captures the degree of liberalization in the wholesale market.

13. Along each dimension, a country is given a score on a graded scale from zero to two, with zero corresponding to the highest degree of repression and two indicating full liberalization.

14. The identification of policy changes in the telecommunication market is facilitated by regulatory information from the International Telecommunication Union (ITU), a specialized agency of the United Nations for information and communication technologies (ICTs) that directly collects yearly data from member countries. [11] Supplementary documents include assessments and surveys from multinational institutions, such as the European Bank for Reconstruction and Development (EBRD) and the Organization for Economic Co-operation and Development (OECD), annual reports from countries' regulatory authority, and telecommunication-related laws promulgated by countries' legislative body.

[11] http://www.itu.int/net4/itu-d/icteye/Default.aspx

(continued)

15. The main sources for the construction of the electricity market indicator are the annual issues of *Electricity Regulation*, the website of the International Energy Agency (IEA) and country profiles from the Clean Energy Info Portal (reegle).[12] Additional sources include evaluations and reports from the EBRD, the OECD, the World Bank and the Council of European Energy Regulators (CEER), and annual reports from countries' regulatory authority.

16. The aggregate index of product market liberalization is computed by adding up all 8 sub-indices, and then normalizing the sum between 0 (fully restricted market) and 1 (fully liberalized market).

E. Labor Market

The labor market liberalization (LML) indicator provides a new measure of employment protection legislation (EPL) related to termination of full-time indefinite contracts for objective reasons, in a typical firm of 250 workers. [13] Three dimensions of EPL are considered:

- *Procedural requirements*. It includes provisions such as consultation with workers' representatives and third-party approval.
- *Firing costs*. It consists of minimum notice periods and severance payments.
- *Valid grounds for dismissal and redress measures (in case of unfair dismissal)*. Redress measures concern provisions such as the possibility a worker could be reinstated in employment or receive compensation following an unfair dismissal.

17. Each sub-index is constructed by taking the simple average of several indicators and it is normalized to range from 0 (highest regulation) to 1 (highest liberalization). In some cases, different regulations apply to: (i) individual and collective objective reason dismissals, and (ii) white- and blue-collar workers. Therefore, each of the three sub-indexes is first constructed for each combination of worker collar and dismissal situation.[14] This gives a total of 4 indicators per

[12] reegle is an information gateway maintained by the Renewable Energy and Energy Efficiency Partnership (REEEP) and the Renewable Energy Policy Network for the 21st Century (REN21). Link to the website is: http://www.reegle.info/about

[13] The choice of the firm size follows from previous work by Botero *et al.* (2004).

[14] A worker is defined as blue (white) collar if she performs mostly manual (office) tasks. Botero *et al.* (2004) instead focus only on blue collar workers. Concerning the different dismissal situations, Botero *et al.* (2004) consider both objective reason and no reason dismissals. Additionally, OECD (2013) also takes into account dismissals for reasons related to the person of the worker. Here, information on EPL applying to professional incapacity, gross misconduct, and no reason dismissals is used in a robustness check. See Section II for more details.

(continued)

sub-index. The 4 sub-indexes are then aggregated over collar and dismissal types.[15] We aggregate the various sub-indicators using their sum, normalized between zero and 1.

18. The identification of policy changes is based on statutory legislation setting minimum requirements. The main sources of legislations are the EPLex (ILO, 2017a) and NATLEX (ILO, 2017b) databases. These are supplemented by government gazettes and parliamentary records. To reconstruct the history of EPL in each country, the most recent laws are used as a reference point. Next, three distinct approaches are followed to backtrack older legislation. First, it is checked whether the most recent laws specify which older laws they repealed or amended upon their entry into force. Second, the coverage of older legislation provided by NATLEX is checked. Third, country-specific databases and other documents, such as for instance the collection of government gazette and parliamentary records, are used as additional sources. Finally, the information gathered in these different ways is cross-checked with each other.

[15] While simple averages are used to aggregate among collar types, the aggregation among individual and collective dismissals follows the formula described in Appendix D. This aggregation scheme reflects the fact that the definition of a collective dismissal does change both over countries and across time.

EMPIRICAL METHODOLOGY AND ROBUSTNESS CHECKS

19. This annex describes the empirical methodology used in the paper to examine the macroeconomic, distributional and electoral effects of reforms. It also presents additional results on the electoral effects of reforms, discussed but not presented in the main paper, and robustness checks addressing endogeneity issues.

20. In most exercises, the main explanatory variable is the ´overall´ reform variable. This is the simple average of the change of the six different structural reform indicators. In selected exercises, the explanatory variable only accounts for one or more structural reform indicators.

A. Macroeconomic and distributional effects of reforms

21. Two econometric specifications are used to estimate the macroeconomic and distributional impact of reforms. The first establishes whether reforms have significant effects on output and inequality. The second assesses whether these effects vary with overall business conditions prevailing at the time of the reform (low-growth versus high-growth regime). The statistical method follows the approach proposed by Jordà (2005) to estimate impulse-response functions. This approach has been advocated by Auerbach and Gorodnichenko (2013) and Ramey and Zubairy (2018) among others, as a flexible alternative that does not impose the dynamic restrictions embedded in vector autoregression (autoregressive distributed-lag) specifications and is particularly suited to estimating nonlinearities in the dynamic response.

22. The first regression specification is estimated as follows:

$$y_{t+k,i} - y_{t-1,i} = \alpha_i + \gamma_t + \beta_k R_{i,t} + \theta X_{i,t} + \varepsilon_{i,t} \qquad \text{(A3.1)}$$

in which y is the log of output (or Gini); α_i are country fixed effects, included to take account for differences in countries' average growth rates (inequality); γ_t are time fixed effects, included to take account for global shocks such as shifts in oil prices or the global business cycle; R denotes the reform; and X is a set a of control variables including past economic growth, past reforms, and recessions dummies.

23. In the second specification, the response is allowed to vary with the state of the economy. The second regression specification is estimated as follows:

$$y_{i,t+k} - y_{i,t-1} = \alpha_i + \gamma_t + \beta_k^L F(z_{i,t}) R_{i,t} + \beta_k^H (1 - F(z_{i,t})) R_{i,t} + \theta X_{i,t} + \varepsilon_{i,t} \qquad \text{(A3.2)}$$

with $F(z_{it}) = exp^{-\gamma z_{it}}/(exp^{-\gamma z_{it}}), \quad \gamma > 0$

in which z is an indicator of the state of the economy normalized to have zero mean and unit variance. The indicator of the state of the economy considered in the analysis is the GDP growth.[16]

24. Equations (A3.1 and A3.2) are estimated for each k=0,..,5. Impulse response functions are computed using the estimated coefficients β_k, and the confidence bands associated with the estimated impulse-response functions are obtained using the estimated standard errors of the coefficients β_k, based on clustered robust standard errors.

25. The output series (real GDP) used in the analysis comes from the IMF WEO. Data for Gini are from the Standardized World Income Inequality Database (SWIID), which combines information from the United Nations World Income Database (UNWIDER) and the Luxembourg Income Study (LIS).

26. The results suggest that reforms tend to increase both output and inequality in the medium term (Figure A3.1). These effects tend to be larger for financial sector (Capital and Financial Current, and Domestic Finance) reforms than real sector reforms (Trade, Product and Labor markets).

B. Electoral effects of reforms

Baseline specification

27. To test various political economy explanations of the effects of reforms on elections, the effect of reforms on the change in the incumbent coalition (party) vote share is estimated. Following the political business cycle literature (e.g., Powell and Whitten, 1993; Brender and Drazen, 2008), the benchmark specification includes the following set of control variables: (i) the average GDP growth during the electoral term; (ii) a developed country dummy (1 = continuous membership in the OECD since 1963, or 0 otherwise); (iii) a dummy variable for new democracies (1 = for the first four elections after a year with a negative Polity score on the -10 to 10 scale, or 0 otherwise); (iv) a dummy variable for a majoritarian political system (1 = countries with an electoral system that awards seats in "winner-take-all" geographically based districts according to the Database of Political Institutions, and 0 otherwise)[17]; (v) the initial level of regulation—to account for the fact that the structural reform indicators are bounded between 0 and 1; (vi) the initial vote share to control for the political strength of the coalition (party) at the beginning of the term.

28. Specifically, the following specification is estimated:

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[16] Following Auerbach and Gorodnichenko (2013) we use $\gamma = 1.5$ for the analysis of recessions and expansions.

[17] See also Cruz, Keefer, and Scartascini (2018).

$$\Delta Incumbent\ Party\ Vote\ Share_{i,t} = \beta_0 + \beta_1 Reform_{ey_{i,t-1}} + \beta_2 Reform_{term_{i,t-1}} + \beta_3 Growth_{ey_{i,t-1}} + \beta_4 Growth_{term_{i,t-1}} + \beta_4 Developed\ Country_i + \beta_5 NewDemocracy_{i,t} + \beta_6 Majoritarian\ system_{i,t} + \beta_7 Initial\ Regulation_{i,t-x} + \beta_8 Incumbent\ Party\ Vote\ Share_{i,t-1} + \varepsilon_{i,t}, \quad \text{(A3.3)}$$

where i=(country), t=(election year). The specification explicitly distinguishes between reforms implemented in the year prior to elections (*Reform_ey*$_{i,t-1}$) and reforms undertaken in the rest of the incumbent's term (*Reform_term_rest*$_{i,t-x}$). Equation (A3.3) is estimated using a panel pooled OLS estimator. Following Brender and Drazen (2008), fixed effects are not included in the baseline specification. The results are robust and not statistically different when country-fixed effects and country-specific time trends are included (Table A3.1, column II and III). The inclusion of these variables is key to control for unobserved non-economic country-specific factors (such as social and religious preferences, and subjective perception of happiness and well-being) that may affect electoral outcomes. The results are also robust when changes in the budget deficit and inflation are included, to account for the fact that reforms are often implemented as a part of an economic package aimed at fostering economic stability (Table A3.1, column III). Finally, to test whether the speed of implantation matters for the electoral effects of reforms, equation (A3.3) has been expanded to include squared terms for reform in election years and in the rest of the terms. The results suggest that the speed of implementation does not have a salient impact on electoral outcomes (the coefficients on the squared terms are negative but not statistically significant).

29. We further distinguish between financial sector (Capital and Financial Current, and Domestic Finance) and real sector reforms (Trade, Product and Labor markets). The results suggest that, on average, the electoral costs of reforms are mostly concentrated to financial sector reforms (Table A3.2). This is confirmed when looking at each single reform (Table A3.3).

30. The analysis covers an unbalanced sample of democratic elections from 1973 (or the first year in which the country is characterized as a democratic regime) to 2014 for 66 countries (Table A1.1). The identification of democratic regimes is based on the POLITY2 score—a measure of regime characteristics ranging from -10 (strongly autocratic) to 10 (strongly democratic) published by Marshall el al. (2017). A country is defined to have a democratic regime if its POLITY2 score is greater than or equal to 1. Overall, the dataset contains information on 495 elections. The variables coded for each election are listed below.

Alternative dependent variable

31. The analysis is extended to examine whether a reforming (or reversing) incumbent or her party remains in office after reforms are implemented, with 1 denoting reelection and 0 otherwise. Specifically, the following specification is estimated:

$$\Pr(Incumbent\ \ Reelction_{i,t} = 1) = \beta_0 + \beta_1 Reform_{ey_{i,t-1}} + \beta_2 Reform_{term_{i,t-1}} + \beta_3 Growth_{ey_{i,t-1}} + \beta_4 Growth_{term_{i,t-1}} + \beta_4 Developed\ Country_i + \beta_5 NewDemocracy_{i,t} + \beta_6 Majoritarian\ system_{i,t} + \beta_7 Initial\ Regulation_{i,t-x} + \beta_8 Incumbent\ Party\ Vote\ Share_{i,t-1} + \ \varepsilon_{i,t} \qquad \text{(A3.4)}$$

where i=(country), t=(election year), *Incumbent Reelection* is a dummy variable coded 1 if the incumbent himself or herself (narrow sample) or the incumbent or her party (broad sample) retains political power in a highly democratic country.

32. Equation (A3.4) is estimated using a Probit estimator. Following Brender and Drazen (2008), and consistently with the baseline, the specification does not include unit fixed effects since many countries where the incumbent person or party always loses or always wins would be omitted otherwise. The results of the analysis confirm that reforms are politically costly (Table A3.2).

Endogeneity issues

33. A potential source of concern is the endogeneity in the timing of election. In some countries, national elections may be called early by national leaders or legislative body. In particular, it could be the case that the timing of election is correlated with economic conditions, causing a bias in our estimates. For example, in the case of Japan, Ito (1990) finds that elections are typically held during periods of economic expansion, suggesting opportunistic behavior of the incumbent politicians.

34. To address this issue, the analysis is replicated to focus only on exogenous elections—that is, those for which the head of the government does not have the ability to endogenously dissolve a parliament and call new elections.[18] The results suggest that, on average, reforms are associated with electoral costs, with the effect being larger than estimated in the baseline (Table A3.3, column I)

35. Another source of concern is reverse causality. Perhaps weak governments, knowing their vulnerability, do not implement reforms, but then, precisely because they are weak, they lose at polls, and the reverse holds for strong government. Another possibility is that elected politicians anticipate the electoral consequences of their policy choices, and will select policies accordingly, choosing not to implement reforms because of the fear of not being re-elected. All these circumstances would lead to not finding significant costs of reforms.

36. To address this issue, we use an instrumental variable (IV) approach. Our strategy relies on previous theoretical and empirical evidence that economic reforms are driven by democratic transitions (see Milner and Mukerhjee, 2009 and Giuliano et al., 2013 for a review). Since the

[18] In the data, 162 out of 377 elections are exogenously specified by electoral law and cannot be dissolved before the expiry of the government's full term.

relation between reform and democracy can go both ways, we use as an instrument the weighted average of the change in the democracy indicator in trading partners over the last two years, where the weights are determined by the strength of trade linkages with other countries.

37. The first and second stage estimates for the effect of reform on vote share suggest that this instrument is "strong" and statistically significant. In particular, The Kleibergen–Paap rk Wald F statistic—which is equivalent to the F-effective statistics for non-homoskedastic error in case of one endogenous variable and one instrument (Andrews, Stock, and Su, 2018)—is higher than the associated Stock-Yogo critical values. In addition, the instrument can be plausibly considered to be exogenous, since changes in the democratic institutions of trading-partner countries are unlikely to be correlated with the error term of Equation (A3.3). More importantly, the effect of reforms on vote shares obtained with the IV approach is larger than the one obtained with OLS, confirming that politicians may decide to not implement reform because they are aware of potential political costs—which in the framework implies a downward bias of OLS estimates (Table A3.3, column II).

Role of economic conditions

38. Economic conditions when reforms are implemented may impact electoral outcomes. When voters are unable to disentangle the effect of reforms from other forces driving economic conditions, they may attribute good (poor) economic performance to the effect of reforms. In these circumstances, governments enacting reforms in periods when the economy is flourishing may be rewarded, while governments implementing reforms in periods of recessions may be punished. Second, the macroeconomic and distributional consequences of reforms may depend on prevailing economic conditions, as shown in Figure 4 (Panel B and C). While reforms implemented in periods of economic expansion are associated with significant macroeconomic benefit and limited distributional cost, reforms tend to be contractionary and distributionally adverse when implemented in periods when the economy is already weak (see Duval and Furceri, 2018; Ostry, Berg, and Kothari, 2018; and the forthcoming IMF WEO Chapter 3). In the latter circumstances, reforms may lead to a limited increase in the overall "pie" and significant costs for a large share of the population, and therefore to electoral costs.

39. To empirically examine this issue, we follow the approach of Auerbach and Gorodnichenko (2013) and Ramey and Zubairy (2018), and we allow the effect of reform on political outcomes to smoothly vary during recessions and expansions. Specifically, we estimate the following equation:

$$\begin{aligned}&\Delta Incumbent\ Party\ Vote\ Share_{i,t} = \beta_0 + F(z_{i,t})\left[\beta_1^L\ Reform_{ey_{i,t-1}} + \beta_2^L\ Reform_{term_{i,t-1}}\right] + \\ &\left(1 - F(z_{i,t})\right)\left[\beta_1^H\ Reform_{ey_{i,t-1}} + \beta_2^H\ (1-D) Reform_{term_{i,t-1}}\right] + \beta_3 Growth_{ey_{i,t-1}} + \beta_4 Growth_{term_{i,t-1}} + \\ &\beta_4 Developed\ Country_i + \beta_5 NewDemocracy_{i,t} + \beta_6 Majoritarian\ system_{i,t} + \\ &\beta_7 Initial\ Regulation_{i,t-x} + \beta_8 Incumbent\ Party\ Vote\ Share_{i,t-1} + \varepsilon_{i,t} \qquad \text{(A3.5)}\end{aligned}$$

where *i=(country), t=(election year)*, z_t and $F(z_t)$ are constructed as described in Equation (A3.2).

Reforms in countries pursuing IMF programs

40. To test whether reforms during IMF programs has a differential effect on electoral outcomes, equation (3.3) is extended as follows:

$$\Delta Incumbent\ Party\ Vote\ Share_{i,t} = \beta_0 + \beta_1^A\ D * Reform_{ey_{i,t-1}} + \beta_2^A\ D * Reform_{term_{i,t-1}} + \beta_1^C\ D * Reform_{ey_{i,t-1}} + \beta_2^C\ (1-D) * Reform_{term_{i,t-1}} + \beta_3 Growth_{ey_{i,t-1}} + \beta_4 Growth_{term_{i,t-1}} + \beta_4 Developed\ Country_i + \beta_5 NewDemocracy_{i,t} + \beta_6 Majoritarian\ system_{i,t} + \beta_7 Initial\ Regulation_{i,t-x} + \beta_8 Incumbent\ Party\ Vote\ Share_{i,t-1} + \varepsilon_{i,t} \quad \text{(A3.6)}$$

where *i=(country)*, *t=(election year)*, *D* is dummy variable that takes value 1 when reform is undertaken under an IMF-supported program, and zero otherwise. The results suggest that the estimated effects of reforms undertaken by a government while under an IMF-supported program are not statistically different from those implemented in other circumstances. In addition, there is no evidence that being in an IMF-supported program *per se* comes with an electoral cost (Table A3.4).

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TABLES

Table A1.1. Sample

Country Name	Years Covered	No. of Elections	Legislative Election	Presidential Election
Albania	1996-2013	6	x	
Argentina	1989-2011	6		x
Australia	1974-2013	16	x	
Austria	1975-2013	12	x	
Belgium	1974-2010	12	x	
Bolivia	1985-2009	7		x
Brazil	1989-2010	6		x
Bulgaria	2001-2009	3	x	
Canada	1974-2011	12	x	
Chile	1993-2013	5		x
Colombia	1974-2010	10		x
Costa Rica	1974-2010	10		x
Czech Republic	1996-2006	3	x	
Denmark	1975-2011	14	x	
Dominican Rep.	1978-2012	10		x
Ecuador	1984-2013	9		x
El Salvador	1989-2009	5		x
Estonia	1992-2011	6	x	
Finland	1979-2011	9	x	
France	1974-2012	7		x
Georgia	1995-2013	3		x
Germany	1976-2013	11	x	
Ghana	2000-2012	4		x
Greece	1977-2009	10	x	
Guatemala	1990-2011	6		x
Hungary	1994-2006	4	x	
India	1977-2009	10	x	
Indonesia	2004-2009	2		x
Ireland	1977-2011	11	x	
Israel	1981-2013	11	x	
Italy	1976-2013	9	x	
Jamaica	1976-2011	9	x	
Japan	1976-2012	13	x	
Kenya	2002-2013	3		x
Kyrgyzstan	2009-2011	2		x
Latvia	1993-2011	7	x	
Lithuania	1997-2009	3		x

Madagascar	1996-2006	3		x
Malaysia	1974-2013	10	x	
Mexico	1988-2012	5		x
Mozambique	1994-2009	4		x
Nepal	1991-2008	4	x	
Netherlands	1977-2012	12	x	
New Zealand	1975-2011	13	x	
Nicaragua	1990-2011	5		x
Nigeria	1983-2011	4		x
Norway	1977-2013	10	x	
Paraguay	1993-2013	5		x
Peru	1985-2011	6		x
Philippines	1992-2010	4		x
Poland	1995-2010	4		x
Portugal	1980-2011	11	x	
Romania	1996-2012	4	x	
Senegal	2007-2012	2		x
South Africa	1987-2009	6		x
South Korea	1992-2012	5		x
Spain	1979-2011	10	x	
Sri Lanka	1982-2010	6		x
Sweden	1976-2010	11	x	
Thailand	1995-2011	5	x	
Turkey	1977-2011	8	x	
Ukraine	1994-2010	3		x
United Kingdom	1974-2010	10	x	
United States	1976-2012	10		x
Uruguay	1989-2009	5		x
Venezuela	1978-2006	7		x

Table A1.2 Electoral Authorities

Country	Name	Source
Albania	Central Election Commission	http://cec.org.al
Argentina	National Electoral Directorate	https://www.argentina.gob.ar/interior/direccionnacionalelectoral
Australia	Australian Electoral Commission	https://www.aec.gov.au/
Austria	Federal Electoral Board	https://www.bmi.gv.at/412_english/
Belgium	Federal Public Service Interior	https://elections.fgov.be/
Bolivia	Plurinational Electoral Body	https://www.oep.org.bo/
Brazil	Supreme Electoral Tribunal	http://www.tse.jus.br/
Bulgaria	Central Electoral Commission	https://www.cik.bg/
Canada	Elections Canada	https://www.elections.ca/home.aspx
Chile	Electoral Service	https://www.servel.cl/
Colombia	The National Registry of Civil Status	https://wsr.registraduria.gov.co/
Costa Rica	Supreme Electoral Tribunal	http://www.tse.go.cr/
Czech Republic	Czech Statistical Office	https://www.volby.cz/
Denmark	Ministry for Economic Affairs and the Interior	https://valg.oim.dk/
Dominican Rep.	Central Electoral Board	https://jce.gob.do/
Ecuador	National Electoral Council	http://cne.gob.ec/es/
El Salvador	Supreme Electoral Tribunal	https://www.tse.gob.sv/
Estonia	National Electoral Committee	https://www.valimised.ee/en
Finland	Ministry of Justice - Election Unit	https://www.vaalitutkimus.fi/en/eduskuntavaalien_tulokset.html
France	Ministry of the Interior, Elections Office	https://www.interieur.gouv.fr/Elections
Georgia	Central Election Commission	http://cesko.ge/eng/
Germany	Federal Returning Officer	https://www.bundeswahlleiter.de/
Ghana	Electoral Commission Ghana	http://www.ec.gov.gh
Greece	Ministry of the Interior	https://www.ypes.gr/en/Elections/
Guatemala	Supreme Electoral Tribunal	http://www.tse.org.gt/index.php
Hungary	National Election Office	https://www.valasztas.hu/web/national-election-office
India	Election Commission	https://eci.gov.in/
Indonesia	General Elections Commission	https://infopemilu.kpu.go.id/
Ireland	Parliament	https://www.oireachtas.ie/en/elections/
Israel	Central Elections Committee	https://main.knesset.gov.il/en/mk/pages/elections.aspx
Italy	Department for Internal and Territorial Affairs	https://dait.interno.gov.it/elezioni
Jamaica	Electoral Commission of Jamaica	http://ecj.com.jm/
Japan	Ministry of Internal Affairs and Communications	http://www.soumu.go.jp/senkyo/

Kenya	Independent Electoral and Boundaries Commission	https://www.iebc.or.ke
Kyrgyzstan	Central Commission for Elections and Referenda	http://kg.akipress.org/news:630478
Latvia	Central Election Commission	https://www.cvk.lv/lv
Lithuania	Central Electoral Commission	https://www.vrk.lt/pagal-rusi
Madagascar	Independent National Electoral Commission	https://www.ceni-madagascar.mg/
Malaysia	Election Commission	http://www.spr.gov.my/
Mexico	National Electoral Institute	https://www.ine.mx/
Mozambique	National Electoral Commission	http://www.stae.org.mz/
Nepal	Election Commission	http://election.gov.np/election/np/
Netherlands	Electoral Council	https://www.verkiezingsuitslagen.nl/
New Zealand	Electoral Commission	https://www.elections.org.nz/
Nicaragua	Supreme Electoral Council	http://www.cse.gob.ni/ (various archieves)
Nigeria	National Electoral Commission	http://www.inecnigeria.org
Norway	Directorate of Elections	https://valg.no/en
Paraguay	Superior Tribunal of Electoral Justice	https://www.tsje.gov.py/
Peru	National Office of Electoral Processes	http://www.onpe.gob.pe/
Philippines	Commission on Elections	https://www.comelec.gov.ph/
Poland	National Election Commission	http://pkw.gov.pl/
Portugal	National Election Commission	http://www.cne.pt/
Romania	Permanent Electoral Authority	http://www.roaep.ro/
Senegal	National Electoral Commission	https://www.cena.sn/site/index.html
South Africa	Electoral Commision	https://www.elections.org.za/ieconline/home
South Korea	National Election Commission	http://www.nec.go.kr/portal/main.do
Spain	Central Electoral Board	http://www.juntaelectoralcentral.es/cs/jec/inicio
Sri Lanka	Election Commission	http://elections.gov.lk/web/si/
Sweden	Election Authority	https://www.val.se/
Thailand	Election Commission	https://www.ect.go.th/ect_th/
Turkey	Supreme Electoral Council	http://www.ysk.gov.tr/
Ukraine	Central Election Commission	http://www.cvk.gov.ua/
United Kingdom	Electoral Commission	https://www.electoralcommission.org.uk/
United States	Election Assistance Commission	https://www.eac.gov/
Uruguay	Electoral Court	https://www.corteelectoral.gub.uy/
Venezuela	National Electoral Board	http://www.cne.gob.ve/jne/index.php

Table A1.3. Number of elections

Presidential	Legislative	In Majoritarian systems	In Proportional systems	Total
195	300	51	444	495

Table A1.4. Data Sources

Source Name	Dataset Producer
Adam Carr's Election Archive	Adam Carr
African Elections Database	Albert C. Nunley
Cevipol Election Results	Université libre de Bruxelles
Database National Elections in Post-Communist Democracies	Daniel Bochsler
Database of Political Institutions	Scartascini, C., Cruz, C., & Keefer, P.
Democratic Electoral Systems	Bormann, N. & Golder, M.
Global Elections Database	Dawn Brancati
National Elections Across Democracy and Autocracy	Hyde, S. & Marinov, N.
PARLINE Database on National Parliaments	Inter-Parliamentary Union
Parties and Elections in Europe	Wolfram Nordsieck
Politica	http://www.kolumbus.fi/taglarsson/
Political Database of the Americas	Center for Latin American Studies (CLAS), Georgetown University
Polity IV project	Marshall, M., Gurr, T., & Jaggers, K.
Wikipedia	wikipedia.org
World Constitutions Illustrated	HeinOnline
World Political Leaders	Roberto Ortiz de Zárate

Table A2.1. Country Coverage

Advanced economies	Emerging markets		Low income countries
Australia	Albania	Namibia	Bangladesh
Austria	Algeria	Pakistan	Bolivia
Belgium	Argentina	Paraguay	Burkina Faso
Canada	Azerbaijan	Peru	Cameroon
Czech Republic	Belarus	Philippines	Côte d'Ivoire
Denmark	Botswana	Poland	Ethiopia
Estonia	Brazil	Romania	Ghana
Finland	Bulgaria	Russia	Kenya
France	Chile	South Africa	Kyrgyz Republic
Germany	China	Sri Lanka	Lesotho
Greece	Colombia	Swaziland	Madagascar
Hong Kong SAR	Costa Rica	Thailand	Malawi
Ireland	Dominican Republic	Tunisia	Mozambique
Israel	Ecuador	Turkey	Nepal
Italy	Egypt	Ukraine	Nicaragua
Japan	El Salvador	Uruguay	Nigeria
Korea	Georgia	Venezuela	Senegal
Latvia	Guatemala		Tanzania
Netherlands	Hungary		Uganda
New Zealand	India		Uzbekistan
Norway	Indonesia		Vietnam
Portugal	Jamaica		Zambia
Singapore	Jordan		Zimbabwe
Spain	Kazakhstan		
Sweden	Lithuania		
Switzerland	Malaysia		
United Kingdom	Mexico		
United States	Morocco		

Table A2.2. Correlation of reform indicators

	Domestic Finance	Capital Account	Fin. Current account	Trade	Product market	Labor market
Domestic Finance	1					
Capital account	0.62	1				
Fin. Current account	0.69	0.86	1			
Trade	0.66	0.69	0.53	1		
Product market	0.70	0.45	0.447	0.48	1	
Labor market	-0.09	0.12	0.05	-0.13	-0.09	1

Table A3.1. The Effect of Reforms on Re-election—Additional controls

	(I)	(II)	(III)	(IV)
Reform_ey	-2.820***	-3.230**	-3.460**	-1.928*
	(0.947)	(1.295)	(1.327)	(0.985)
Reform_term	-0.672	-0.656	0.354	-0.941
	(1.040)	(1.170)	(1.398)	(1.708)
Initial level regulation	-6.798	-0.981	26.900	28.860
	(6.009)	(10.376)	(35.584)	(36.022)
Growth_ey	0.512**	0.362	0.260	-0.035
	(0.206)	(0.265)	(0.410)	(0.386)
Growth_term	0.425	0.699*	0.826*	0.633
	(0.323)	(0.398)	(0.486)	(0.462)
Advanced economy	3.474***			
	(1.245)			
New democracies	0.804	-0.036	0.380	0.191
	(1.109)	(2.187)	(3.950)	(4.042)
Majoritarian system	2.293**	4.376	10.865**	10.615**
	(0.923)	(4.164)	(4.585)	(4.472)
Lagged vote share	-0.146	-0.243**	-0.264*	-0.238*
	(0.093)	(0.103)	(0.137)	(0.128)
Budget				0.291
				(0.253)
Inflation				-0.007***
				(0.003)
Country fixed effects	No	Yes	Yes	Yes
Country-specific time trends	No	No	Yes	Yes
R^2	0.10	0.27	0.47	0.52
Observations	327	327	327	314

Note: Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

Table A3.2. The Effect of Reforms on Re-election—Finance vs. real

	(I)	(II)
	Finance	Real
Reform_ey	-7.346***	1.712
	(2.362)	(2.155)
Reform_term	0.018	-1.257
	(2.557)	(1.786)
Initial level regulation	-3.049	-0.706
	(4.923)	(6.225)
Growth_ey	0.287	0.467**
	(0.256)	(0.199)
Growth_term	0.673**	0.484
	(0.311)	(0.326)
Advanced economy	3.298***	3.189***
	(1.217)	(1.173)
New democracies	0.739	0.668
	(1.125)	(1.162)
Majoritarian system	1.536	2.264**
	(1.042)	(1.015)
Lagged vote share	-0.182**	-0.150
	(0.082)	(0.091)
R^2	0.11	0.09
Observations	363	327

Note: Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively. The instrument is the weighted average of change in democracy in trading partners over the last two years.

Table A3.3. The Effect of Reforms on Re-election—single reforms

	Financial			Real		
	(I)	(II)	(III)	(IV)	(V)	(VI)
	Domestic finance	Capital account	Fin.Current account	Trade	Product market	Labor market
Reform_ey	-2.545*	-6.574*	-5.210**	0.314	-0.012	2.247
	(1.369)	(3.496)	(2.105)	(0.635)	(1.397)	(5.240)
Reform_term	-0.553	1.417	-0.480	-0.215	0.089	2.981
	(1.510)	(2.456)	(2.044)	(0.699)	(0.943)	(3.850)
Initial level regulation	-2.315	-1.247	-2.252	2.019	-0.397	-5.426
	(3.527)	(4.970)	(4.361)	(3.628)	(3.020)	(5.564)
Growth_ey	0.272	0.286	0.320	0.461**	0.278	0.328
	(0.258)	(0.257)	(0.260)	(0.201)	(0.250)	(0.203)
Growth_term	0.727**	0.676**	0.679**	0.472	0.725**	0.679**
	(0.309)	(0.317)	(0.315)	(0.326)	(0.322)	(0.298)
Advanced economy	3.275***	3.087**	3.164***	3.101**	3.026***	2.839**
	(1.160)	(1.217)	(1.173)	(1.249)	(1.023)	(1.067)
New democracies	0.714	0.648	0.792	0.761	0.708	0.476
	(1.152)	(1.148)	(1.090)	(1.155)	(1.133)	(1.132)
Majoritarian system	1.552	1.607	1.534	2.381**	1.564	1.671
	(1.074)	(1.019)	(1.005)	(1.020)	(1.035)	(1.079)
Lagged vote share	-0.182**	-0.185**	-0.188**	-0.151	-0.186**	-0.185**
	(0.083)	(0.082)	(0.083)	(0.093)	(0.082)	(0.079)
R^2	0.10	0.10	0.10	0.09	0.09	0.10
Observations	363	363	363	328	363	362

Note: Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

Table A3.4. The Effect of Reforms on Re-election—Incumbent re-election

	(I)	(II)
	Narrow	Broad
Reform_ey	-0.471**	-0.315**
	(0.214)	(0.148)
Reform_term	-0.137	-0.162
	(0.189)	(0.147)
Initial level regulation	-0.803	-0.784
	(1.221)	(0.975)
Growth_ey	-0.006	-0.003
	(0.032)	(0.026)
Growth_term	0.047*	0.070***
	(0.027)	(0.022)
Advanced economy	-0.12	0.146
	(0.214)	(0.161)
New democracies	-0.451**	-0.348**
	(0.223)	(0.166)
Majoritarian system	0.234	0.256
	(0.210)	(0.174)
(Pseudo) R^2	0.05	0.06
Observations	247	359

Note: Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively. The dependent variable (I*ncumbent Reelection*) is a dummy variable coded 1 if the incumbent himself or herself (narrow sample) or the incumbent or her party (broad sample) retains political power in a highly democratic country.

Table A3.5. The Effect of Reforms on Re-election—Endogeneity checks

	(I)	(II)
	Exogenous elections	IV
Reform_ey	-4.106***	-7.672***
	(0.999)	(1.584)
Reform_term	-0.615	-1.140
	(2.095)	(1.047)
Initial level regulation	-4.479	-16.611**
	(14.661)	(7.487)
Growth_ey	0.497*	0.586***
	(0.267)	(0.222)
Growth_term	1.195**	0.316
	(0.566)	(0.341)
Advanced economy	5.065	3.815***
	(2.999)	(1.281)
New democracies	1.688	0.87
	(2.249)	(1.039)
Majoritarian system	0.232	2.275***
	(2.368)	(0.856)
Lagged vote share	-0.016	-0.141
	(0.117)	(0.093)
Kleibergen-Paap rk Wald F statistic		25.92
Stock-Yogo 10% critical value		16.38
(Uncentered) R^2	0.15	0.23
Observations	128	327

Note: Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively. The instrument is the weighted average of change in democracy in trading partners over the last two years.

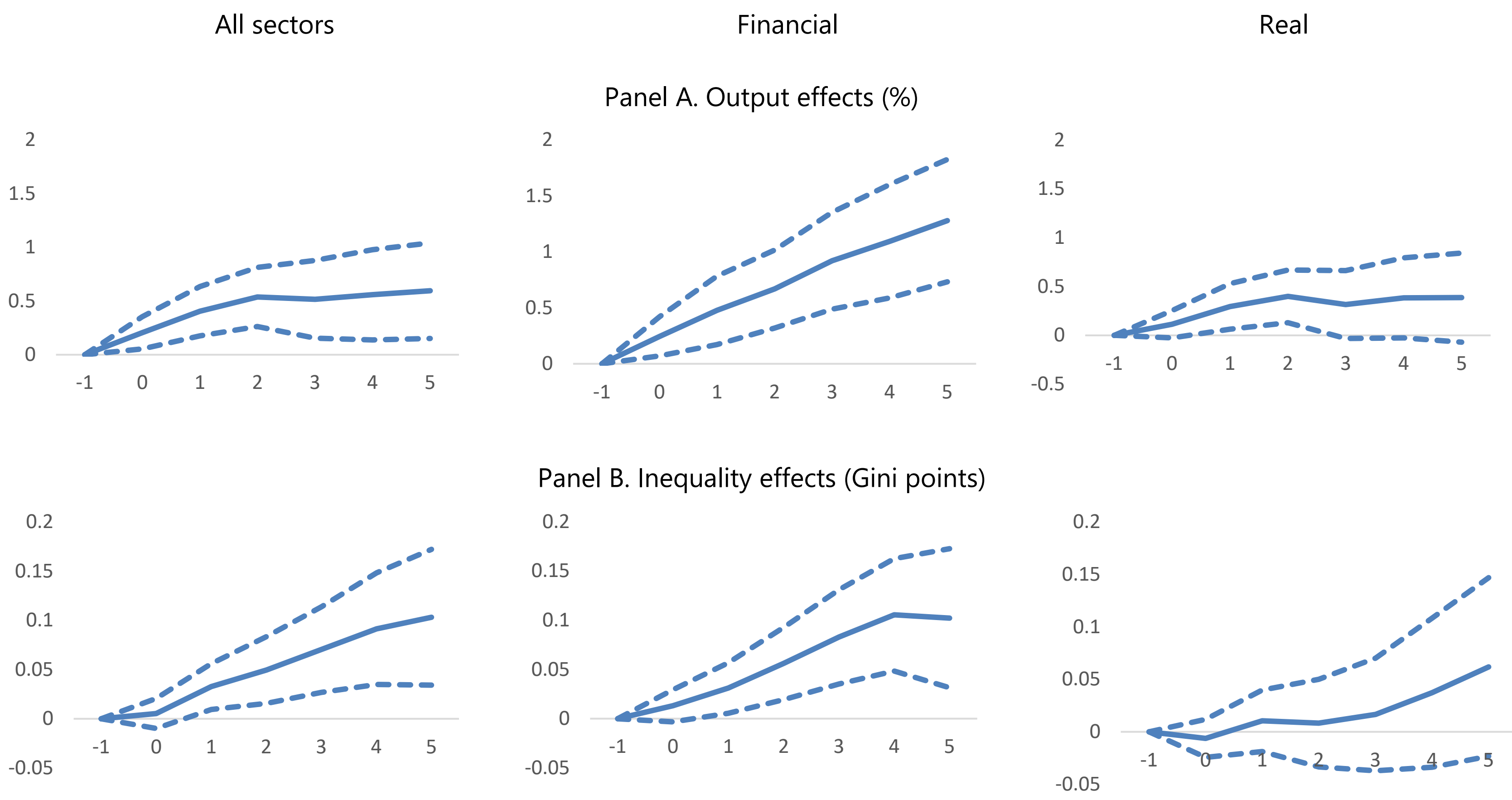
Table A3.6. The Effect of Reforms on Re-election—Mandated reforms

	(I)
	IMF-supported program
Reform_ey*D	-4.568*
	(2.582)
Reform_term*D	-0.530
	(2.825)
Reform_ey*(1-D)	-2.557**
	(1.122)
Reform_term*(1-D)	-0.382
	(0.942)
Initial level regulation	-5.435
	(6.134)
Growth_ey	0.526**
	(0.209)
Growth_term	0.384
	(0.310)
Advanced economy	2.553*
	(1.441)
New democracies	1.220
	(1.103)
Majoritarian system	2.052**
	(0.966)
IMF	-2.109
	(2.843)
Lagged vote share	-0.139
	(0.091)
F-test ey D vs. 1-D	0.50
F-test term D vs. 1-D	0.96
R^2	0.11
Observations	327

Note: D=1 for IMF-supported programs in column. Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

FIGURES

Figure A3.1. Macroeconomic and distributional effect of reforms



Note: Output and inequality effects estimated using the local projection method (Jorda 2015) described in equation A3.1. t= 0 is the year of the reform; solid lines denote the response of output (Gini) to a major reform event, defined as a change of two standard deviations in the reform indicator. Dotted lines denote 90 percent confidence bands.