Structural Reforms and Elections: Evidence from a World-Wide New Dataset

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Three main goals

- **Introduce two new datasets, one on economic policy reforms and another on national electoral outcomes.** How has reform progress evolved over time? How it varies across countries and area of regulation?

- **Analyze the consequences for economic growth of these reforms**. How quickly economic benefits materialize? How heterogenous are the effects across time (role of prevailing business cycle conditions)?

- **Examine the electoral consequences of reform**. Do the effects depend on the (political and economic) timing of reform? On the type of reform?

Political costs of reforms

"It ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new."

Niccolò Machiavelli, 1505.

Main findings—Reform progress

- Significant, but heterogeneous, reform effort in the past four decades. But the pace of liberalization, however, has typically declined since the Global Financial Crisis.

- Reforms appear to have been more frequent in domestic finance, trade, capital and current account than in product and labor markets.

- Advanced economies tend to be characterized by less stringent regulations than emerging markets and low-income counties—labor market regulation (EPL) is an exception.

- Despite this broad tendency toward liberalization, there have been several cases of tightening of regulation and major reform reversals especially regarding employment protection legislation.

Main findings—Growth effects of reform

- Liberalizing reforms are followed by an increase in growth, but with a lag of almost four years.

- Regulatory tightening has immediate negative consequences for growth, but these tend to dissipate over the medium term. The positive effects of liberalization and the negative effects of tightening are similar in size.

- Reforms implemented in good times (i.e., in business cycle booms) generate additional growth compared to reforms implemented in bad times (i.e., in recessions).

Main findings—Electoral effects of reform

- Timing is crucial along two dimensions: when the reform occurs relative to the electoral cycle and when it occurs relative to the business cycle.

  o The vote share of the main governing party (or coalition) declines following reforms implemented in an election year, while the political cost largely disappears when reforms are implemented earlier in the electoral cycle.

  o When economies are in contraction, liberalizations (and tightening) are penalized at the ballot box. In contrast, reforms undertaken during an expansion are not punished, and in some cases, are even rewarded.

Contribution to literature

- Data collection efforts to measure regulatory stances (World Bank, OECD, ILO, EU Commission; Djankov et al. 2002; Botero et al. 2004; Quinn and Toyoda 2008; Abiad et al. 2010; Campos and Nugent 2012; and many more).

- Economic effects of reforms (Djankov et al. 2002; Botero et al. 2004; Abiad and Mody 2005; Ostry et al. 2009; Campos and Nugent 2012; Prati et al. 2013; Giuliano et al. 2013; and many more).

- Electoral effects of "reforms" (Brender and Drazen 2008; Alesina et al. 2019; Alesina et al. 2020; Buti et al. 2010).

Datasets

Structural Reforms Data

We develop the most comprehensive dataset to date of structural reform for a large sample of 90 developing and developed countries during the period 1973-2014.

- **Domestic financial sector.** Six broad areas: interest rate controls; entry barriers; privatization; supervision and regulation; securities markets; and credit controls.

- **Current account**. Restrictions on external payments or receipts.

- **Capital account.** Restrictions as well as components of the capital account.

- **Trade**. Trade tariffs at the product level.

- **Product market**. Regulation (privatization, entry barriers, and supervision) in two network sectors: telecommunication and electricity.

- **Labor market**. New measure of Employment Protection Legislation (EPL) related to termination of full-time indefinite contracts for objective reasons.

Structural Reforms Data

- Continuum of values between 0 and 1.

- Systematic reading and coding of policy actions documented in various sources, including national laws and regulations, as well as IMF country reports.

- Extensive reliability checks: (i) comparison with other de jure indicators; (ii) relation with de facto indicators; (iii) identification of major legislative event behind each main regulatory change.

Heterogenous reform progress across countries, regions..

1. Income groups
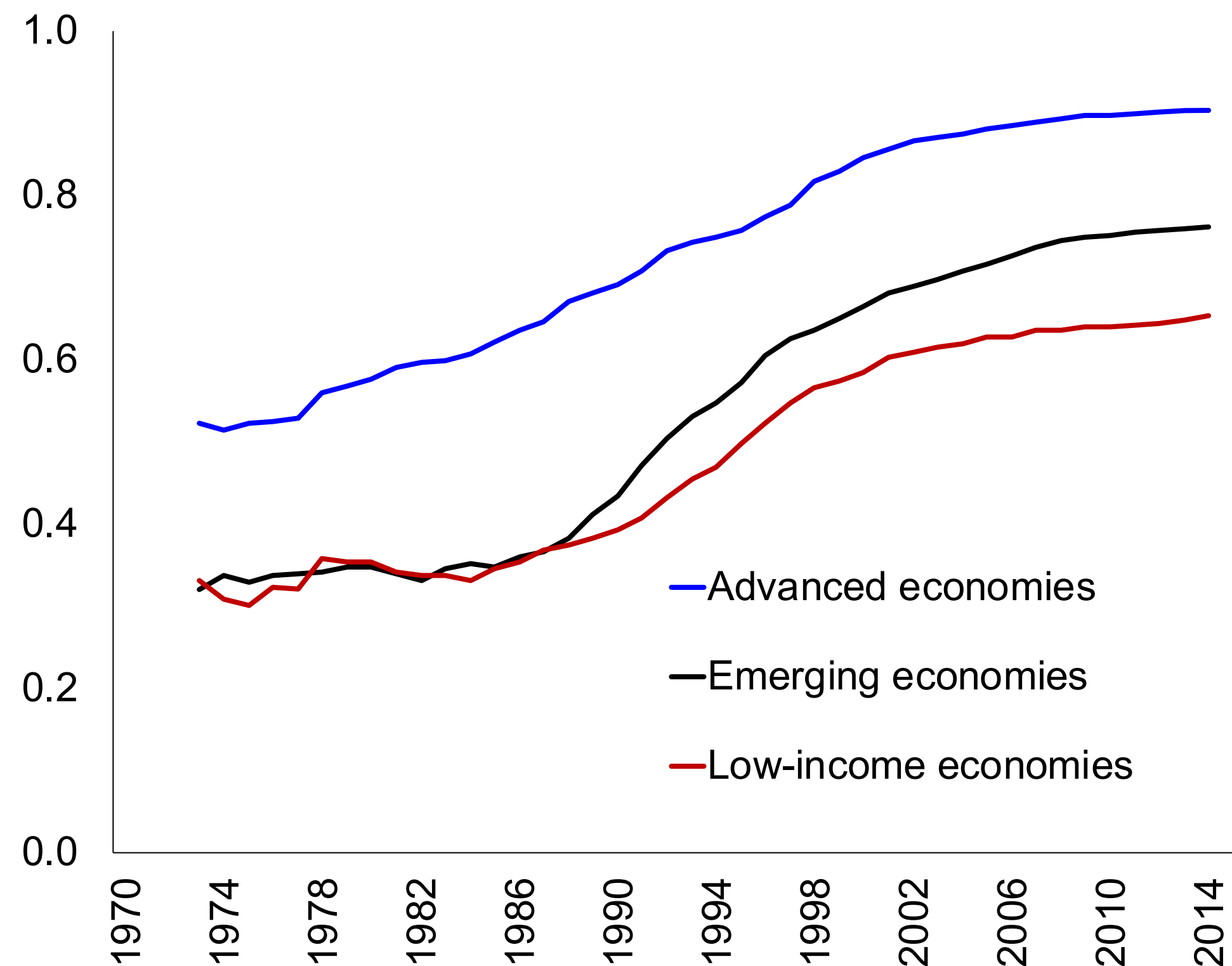
2. Regions
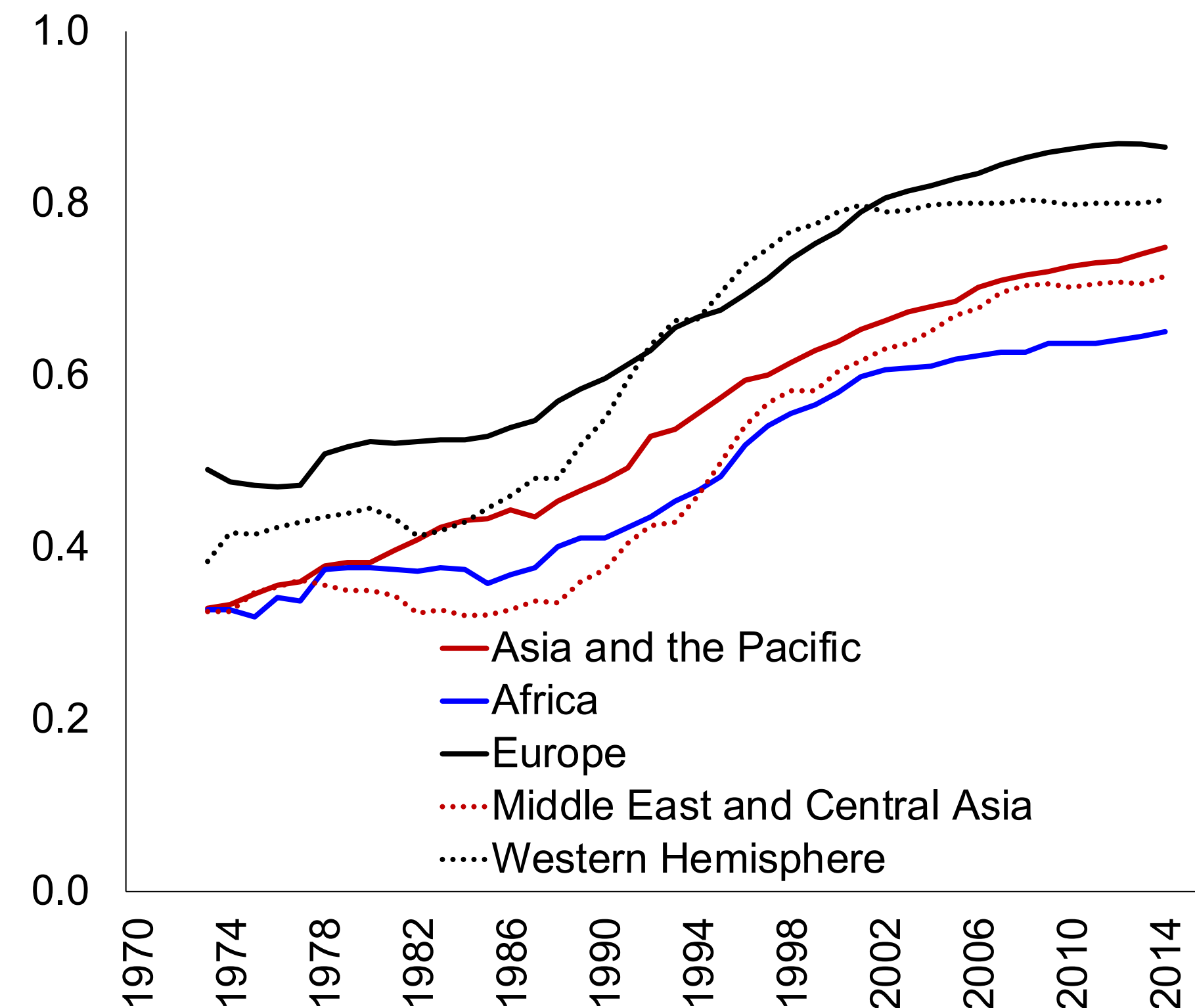
Note: The average reform index is computed as the arithmetic average of indicators capturing liberalizations in six areas: domestic finance, capital account, financial current account, trade, product market and labor market. The index ranges between 0 and 1, with higher values denoting greater liberalization.

…and sectors
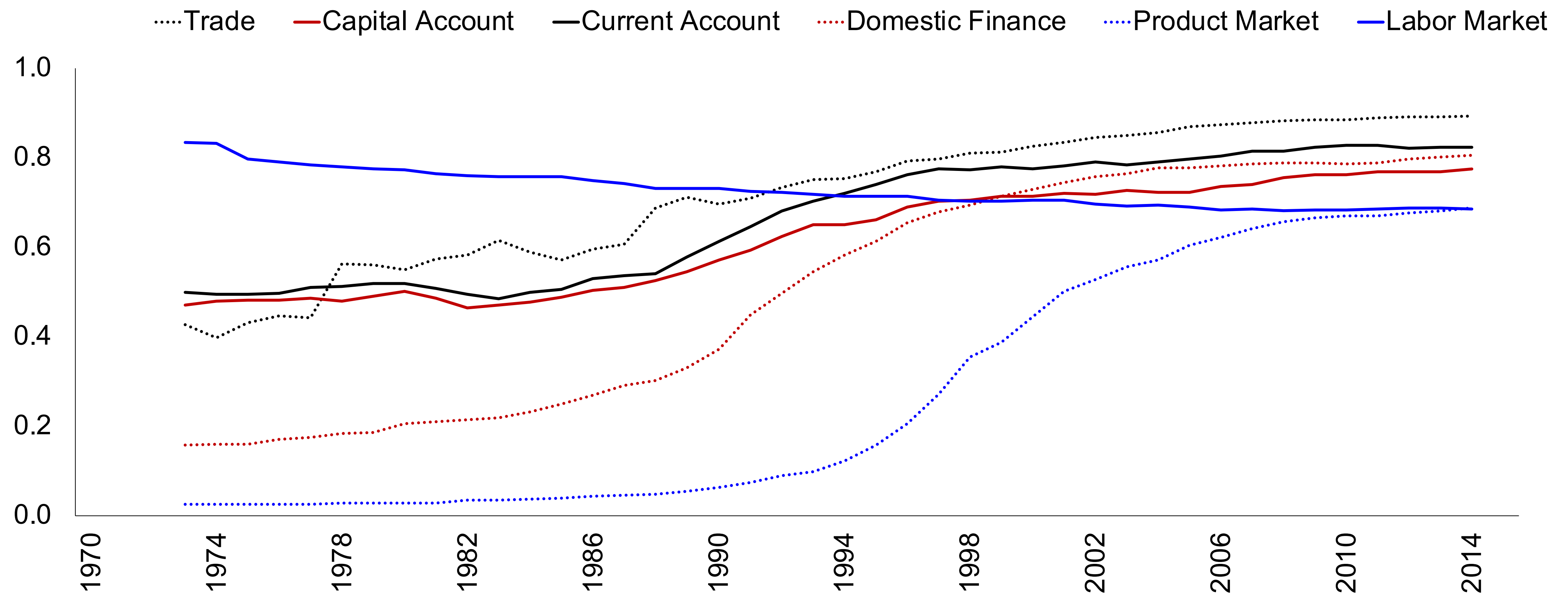
Note: Each reform index ranges between 0 and 1, with higher values denoting greater liberalization.

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Electoral Dataset

- 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 (parties) supporting the incumbent at the current, last and second-last elections.

- Unbalanced sample of democratic elections from the beginning of our reform data, namely 1977 (or the first year in which the country is characterized as a democratic regime) to 2014 for 61 countries.

Timing of reforms

Reforms in the electoral cycle (normalized by one standard deviation)

	All	Weak economic conditions	Strong economic conditions
Reform_ey	0.410	0.432	0.381
Reform_ey (+)	0.491	0.503	0.474
Reversal_ey (-)	-0.072	-0.065	-0.081
Reform_term	0.628	0.687	0.555
Reform_term (+)	0.680	0.729	0.620
Reversal_term (-)	-0.043	-0.037	-0.049

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Reform (+) and Reversal (-) denote liberalization and tightening reforms, respectively. Weak and strong economic conditions are defined as in equation (2).

Growth effects of reforms

Average effect:

$$y_{i,t+k} - y_{i,t-1} = \alpha_i + \gamma_t + \beta_k R_{i,t} + \theta X_{i,t} + \epsilon_{i,t}, \quad k = 0,1,2,\dots,5$$

Across time: check whether effects of reforms vary with the business cycle/crises (Auerbach and Gorodnichenko, 2012):

$$y_{i,t+k} - y_{i,t-1} = \alpha_i + \gamma_t + \beta_k^L F(z_{i,t}) R_{i,t} + \beta_k^H [1 - F(z_{i,t})] R_{i,t} + \theta X_{i,t} + \epsilon_{i,t}, \qquad k = 0,1,2,\dots 5$$

where, e.g., for the business cycle $F(z_{i,t}) = \frac{\exp(-\gamma z_{i,t})}{1 + \exp(-\gamma z_{i,t})}$, $\gamma > 0$ and $z_{i,t}$ is standardized real GDP growth.

where: $y_{i,t}$ = log GDP;

   α_i = country fixed effects;

   γ_t = time fixed effects;

   $R_{i,t}$ = reform defined as the change in the indicator;

   $X_{i,t}$ = controls (lags of dependent variable, past economic growth and past reforms);

   $\epsilon_{i,t}$ = error term.

Average effects

output effect following major reforms (%)
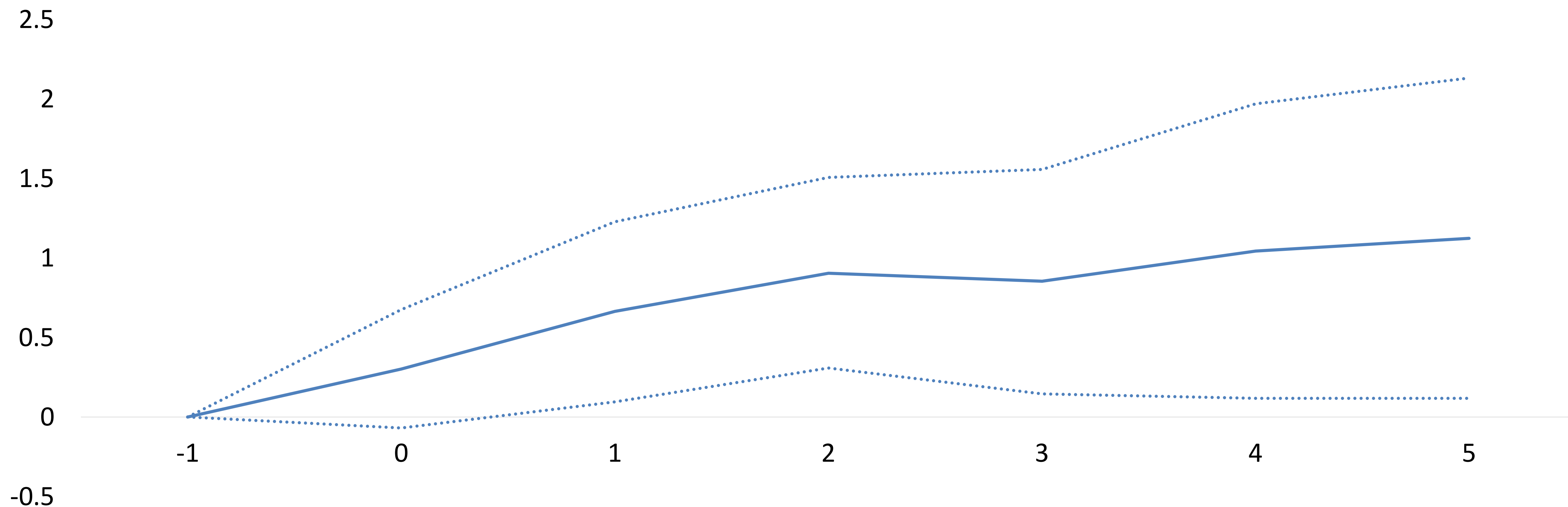
Note: The chart shows the output effects of reforms, estimated using the local projection method (Jorda, 2015). t= 0 is the year of the reform; solid lines denote the response of output to a major reform event, defined as a change of two standard deviations in the average reform indicator. Dotted lines denote 90 percent confidence bands.

Liberalizing vs. tightening

1. Liberalizing

2. Tightening

Note: The chart shows the output effects of reforms, estimated using the local projection method (Jorda, 2015). t= 0 is the year of the reform; solid lines denote the response of output to a major reform event, defined as a change of two standard deviations in the average reform indicator. Dotted lines denote 90 percent confidence bands.

1. Liberalizing & recessions

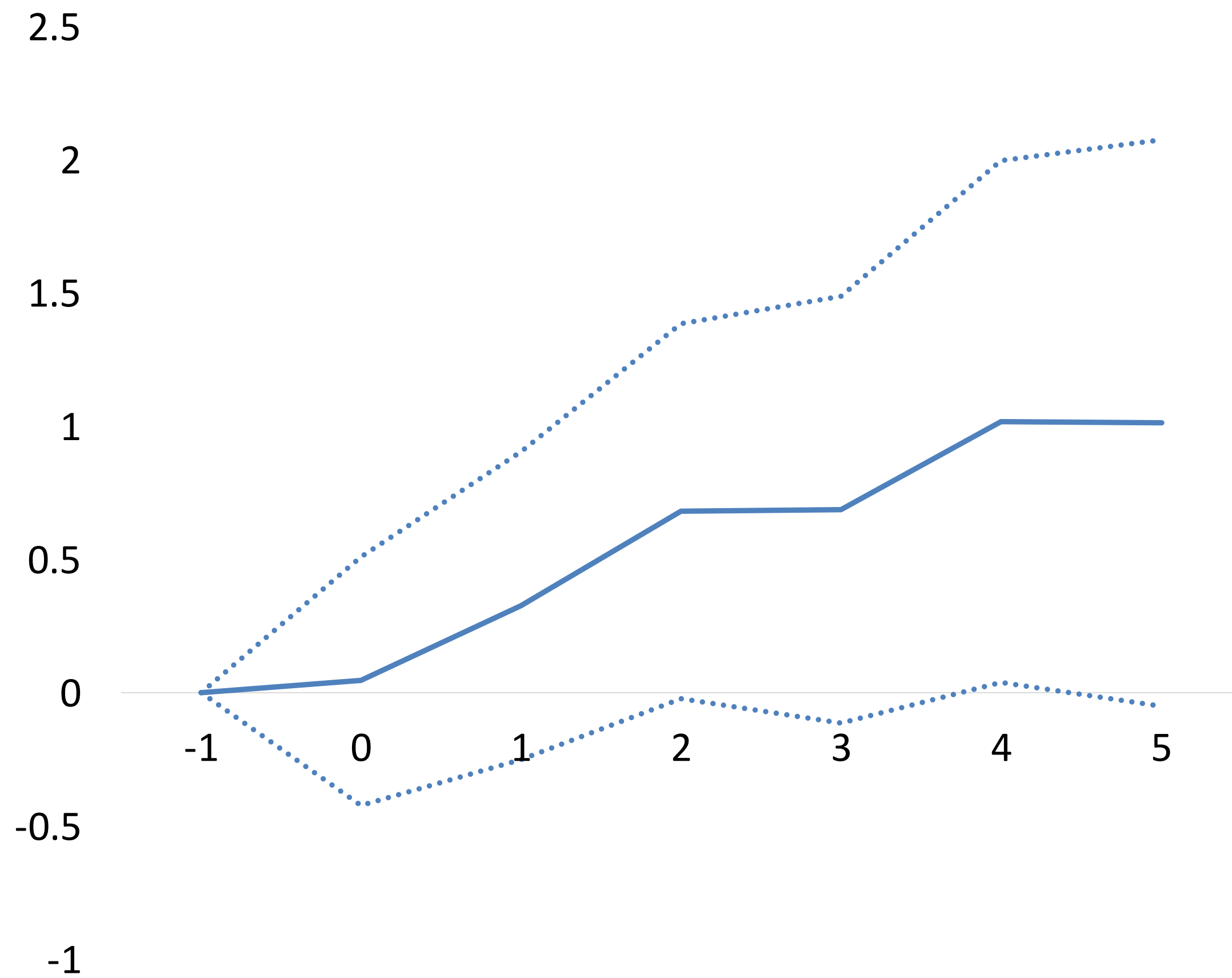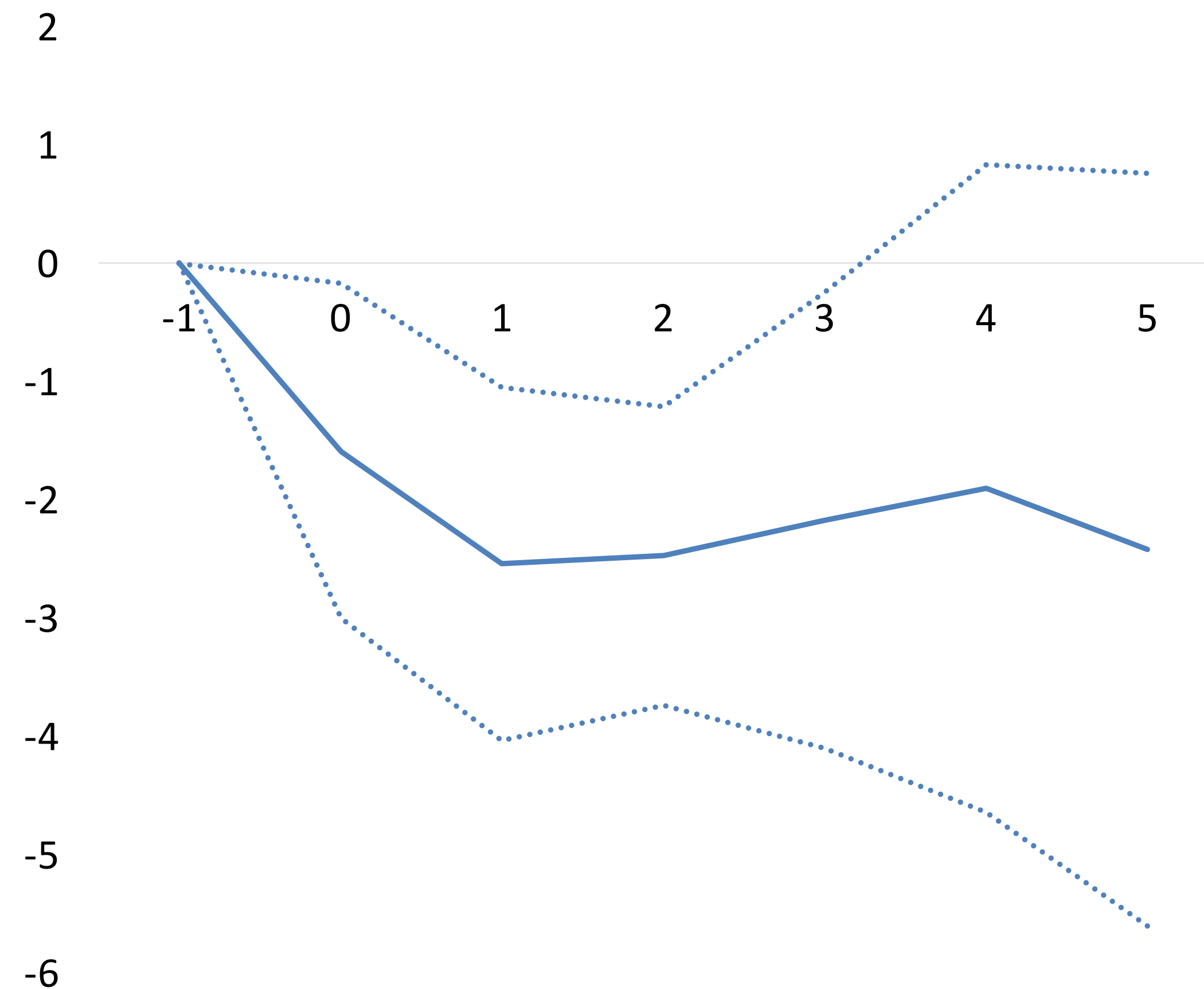**2. Tightening & expansions**
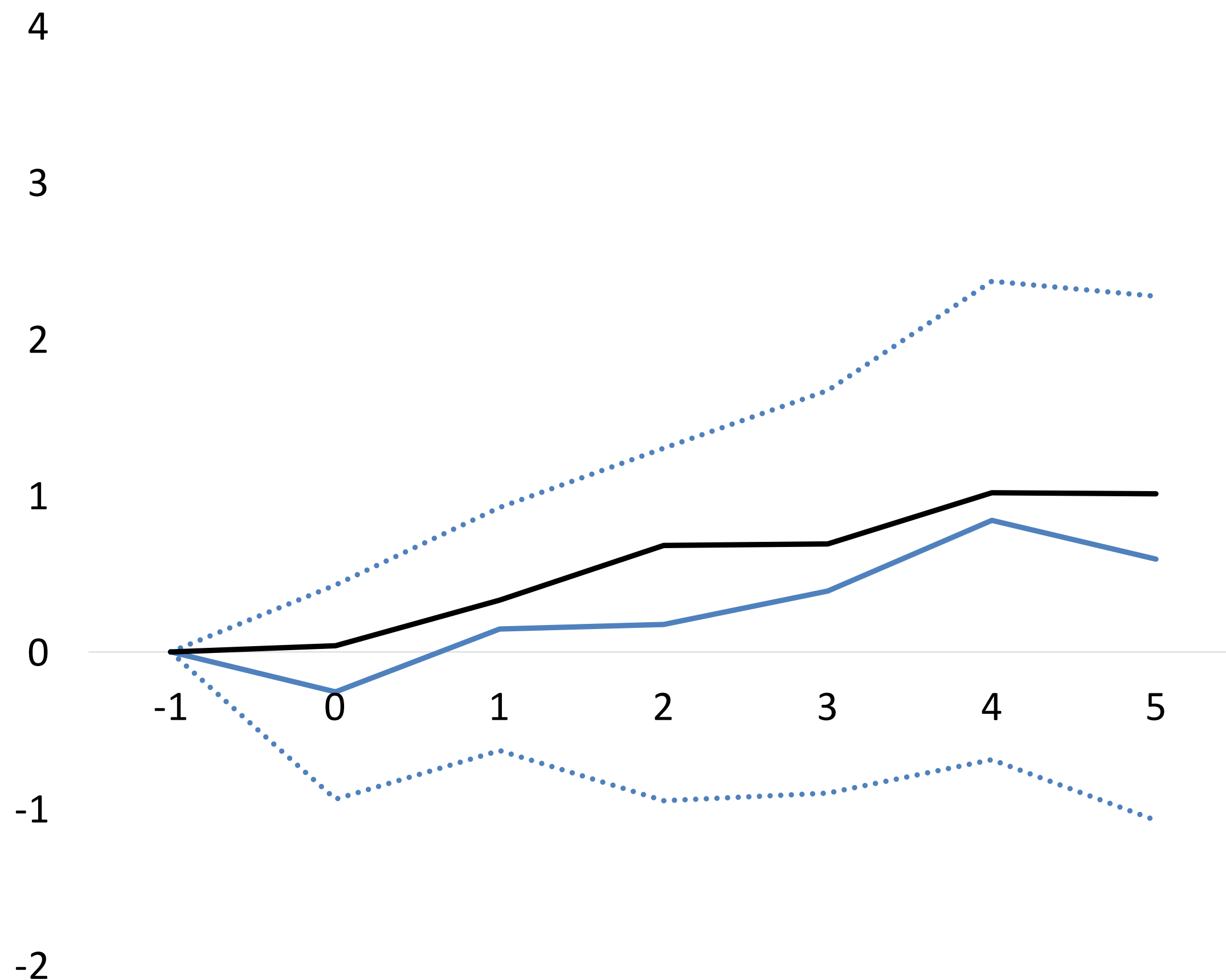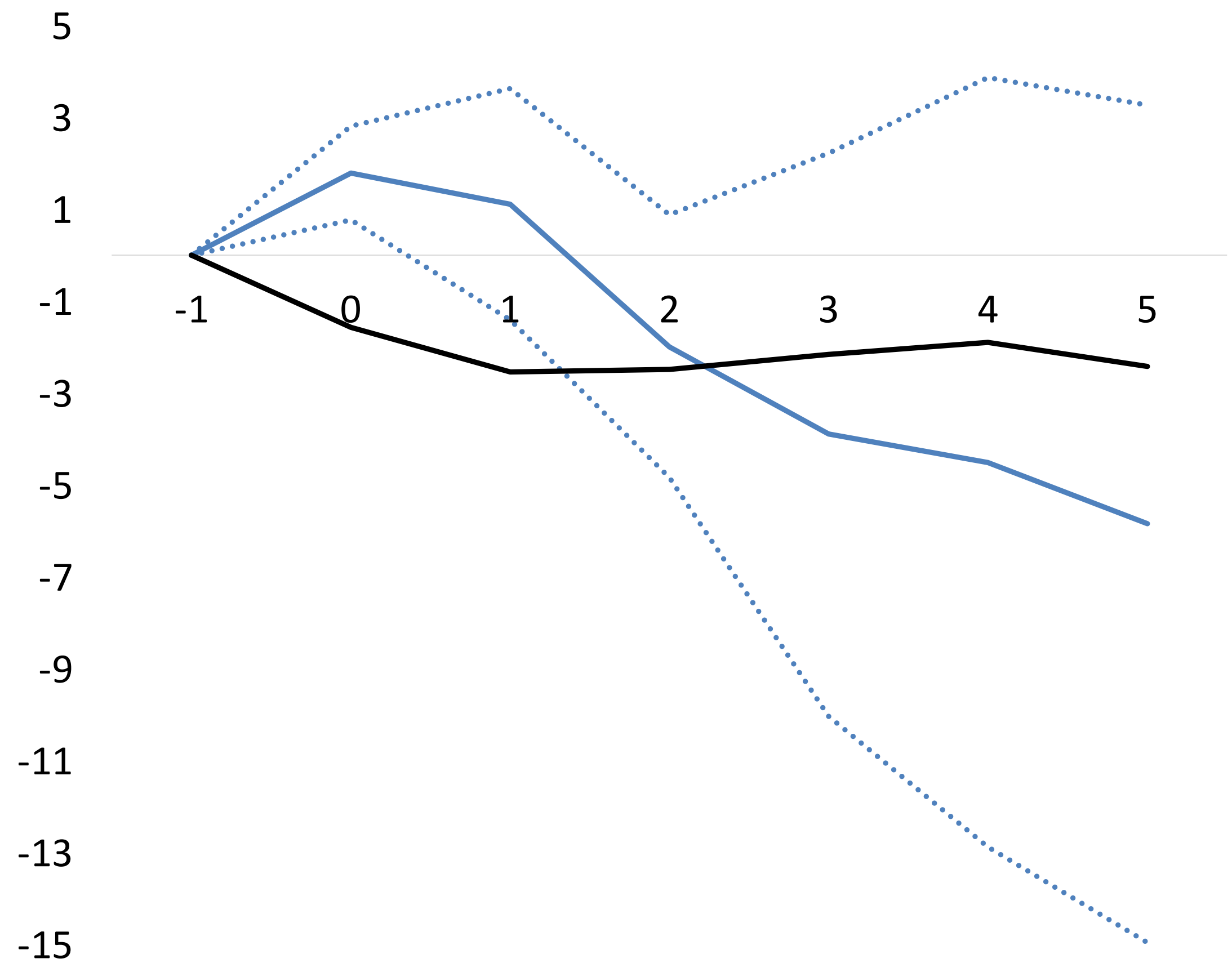

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Electoral effects of reforms

Empirical framework

Average effect:

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

Conditional effect:

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

The effect of reforms on electoral outcomes—election year vs. rest of term

	(I)	(II)	(III)	(IV)
Reform_ey	-2.820***	-3.230**	-3.460**	-2.725**
	[0.947]	[1.295]	[1.327]	[1.279]
Reform_term	-0.672	-0.656	0.354	-0.137
	[1.040]	[1.170]	[1.398]	[1.687]
Initial level regulation	-6.798	-0.981	26.900	26.035
	[6.009]	[10.376]	[35.584]	[36.605]
Growth_ey	0.512**	0.362	0.260	0.171
	[0.206]	[0.265]	[0.410]	[0.431]
Growth_term	0.425	0.699*	0.826*	0.751
	[0.323]	[0.398]	[0.486]	[0.495]
Country fixed effects	No	Yes	Yes	Yes
Country-specific time trends	No	No	Yes	Yes
R^2	0.10	0.27	0.47	0.48
Observations	327	327	327	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Estimates based on equation (3). Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

The effect of reforms on electoral outcomes—recessions vs. expansions

	(I)	(II)	(III)
Reform_ey (recessions)	-4.092**		-4.250**
	[1.563]		[1.598]
Reform_ey (expansions)	-1.201		-1.338
	[1.870]		[1.917]
Reform_term (recessions)		-0.010	-1.583
		[2.520]	[1.985]
Reform_term (expansions)		-0.772	0.150
		[2.570]	[2.345]
Initial level regulation	-4.759	-1.090	-6.709
	[6.037]	[6.221]	[5.992]
Growth_ey	0.474**	0.465**	0.478**
	[0.214]	[0.201]	[0.215]
Growth_term	0.415	0.503	0.391
	[0.321]	[0.365]	[0.352]
Total effect recessions	-4.092**	-0.010	-5.833***
Total effect expansions	-1.201	-0.772	-1.433
F-test difference	0.34	0.87	1.02
R^2	0.10	0.08	0.10
Observations	327	327	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Estimates based on equation (4). Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

The effect of reforms on electoral outcomes—Reforms vs. Reversals

	(I) Baseline	(II) Recessions vs. expansions
Reform_ey (+)	-2.930**	
	[1.157]	
Reversal_ey (-)	2.575	
	[3.025]	
Reform_term (+)	-0.397	
	[1.061]	
Reversal_term (-)	2.245	
	[4.071]	
Reform_ey (+) (recessions)		-4.196**
		[1.663]
Reversal_ey (-) (recessions)		0.618
		[2.690]
Reform_term (+) (recessions)		-4.658*
		[2.349]
Reversal_term (-) (recessions)		-12.643***
		[3.871]
Reform_ey (+) (expansions)		-0.286
		[1.993]
Reversal_ey (-) (expansions)		7.286
		[10.955]
Reform_term (+) (expansions)		3.413*
		[1.845]
Reversal_term (-) (expansions)		20.442***
		[6.280]
R^2	0.10	0.13
Observations	327	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Reform (+) and Reversal (-) denote liberalization and tightening reforms, respectively. Estimates based on equation (5). Additional controls in the baseline specifications are included but not reported. Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

Dealing with endogeneity

- We focus on externally mandated reforms (those implemented during IMF programs).

- We use an IV proposed by Giuliano et al. (2013); the instrument is 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.

- We focus on countries/time periods with *exogenous* elections.

The effect of reforms on electoral outcomes—exogeneity checks

	(I)	(II)	(III)	(IV)
	OLS	Ex. elections	IMF	IV
Reform_ey	-2.820***	-3.966***	-5.109**	-7.672*:
	[0.947]	[1.043]	[2.143]	[1.584]
Reform_term	-0.672	-0.596	-1.248	-1.140
	[1.040]	[2.096]	[2.449]	[1.047]
Initial level regulation	-6.798	-4.399	-1.482	-16.611:
	[6.009]	[14.615]	[5.954]	[7.487]
Growth_ey	0.512**	0.502*	0.502**	0.586**
	[0.206]	[0.269]	[0.208]	[0.222]
Growth_term	0.425	1.191**	0.445	0.316
	[0.323]	[0.568]	[0.313]	[0.341]
Kleibergen-Paap rk Wald F statistic				25.92
Stock-Yogo 10% critical value				16.38
(Uncentered) R^2	0.10	0.14	0.09	0.23
Observations	327	127	327	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Estimates based on equation (3). Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

The effect of reforms on electoral outcomes, recessions vs. expansions, exogeneity checks

	(I) OLS	(II) Ex. elections	(III) IMF	(IV) IV
Reform_ey (recessions)	-4.250**	-5.362***	-1.886	-7.357*:
	[1.598]	[0.813]	[11.814]	[1.193
Reform_ey (expansions)	-1.338	-1.441	-6.893	-0.093
	[1.917]	[4.201]	[4.811]	[1.690
Reform_term (recessions)	-1.583	-2.465	-2.293	-2.193
	[1.985]	[3.424]	[3.667]	[1.954
Reform_term (expansions)	0.150	1.043	-0.474	0.474
	[2.345]	[4.531]	[5.353]	[2.269
Initial level regulation	-6.709	-4.002	-1.579	-8.525
	[5.992]	[14.824]	[5.975]	[6.062
Growth_ey	0.478**	0.451	0.510**	0.436*
	[0.215]	[0.295]	[0.208]	[0.225
Growth_term	0.391	1.145*	0.428	0.357
	[0.352]	[0.572]	[0.311]	[0.353
Total effect recessions	-5.833***	-7.827**	-4.178	-9.551*:
Total effect expansions	-1.433	-0.398	-7.367	0.382
F-test difference	1.02	0.96	0.03	4.51**
Kleibergen-Paap rk Wald F statistic				184.4
Stock-Yogo 10% critical value				16.38
(Uncentered) R^2	0.10	0.14	0.09	0.26
Observations	327	127	327	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Estimates based on equation (4). Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

The effect of reforms on electoral outcomes—Reforms vs. Reversals

	(I) OLS	(II) Ex. elections	(III) IV
Reform_ey (+) (recessions)	-4.196**	-5.620***	-6.623***
	[1.663]	[1.880]	[1.191]
Reversal_ey (-) (recessions)	0.618	1.679	-0.388
	[2.690]	[3.957]	[2.859]
Reform_term (+) (recessions)	-4.658*	-4.701	-4.859**
	[2.349]	[5.895]	[2.233]
Reversal_term (-) (recessions)	-12.643***	-5.675	-10.961***
	[3.871]	[6.833]	[2.985]
Reform_ey (+) (expansions)	-0.286	1.700	0.583
	[1.993]	[4.827]	[1.656]
Reversal_ey (-) (expansions)	7.286	13.680	7.934
	[10.955]	[18.993]	[10.522]
Reform_term (+) (expansions)	3.413*	5.529	3.460**
	[1.845]	[3.829]	[1.764]
Reversal_term (-) (expansions)	20.442***	17.341***	19.711***
	[6.280]	[6.833]	[5.749]
Total effect recessions	-20.879***	-14.317	-22.831***
Total effect expansions	30.856**	38.251**	31.688**
F-test: difference	11.95***	4.77**	14.18***
Kleibergen-Paap rk Wald F statistic			293.32
Stock-Yogo 10% critical value			16.38
(Uncentered) R^2	0.13	0.18	0.29
Observations	327	127	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Reform (+) and Reversal (-) denote liberalization and tightening reforms, respectively. Estimates based on equation (5). Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

Additional exercises

- types of reforms (real vs. financial)➜financial reforms more costly

- Governing alone vs. coalition➜ gov. alone and main party mostly penalized

- Developing vs. advanced economies ➜ point estimates larger for developing economies

- New vs. old democracy➜ no much difference

- Majoritarian vs. non majoritarian ➜ no much difference

The effect of reforms on electoral outcomes—Finance vs. Real

	(I)	(II)	(VII)	(VIII)
	OLS		IV	
	Finance	Real	Finance	Real
Reform_ey	-7.346***	1.712	-16.685***	0.297
	[2.362]	[2.155]	[3.749]	[16.620]
Reform_term	0.018	-1.257	-0.554	-1.174
	[2.557]	[1.786]	[2.464]	[1.993]
Initial level regulation	-3.049	-0.706	-7.655	-1.372
	[4.923]	[6.225]	[5.277]	[10.184]
Growth_ey	0.287	0.467**	0.299	0.473**
	[0.256]	[0.199]	[0.262]	[0.205]
Growth_term	0.673**	0.484	0.609*	0.483
	[0.311]	[0.326]	[0.314]	[0.324]
Kleibergen-Paap rk Wald F statistic			31.37	9.03
Stock-Yogo 10% critical value			16.38	16.38
(Uncentered) R^2	0.11	0.09	0.08	0.08
Observations	363	327	363	327

The effect of reforms on electoral outcomes—Governing alone vs. coalition

	(I)	(II)	(III)	(IV)
	OLS	Ex. elections	IMF	IV
Reform_ey (Gov. alone)	-3.132***	-2.056***	-3.135***	-3.688***
	[1.033]	[0.507]	[1.112]	[0.769]
Reform_term (Gov. alone)	-0.112	-0.372	0.123	-0.24
	[1.402]	[1.021]	[1.045]	[0.670]
Reform_ey (Gov. in coalition)	-1.001	2.538	4.663	-0.852
	[1.223]	[9.176]	[3.919]	[0.644]
Reform_term (Gov. in coalition)	-1.723	1.981	-18.161***	-1.252
	[1.479]	[7.787]	[5.435]	[0.773]
Initial level regulation	-6.613	-4.449	-0.278	-14.448**
	[5.940]	[14.821]	[5.874]	[6.966]
Growth_ey	0.514**	0.490*	0.613***	0.573***
	[0.205]	[0.267]	[0.194]	[0.218]
Growth_term	0.437	1.214**	0.446	0.359
	[0.318]	[0.564]	[0.296]	[0.319]
Total effect (Gov. alone)	-3.244*	-4.856*	-6.024*	-7.858***
Total effect (Gov. in coalition)	-2.724	9.038	-26.996***	-4.208**
F-test: difference	0.06	0.17	8.07***	3.00*
Kleibergen-Paap rk Wald F statistic				25.85
Stock-Yogo 10% critical value				16.38
(Uncentered) R^2	0.1	0.15	0.13	0.07
Observations	327	128	327	327

Note: Reform_ey and Reform_term denote reforms in the election year and in the rest of the incumbent leader term, respectively. Estimates based on equation (6). Standard deviations based on robust standard errors in parentheses. ***,**,* denote significance at 1, 5 and 10 percent, respectively.

Policy implications

There is a pressing need and strong case for well-designed, appropriately timed and carefully implemented structural reforms,

- Significant scope for reforms, especially in emerging markets and developing economies;
- A major push for structural reform would lead to significant output gains in the medium term

… but political costs need to be internalized.

- Act swiftly following an electoral victory to implement reforms during the political "honeymoon" period;
- Reforms are best implemented when economic conditions are favorable;
- Credible political commitment to reforms—including strong ownership—and enhanced dialogue to garner support with business and civil society are key.