ONLINE APPENDIX

The fiscal politics of turnover and tenure: partisan competition and interterm cycles

Contents

Appendix A: Coding terms

This section further explains my construction of terms from annual data. As noted in the text, the central task is to determine which years to pool together, and my coding scheme designates *y* as the last year of a term if there is an election that calendar year, unless it occurs in the last quarter of *y* and the fiscal year begins in January, in which case the expiring term continues through *y*+1. So, the fiscal and economic data for *y* are always matched to the government that was in office at the beginning of the calendar year, unless there was an election in the last quarter of *y*-1 and the fiscal year starts in January, in which case the year-*y* data are considered the last year of the prior term.

No feasible method of constructing term-level data is perfect, including this one. For example, contrary to my scheme, a government that comes to power in *y* may be able to significantly affect that year's debt issuance. But my approach assumes that those scenarios are rare and that a more pressing question is whether a government that comes to power in late-*y* is able (or willing) to make adjustments quickly enough so as to affect *y*+1 fiscal data. In presidential systems, governments often cannot make adjustments that quickly, because both the transition period and the budget process are long. In parliamentary systems, transitions are often quicker, but sometimes there is a lengthy period of coalition formation; and even if there is a quick transition to a new government, considerable time may pass before any fiscal adjustments are implemented, either because the government deliberates about its plans or because it introduces them through the normal, months-long budgetary process.

Ultimately, then, the question is an empirical one. So, I investigated all post-turnover governments in my dataset, using the *OECD Journal on Budgeting* and Google to find news

reports about the first budgets of those governments. In most cases, my scheme seemed appropriate. In some, the delay after late-year elections was warranted because coalition negotiations were protracted (e.g., Belgium, the Netherlands). In others, the scheme was appropriate because the new government maintained the budget that was crafted by its predecessor (e.g., Czech Republic in 2014).[1] However, I did find two cases in which a new administration quickly introduced adjustments: the Danish government elected in November 2001 and the Greek government elected in October 2009. In those cases, I adjusted the coding so that the election year is the last year of the expiring term (as it is in most cases, when the election is not in the final quarter of the year). I also made three other exceptions to the late-year-election rule, all for late-2019 elections. In those cases, I used 2019 instead of 2020 as the term-end year because my data end in 2019 (before the COVID pandemic) and because using 2019 allows more observations to enter the dataset. All the exceptions are noted in Table B.2.

I did not need to generalize the issue about election timing and fiscal calendars. Although several countries start their fiscal years in March or July instead of January, they never had elections soon before the start of the fiscal year. I also did not need to consider changes in fiscal calendars. In my dataset, only one country changed its fiscal calendar (New Zealand in 1989).

Another coding issue pertains to elections that are held in very short succession. When a calendar year had two elections, I ignored the first and used the latter to code the term-end year and the political variables for the next term. I did similarly whenever a country had elections in successive calendar years. I did that because my analysis is focused on multi-year terms, and I wanted to avoid undue influence by single-year observations. Also, when countries have back-to-

[1] Reuters. 6 Dec. 2013. Czech parliament approves 2014 budget gap of just below 3 percent of GDP.

back elections, it is typically because the first is indecisive or results in a weak government that is incapable of changing policy. Thus, my default coding was to ignore the first election and use the second election to differentiate terms. I made two exceptions, for Australia 1984–85 and Ireland 1981–1983. Both are explained in Table B.2 below.

Appendix B: Notes on variables and countries

This appendix provides additional details on some of the variables.

FT, LT, LEFT, and MAJ. To code these variables, I used various sources, including but not limited to the following:

1. Database of Political Institutions. 2020. Cruz, et al., (2021). Washington, DC: Inter-American Development Bank Research Department.
2. Parline database, Inter-parliamentary Union, https://data.ipu.org/
3. Lijphart Elections Archive, https://ucsd.libguides.com/politicalscience
4. Many sources on minority governments, including:
    - Christiansen, F.J. and Pedersen, H.H. 2014. Minority coalition governance in Denmark. *Party Politics*, 20(6), pp.940-949.
    - Zbíral, R. 2015. Changing investiture rules in the Czech Republic. In: *Parliaments and Government Formation: Unpacking Investiture Rules*, pp.182-196.
5. Wikipedia pages on countries' elections and governing cabinets.

The first of these sources, the Database of Political Institutions (DPI), was the source I used the most, especially its variables EXECRLC and GOVFRAC, the latter of which is the source of GFRAG. EXECRLC captures the ideology of the government, and is coded left, center, or right. I used it to code LEFT and to inform my coding of FT. I needed to supplement the DPI data because it begins in 1975, whereas my dataset begins in the late-1960s; I also consulted other sources to fill in missing data and cross-verify some DPI values. Coding discrepancies are noted in Table B.2.

Note that my coding of minority governments does not differentiate between those that have confidence and supply agreements with non-governing parties and those that do not.

EURO is coded as it is because of two considerations. First, it seems that countries that adopted the euro often exhibited low debt growth for the periods immediately before and immediately after their introduction of the currency. So, I coded the variable to capture two terms' worth of restraint in the dynamic model. Second, it seems useful to account for the Stability and Growth Pact for Denmark, Sweden, and the United Kingdom. Even though none of them joined the euro, they were part of the Pact in 1998-2000, and to comply with the exchange-rate mechanism and the possibility of joining the euro, they exhibited a similar level of debt restraint in 1998-2000 as did the countries that did join the euro.

NFRULES. This variable comes from the IMF's Fiscal Rules Dataset, which spans 1985-2012. I extend the time period, setting NFRULES to zero for all countries prior to 1985.

UNEMPLOYMENT. The source of this data is the International Financial Statistics dataset from the IMF (accessed June 6, 2022). But it has missing data, especially prior to 1979. The OECD had the same data series, minus the missing data, in their Annual Labour Force Statistics archive, so I used it to fill in the gaps in the IMF data. (OECD data accessed May 5, 2023.) Also, for missing unemployment data for Costa Rica 1976-1979, I used Fields, G. S. 1988. Employment and economic growth in Costa Rica. *World Development*, 16(12), 1493-1509.

Table B1: Complete listing of terms by type and majority government

Country	Term listed by end-year
Australia	1972, **1975**, **1977**, 1980, 1983, **1987**, 1990, 1993, 1996, **1998**, 2001, 2004, 2007, **2010**, 2013, **2016**, 2019
Belgium	1972, 1974, 1979, 1982, 1986, 1988, 1992, 1995, 1999, 2003, 2007, 2010, **2014**, **2019**
Canada	1980, 1984, **1988**, 1993, **1997**, 2000, 2004, 2006, **2008**, 2011, 2015, **2019**
Costa Rica	1978, **1982**, **1986**, 1990, **1994**, **1998**, **2002**, 2006, **2010**, 2014, **2018**
Czech Republic	1998, **2002**, 2006, **2010**, 2014, **2018**
Denmark	**1971**, **1973**, **1975**, **1977**, 1980, 1982, **1984**, 1988, 1991, 1994, **1998**, 2001, **2005**, 2008, 2011, **2015**, **2019**
Estonia	1999, 2003, 2007, 2011, 2015, 2019
Finland	**1970**, 1972, 1975, 1979, 1983, 1987, **1991**, 1995, **1999**, **2003**, 2007, 2011, **2015**, **2019**
Germany	1981, 1983, **1987**, 1991, 1995, 1998, **2002**, 2005, **2009**, 2013, 2017
Greece	1982, **1985**, 1990, **1994**, **1996**, 2000, 2004, **2007**, 2009, **2012**, **2015**, **2019**
Hungary	**1998**, 2002, 2006, 2010, **2014**, 2018
Ireland	**1977**, **1981**, **1983**, 1987, **1989**, 1993, **1997**, **2002**, 2007, 2011, **2016**, 2019
Israel	**1999**, **2001**, **2003**, 2006, 2009, 2013, 2015, 2019
Italy	**1996**, **2001**, **2006**, **2008**, **2013**, **2018**
Japan	**1996**, **2000**, 2003, 2005, 2009, **2012**, **2014**, 2017
Netherlands	1973, **1977**, **1982**, 1986, 1989, 1991, 1994, **1998**, 2003, **2007**, 2010, **2012**, 2017, 2019
New Zealand	1981, 1984, **1987**, 1990, **1993**, 1996, 1999, **2002**, 2005, 2008, **2011**, 2014, 2017, **2019**
Slovenia	2001, 2005, **2008**, **2012**, **2014**, **2018**
Spain	**1983**, **1986**, 1990, 1993, 1996, **2000**, 2004, **2008**, 2012, **2016**
Sweden	1970, 1973, 1976, **1979**, 1982, **1985**, 1988, 1991, **1994**, **1998**, 2002, 2006, **2010**, 2014, **2018**
United Kingdom	1970, **1974**, **1979**, **1983**, 1987, 1992, 1997, **2001**, 2005, 2010, **2015**, 2017, 2019
Uruguay	1995, 2000, 2005, **2010**, 2015, 2019

Note: Terms are listed by their end year. Boldface indicates first term (FT=1). Underline indicates majority government (MAJ=1).

Table B2 Coding notes by country

Country	Notes on variables and coding	
Australia	i.	1974 election ignored; 1975 is used as the end year.
	ii.	Terms ending 1977 and 1998 are coded MAJ=1, even though the coalition was in power, because the Liberal Party had a majority of seats in the House. For these terms, I set GFRAG=0.
	iii.	In late-1984, elections were held to synchronize the House and Senate electoral calendars, one and a half years after the prior federal elections. The 1984 elections resulted in continuity, so I ignore them and use 1984-1987 as a single term.
Canada	i.	I ignore the turnover that occurred in 1979, as it lasted only nine months before a Liberal Party government returned to power.
	ii.	I use 2019 as a term-ending year despite the late-year (October) election. The exception allows another observation to enter the dataset.
Costa Rica	i.	Term ending 2014 is coded LT=1, and 2018 is coded FT=1, because of the collapse of the PLN and change in the party system, even though the government remained left-leaning.
Czech Republic	i.	LEFT=0 for 2007-2014. (EXECRLC in the DPI has missing data for that period.)
	ii.	Terms ending in 2011 and 2018 are designated FT=1.
	iii.	Term ending in 2014 is coded FT=0 because ODS still led the government, and the PM was still ODS, but there had been a change to the party system. Two brand new right-wing parties were elected in 2010, and they were in the new, 3-party coalition, which was more right-leaning than the prior, center-right coalition. The new government also instituted fiscal reforms.
Denmark	i.	After the November 2001 turnover election, the new government was granted the ability to submit a budget at end of January 2002. So, I use 2001 as the end-year of the prior term, making an exception to the late-year election rule for the coding of terms. (See OECD Economic Surveys Denmark (2002), p. 34, https://read.oecd-ilibrary.org/economics/oecd-economic-surveys-denmark-2002_eco_surveys-dnk-2002-en#page1.)
Estonia	i.	LEFT=0 for all governments ending 1999-2015. During that time, coalitions changed, but there were no major changes in the government's ideological orientation.
	ii.	With the 2015 elections, a centrist government was replaced by a right-leaning one, but the prime minister was unchanged. One year into the term, a no-confidence vote installed a center-left government. I code the term ending 2019 as FT=LT=0 and LEFT=0.
Finland	i.	The term ending 1979 is coded LEFT=1 and FT=LT=0. After the previous election, a centrist government formed; but midway through its term it collapsed and a center-left government was formed with a new prime minister.
Germany	i.	The term ending in 1983 is coded LEFT=1, although the government was replaced one year before by a center-right government, which won the 1983 elections. That next term is coded FT=1.
Greece	i.	Very shortly after the October 2009 elections, the new PASOK government introduced a fiscal reform. So, I code 2009 as the end-year of the prior term, making an exception to the late-year election rule for the coding of terms.
	ii.	LEFT=1 for 2012. (EXECRLC in the DPI has missing data for that year.)

	iii.	Greece had two elections in each of 1989, 2012, and 2015. It also held elections in 1990. I ignore the 1989 elections and use 1990 as the end year of the term that began after the 1985 elections.
Hungary	i.	MAJ=1 if the Fidesz-KDNP alliance had a parliamentary majority because in each case Fidesz had a majority by itself.
	ii.	The coalition government that ruled 2007-2009 is coded GFRAG=.3. (In the DPI, GOVFRAC=0.)
Ireland	i.	There were two elections in 1982, after the 1981 turnover election. With each 1982 election, the Taoiseach and government swapped, such that post-1983 looked like post-1981, with a Fine Gael Taoiseach. I ignore both 1982 elections, and code the post-1981 term as ending in 1983, with FT=1.
	ii.	There was a change in government in 1994, almost two years into the term. I ignore the government change, in which the Fianna Fáil-Labour coalition was replaced by a Fine Gael-Labour-Democratic Left coalition.
Israel	i.	There was a government change in 1990, midway through the term that ends in 1992. The prime minister was unchanged, but a right-leaning coalition replaced a grand coalition.
	ii.	2001 is an end year because of the national elections for prime minister, which resulted in a new prime minister and governing coalition.
	iii.	Two elections were held in 2019.
Italy	i.	I exclude pre-1993 Italy because it had a long-standing dominant party that was at little risk of being ousted by a competitor. An early-1990s political upheaval led to an electoral reform that improved the odds of partisan turnover in government.
	ii.	Two years before the end of the term that ended in 2013, Prime Minister Berlusconi resigned and Monti assumed control of a caretaker government.
Japan	i.	The two chambers of Japan's Diet do not have concurrent terms, but the lower chamber is responsible for choosing the prime minister, and its budgets cannot be vetoed by the House of Councillors, so I ignore that chamber.
	ii.	Like Italy, I exclude pre-1993 Japan because it had a long-standing dominant party that was at little risk of being ousted by a competitor. An electoral reform in 1993 improved the odds of partisan turnover in government.
	iii.	LEFT=1 for 2010-2012. (EXECRLC in the DPI is coded differently.)
	iv.	GFRAG=0 whenever MAJ=1. (GOVFRAC in the DPI is coded differently.)
Netherlands	i.	The term ending in 1973 had a caretaker government for its final year.
	ii.	Term ending in 2003 is FT=1, but it was only one year, so I combine it with the term ending in 2006, which is marked FT=1.
New Zealand	i.	In 1989, one year before the term that ended in 1990, New Zealand changed the start of its fiscal calendar, from April to July.
	ii.	GFRAG=0 for 1994-1996. (GOVFRAC in the DPI is coded differently.)
Slovenia	i.	Late-2011 elections introduced a center-right government, but it collapsed after a year. A center-left government was introduced but it dissolved after a year, and new elections were held in 2014. I code the term ending 2014 as FT=1 and LEFT=0.
	ii.	LEFT=1 for the term ending in 2018. (EXECRLC in the DPI has missing data.)
Spain		No coding notes.

Sweden		No coding notes.
United Kingdom	i.	Two elections were held in 1974.
	ii.	GFRAG=0 for 2016-17. (GOVFRAC in the DPI is coded differently.)
	iii.	I use 2019 as a term-ending year despite the late-year (November) election. The exception allows another observation to enter the dataset.
Uruguay	i.	I use 2019 as a term-ending year despite the late-year (October) election. The exception allows another observation to enter the dataset.

Appendix C: Regression models and serial correlation

As noted in the text, I favor the error-correction (EC) model over the first difference (FD) model because it able to limit bias to serial correlation via the inclusion of lagged values of the independent and dependent variables (in levels format). However, some serial correlation may occur with any statistical model, given the variety of factors that can influence (short-run or long-run) debt trajectories. Also, there *should* be SC in my economic models (Table 3). My theory anticipates interterm dynamics that relate to turnover and tenure, so the exclusion of the political variables should result in some correlation among the errors of adjacent terms.

To examine serial correlation and compare alternative regression models, the following table provides the results of eight regressions with three different models: FD, EC (ADL), and EC-LDV2 (ADL-LDV2). The third model is recommended by Beck and Katz (2011) as a simple alternative to the EC/ADL if and when its estimates are characterized by SC. The table uses the D3 series, but similar results obtain with the other debt series variables. The first three regressions include only political variables, the next three include only economic variables, and the final two include both. None of the regressions include veto players interactions, and all use the same observations (N=208). The table shows partial results — the constant term is not shown, and the lags of the independent variables are not shown for the EC and EC-LDV2 models. However, the table does include a test for serial correlation: the p-value on the lag of the residuals in a second-stage regression, in which the residuals are regressed on the lagged residuals plus all of the independent variables in the model. If $p<.05$, then the residuals are significantly predicted by the lagged residuals. (Note that regression 5 appears as regression 3.3 in the main text, albeit with a

slightly different set of observations, because the set used here compares the EC estimates with the EC-LDV2 estimates.)

Note several things about the regressions. First, the estimate on ΔLT changes dramatically from the politics-only models to the last two models, which include the economic variables. The change is not surprising given that economic downturns cause both last terms and debt growth, which strongly suggests that the politics-only models are deficient.

Second, when comparing regressions 1 and 2, and regressions 4 and 5, we observe that the EC model offers a marked improvement over the FD model, as measured by the second-stage SC test. The third thing to note is that although the EC-LDV2 model offers additional improvement when only political variables are used (compare regressions 2 and 3), it does not when the model includes economic variables. Instead, when we compare regressions 5 and 6 and regressions 7 and 8, we observe that neither the R-squareds nor the SC tests improve with the EC-LDV2 model.

Of course, $p>.05$ in the SC test does not strictly imply the absence of serial correlation. Again, regression 5 should be characterized by SC even though $p>.05$ in the test, because the political variables are excluded. Some of that is apparent in Figure 3 in the main text, where there is a positive correlation between the last-term residual and first-term residual for multi-term governments. We can also observe some serial correlation in Figure C1, which plots the residuals by country. The figure shows serial correlation in some countries over some short periods of time, like three or four terms. (See post-2010 Australia, for example.) There is no clear or easy way to deal with that issue, especially because it varies across countries and in duration. Besides, it has already been shown that EC-LDV2 model performs no better than the EC model. So, I employ the latter and suppose that any longer trends do not seriously affect my analysis. That is sensible for a

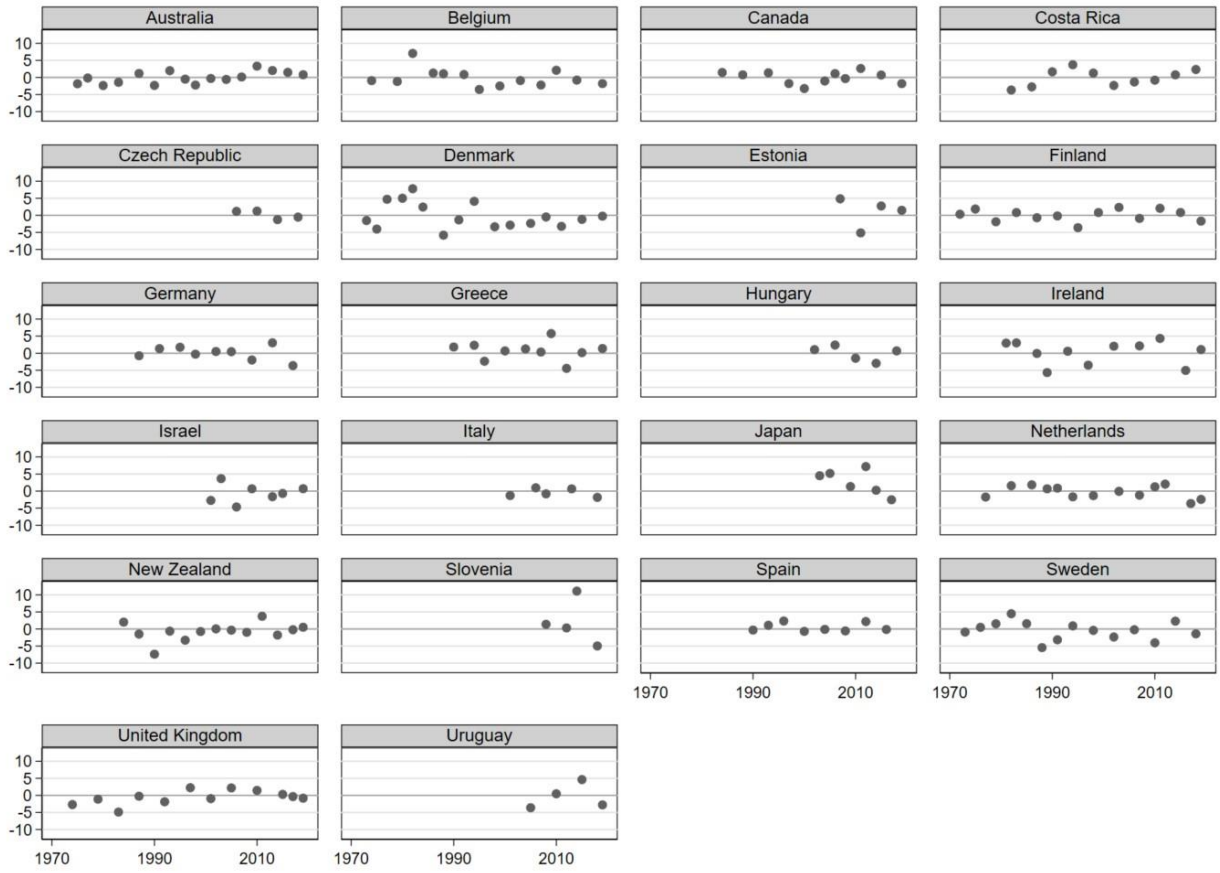
simple reason: the serial correlation is positive, but my theory anticipates cycles. Thus, to the extent that countries exhibit some medium-term stability, with positive serial correlation, the regression estimates will challenge, rather than support, my theory.

Table C1: Model comparisons using D3

	(1) FD	(2) EC	(3) EC-LDV2	(4) FD	(5) EC	(6) EC-LDV2	(7) EC	(8) EC-LDV2
L.D3		0.30*	0.34*		0.34*	0.35*	0.34*	0.35*
		(0.07)	(0.07)		(0.06)	(0.06)	(0.06)	(0.07)
L2.D3			-0.14*			-0.03		-0.04
			(0.07)			(0.05)		(0.05)
Economic variables								
ΔG				-0.71*	-0.70*	-0.71*	-0.67*	-0.69*
				(0.12)	(0.14)	(0.14)	(0.14)	(0.14)
ΔU				0.27*	0.35*	0.33*	0.31*	0.29*
				(0.10)	(0.10)	(0.11)	(0.11)	(0.11)
ΔI				-0.11*	-0.13*	-0.14*	-0.14*	-0.15*
				(0.04)	(0.07)	(0.07)	(0.07)	(0.07)
ΔBCRISIS				0.18*	0.14*	0.14*	0.14*	0.14*
				(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
ΔEURO				-0.77	-1.11	-1.13	-0.82	-0.83
				(0.79)	(0.66)	(0.66)	(0.69)	(0.69)
Political variables								
ΔLT	2.85*	2.61*	2.51*				0.64	0.64
	(0.66)	(0.72)	(0.71)				(0.53)	(0.53)
ΔFT	0.93	1.38	1.21				0.23	0.20
	(0.65)	(0.91)	(0.90)				(0.68)	(0.68)
ΔLEFT	-1.04	-0.71	-0.82				-0.24	-0.27
	(0.55)	(0.57)	(0.57)				(0.41)	(0.41)
ΔNFRULES	-0.09	-0.06	-0.05				-0.11	-0.11
	(0.35)	(0.29)	(0.29)				(0.22)	(0.22)
SC TEST	.00	.06	.81	.00	.81	.64	.50	.98
R^2	.12	.17	.18	.56	.59	.59	.61	.61

Note: The table shows partial OLS estimates of different regression models, all using the same set of observations (N=208). The coefficients on the lagged independent variables in the EV and EC-LDV2 models are not shown, and neither is the constant term. FD signifies first-differenced model. The SC Test row shows the p-value on the lagged residuals in a second stage regression in which the residuals are regressed on the lagged residuals and all the independent variables. * p<.05 (two-tailed).

Figure C1: Residuals from the ADL economic model, by country



Note: The figure shows the residuals from regression 5 in Table C1, which is identical to regression 3.3 in the main text except for it uses a slightly smaller set of observations. The figure shows some positive serial correlation in some countries during some periods of time.

Appendix D: Full results for Table 4

	(4.1) ΔD1	(4.2) ΔD2	(4.3) ΔD3	(4.4) ΔD1	(4.5) ΔD2	(4.6) ΔD3	(4.7) ΔD1	(4.8) ΔD2	(4.9) ΔD3
Short-run political variables									
ΔLT	1.24*	0.75	0.61	2.84*	2.01*	1.70	2.73*	1.86*	1.57
	(0.52)	(0.50)	(0.49)	(0.96)	(0.89)	(1.15)	(1.07)	(0.98)	(1.21)
Δ(LT*NMAJ)				-2.19*	-1.54	-1.41	-3.30*	-2.86*	-3.10*
				(1.09)	(1.08)	(1.32)	(1.42)	(1.63)	(1.61)
Δ(LT*GFRAG)							0.89	0.79	1.13*
							(0.71)	(0.72)	(0.66)
ΔFT	0.10	-0.46	0.19	1.50	-0.06	0.80	1.42	-0.53	0.77
	(0.96)	(0.75)	(0.70)	(1.35)	(1.33)	(1.03)	(1.51)	(1.53)	(1.24)
Δ(FT*NMAJ)				-1.64	-0.49	-0.78	-2.05	-2.19	-2.15
				(1.47)	(1.39)	(1.12)	(1.65)	(1.62)	(1.42)
Δ(FT*GFRAG)							1.04	1.83*	1.57*
							(0.76)	(0.78)	(0.73)
ΔNMAJ				1.52	1.28	0.88	2.50*	2.91*	2.28*
				(0.93)	(0.86)	(0.84)	(1.15)	(1.18)	(1.08)
ΔGFRAG							-1.15*	-1.60*	-1.30*
							(0.63)	(0.70)	(0.63)
ΔLEFT	-0.26	-0.31	-0.05	-0.15	-0.28	-0.02	-0.40	-0.51	-0.21
	(0.51)	(0.46)	(0.40)	(0.51)	(0.48)	(0.42)	(0.52)	(0.57)	(0.46)
ΔNFRULES	-0.44*	-0.21	-0.15	-0.35	-0.20	-0.14	-0.38	-0.30	-0.24
	(0.22)	(0.20)	(0.21)	(0.24)	(0.21)	(0.21)	(0.24)	(0.22)	(0.22)
Short-run economic variables									
ΔGROWTH	-0.77*	-0.80*	-0.61*	-0.77*	-0.80*	-0.60*	-0.60*	-0.72*	-0.55*
	(0.20)	(0.16)	(0.16)	(0.20)	(0.16)	(0.15)	(0.21)	(0.18)	(0.16)
ΔUNEMPLOYMENT	0.15	0.22*	0.38*	0.13	0.22*	0.38*	0.22	0.25*	0.42*
	(0.14)	(0.10)	(0.10)	(0.15)	(0.11)	(0.11)	(0.15)	(0.12)	(0.12)
ΔINFLATION	-0.18	-0.05	-0.08	-0.23	-0.07	-0.08	-0.04	0.03	-0.06
	(0.21)	(0.10)	(0.08)	(0.22)	(0.11)	(0.09)	(0.19)	(0.15)	(0.09)
ΔBANK CRISIS	0.13*	0.15*	0.14*	0.13*	0.15*	0.15*	0.13*	0.16*	0.14*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)
ΔEURO	-1.01*	-0.64	-0.78	-1.01*	-0.69	-0.84*	-1.02	-0.54	-0.81
	(0.54)	(0.52)	(0.48)	(0.57)	(0.54)	(0.49)	(0.63)	(0.60)	(0.55)
Long-run variables									
L.D[†]	-0.71*	-0.69*	-0.70*	-0.73*	-0.69*	-0.70*	-0.70*	-0.69*	-0.69*
	(0.09)	(0.08)	(0.07)	(0.10)	(0.08)	(0.07)	(0.11)	(0.08)	(0.08)
L.LT	1.30	0.43	0.13	2.59	2.31	1.47	2.59	2.88	1.31
	(1.16)	(0.95)	(0.94)	(1.69)	(1.64)	(1.85)	(1.99)	(2.08)	(2.09)
L.(LT*NMAJ)				-1.84	-2.22	-1.70	-2.72	-5.01*	-4.38*
				(1.56)	(1.70)	(1.87)	(2.24)	(2.59)	(2.32)
L.(LT*GFRAG)							-0.24	0.50	1.04
							(1.03)	(1.04)	(1.00)
L.FT	0.05	-0.47	0.07	1.99	0.37	0.64	1.98	0.20	0.59
	(1.01)	(0.69)	(0.66)	(1.59)	(1.53)	(1.47)	(1.75)	(1.66)	(1.66)
L.(FT*NMAJ)				-2.16	-0.89	-0.62	-1.89	-2.42	-1.25
				(1.95)	(1.67)	(1.62)	(2.41)	(2.15)	(2.12)
L.(FT*GFRAG)							0.19	1.08	0.62
							(0.83)	(0.75)	(0.76)
L.NMAJ				1.20	1.00	0.67	2.52*	3.52*	2.28*
				(0.92)	(0.90)	(0.98)	(1.44)	(1.47)	(1.36)
L.GFRAG							-0.75	-1.09*	-0.84*

							(0.53)	(0.51)	(0.50)
L.LEFT	0.11	-0.04	0.14	0.29	0.03	0.22	-0.14	-0.19	-0.04
	(0.57)	(0.54)	(0.49)	(0.60)	(0.58)	(0.53)	(0.66)	(0.61)	(0.56)
L.NFRULES	-0.38*	-0.26*	-0.29*	-0.34*	-0.23	-0.25*	-0.24	-0.20	-0.24
	(0.17)	(0.15)	(0.14)	(0.17)	(0.15)	(0.14)	(0.18)	(0.16)	(0.16)
L.GROWTH	-0.49*	-0.63*	-0.48*	-0.50*	-0.63*	-0.47*	-0.36	-0.62*	-0.42*
	(0.26)	(0.20)	(0.18)	(0.26)	(0.20)	(0.18)	(0.28)	(0.22)	(0.20)
L.UNEMPLOYMENT	-0.03	0.02	0.03	-0.03	0.02	0.04	-0.04	0.02	0.03
	(0.07)	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)
L.INFLATION	0.06	0.09	-0.00	0.03	0.08	-0.00	0.11	0.13	0.00
	(0.10)	(0.08)	(0.06)	(0.11)	(0.08)	(0.06)	(0.10)	(0.08)	(0.06)
L.BCRISIS	0.17*	0.12*	0.08*	0.18*	0.12*	0.09*	0.17*	0.11*	0.08
	(0.06)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)
L.EURO	0.29	0.12	0.21	0.23	0.03	0.11	0.20	-0.04	0.09
	(0.42)	(0.36)	(0.37)	(0.43)	(0.37)	(0.38)	(0.42)	(0.39)	(0.41)
Constant	1.76	2.03*	1.70*	0.69	1.08	1.01	0.28	0.80	1.18
	(1.23)	(1.00)	(0.88)	(1.47)	(1.25)	(1.19)	(1.51)	(1.41)	(1.29)
Number of terms	133	176	217	133	176	217	128	164	200
R^2	0.72	0.77	0.73	0.73	0.77	0.73	0.74	0.79	0.75

Note: The table shows OLS estimates of the EC model with each debt series. Robust standard errors in parentheses. * p<.05 (one-tailed). Δ signifies term-to-term difference. L signifies lag. † D1, D2, or D3.

Appendix E: Additional analysis and robustness checks

Table E1 provides statistics to accompany Figures 1 and 2 in the text. The first three columns pertain to the last-term effect, with column C listing the difference between the median LT=1 residual (column A) and the median FT=LT=0 residual (column B). The first three rows mirror what is shown in the first column of Figure 1: Last-term governments exhibit greater average debt growth than other non-first-term governments. The subsequent rows of the table subdivide the data by MAJ. Notice that the difference in group medians (in column C) is much larger for majority governments (rows 4–6) than for non-majority governments (rows 7–9). That difference in differences is largely due to last-term governments (column A), which is consistent with the graphs in the second column of Figure 1 and with the moderation hypothesis (H-LT-VP).

The remaining columns in Table E1 test first-term volatility and its moderation by non-majority government. Again, H-FTV expects the distributions of FT=1 residuals to be wider than the distributions of FT=0 residuals. Columns D and E list the standard deviations for those two groups, and a positive difference in column F indicates that the standard deviation is larger for the FT=1 group. That occurs for each regression sample (rows 1–3). The subsequent rows (4–9) show that the differences in standard deviations between the groups are more pronounced among majority governments than non-majority governments, as H-FTV-VP anticipates and the second column of Figure 2 illustrates.

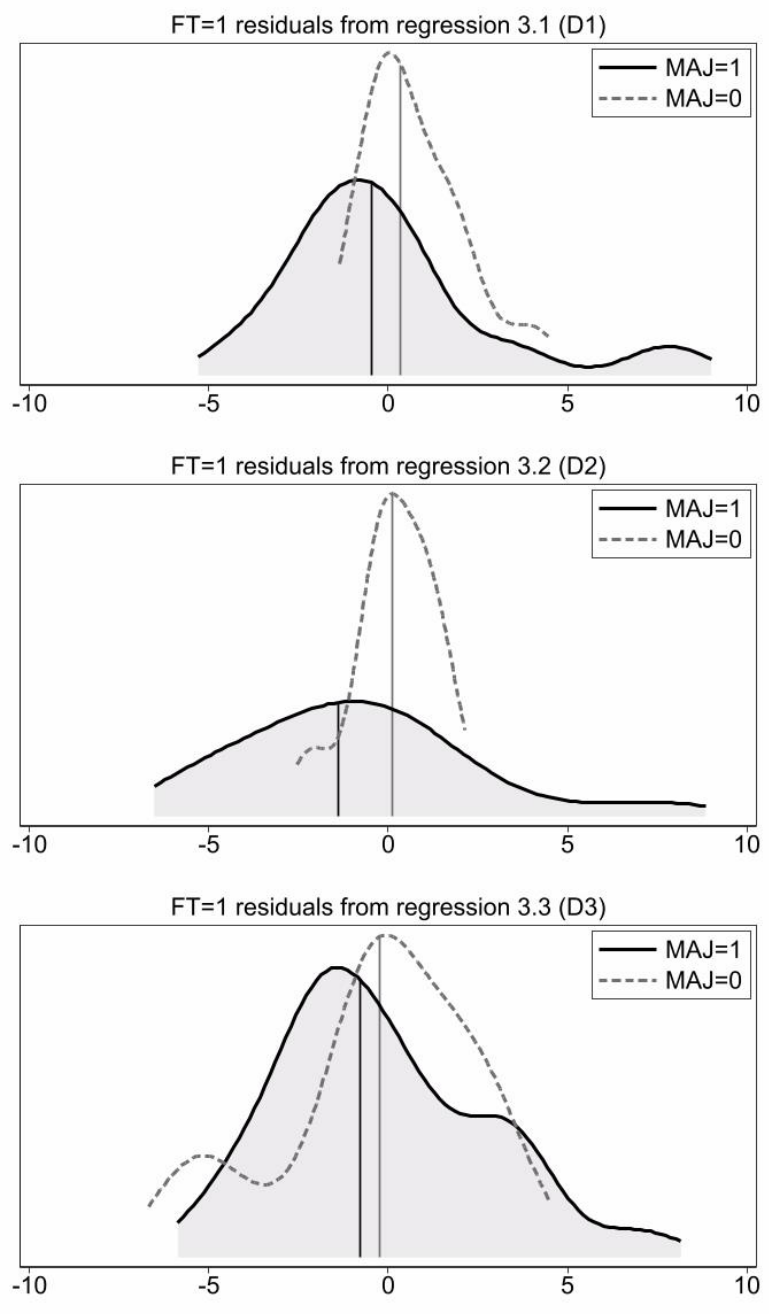
Following Table E1, Figure E1 and Tables E2 and E3 provide additional analyses and robustness checks. Each is explained in its note.

Table E1: Residual debt growth by term and majority government

Row	Regression	Last-term effect (H-LT): Is average debt growth in last terms greater than average debt growth in other non-first terms? (A) LT=1 median	(B) FT=LT=0 median	(C) A – B *Positive expected*	First-term volatility (H-FTV): Are debt trajectories more varied in first terms? (D) FT=1 standard deviation	(E) FT=0 standard deviation	(F) D – E *Positive expected*
All governments							
1	3.1 D1	1.03 (33)	-0.53 (45)	1.56	2.73 (55)	2.04 (78)	0.69
2	3.2 D2	0.80 (43)	0.15 (60)	0.65	2.67 (73)	2.32 (103)	0.35
3	3.3 D3	0.54 (54)	-0.20 (70)	0.74	2.70 (93)	2.58 (124)	0.12
Majority governments							
4	3.1 D1	1.33 (10)	-1.02 (10)	2.35	3.00 (13)	2.16 (20)	0.84
5	3.2 D2	1.28 (11)	-0.41 (10)	1.69	3.27 (16)	1.88 (21)	1.39
6	3.3 D3	1.47 (14)	-0.24 (13)	1.71	2.86 (25)	2.52 (27)	0.34
Non-majority governments							
7	3.1 D1	0.31 (23)	-0.24 (35)	0.55	2.68 (42)	2.02 (58)	0.66
8	3.2 D2	0.55 (32)	0.24 (50)	0.31	2.50 (57)	2.43 (82)	0.07
9	3.3 D3	0.21 (40)	0.20 (57)	0.01	2.66 (68)	2.61 (97)	0.05

Note: Cells show summary and test statistics for groups of residuals from the economic models in Table 3. In parentheses is the number of observations.

Figure E1: First terms and majority government, in panels with majority government



Note: This figure is identical to the second column of Figure 2 in the main text except that panels that lack instances of majority government have been removed to provide a more focused look at the difference that majority government makes. The result is a greater disparity between the MAJ=1 and MAJ=0 distributions, and the differences are especially large in the bottom tails, which is again consistent with the idea that non-majority government frustrates fiscal consolidations. Each panel shows kernel distributions of debt growth residuals from regressions in Table 3.

Table E2: Estimates with the ADL-LDV2 model

	(E2.1)	(E2.2)	(E2.3)	(E2.4)	(E2.5)	(E2.6)
	ΔD1	ΔD2	ΔD3	ΔD1	ΔD2	ΔD3
ΔLT	3.50*	1.96*	1.58	3.68*	1.98*	1.49
	(1.23)	(1.00)	(1.14)	(1.34)	(1.05)	(1.19)
Δ(LT*NMAJ)	-2.94*	-1.35	-1.23	-4.13*	-2.89*	-2.69
	(1.37)	(1.19)	(1.33)	(1.56)	(1.72)	(1.64)
Δ(LT*GFRAG)				0.82	0.84	0.98
				(0.78)	(0.75)	(0.70)
ΔFT	1.68	-0.24	0.44	1.56	-0.70	0.45
	(1.55)	(1.46)	(1.01)	(1.75)	(1.62)	(1.25)
Δ(FT*NMAJ)	-1.98	-0.02	-0.36	-2.85	-2.07	-1.75
	(1.69)	(1.53)	(1.12)	(1.93)	(1.79)	(1.49)
Δ(FT*GFRAG)				1.08	1.91*	1.47*
				(0.88)	(0.85)	(0.78)
ΔNMAJ	1.73*	1.07	0.94	2.67*	2.90*	2.28*
	(1.02)	(0.92)	(0.84)	(1.27)	(1.21)	(1.11)
ΔGFRAG				-0.82	-1.75*	-1.24*
				(0.78)	(0.78)	(0.68)
ΔLEFT	-0.20	-0.36	-0.24	-0.11	-0.54	-0.36
	(0.56)	(0.52)	(0.43)	(0.63)	(0.62)	(0.49)
ΔNFRULES	-0.38	-0.23	-0.10	-0.34	-0.31	-0.19
	(0.25)	(0.22)	(0.21)	(0.27)	(0.23)	(0.22)
N	115	163	208	111	155	192
R^2	0.74	0.78	0.74	0.75	0.79	0.75

Note: This table replicates the regressions 4–9 in Table 4 in the main text using the ADL-LDV2/EC-LDV2 model in place of the ADL/EC model. It shows that the last-term results are largely unchanged with the modifications. Actually, in most of the regressions, the LT effect is stronger and more significant. Each column shows partial OLS estimates of the ADL-LDV2/EC-LDV2 model, and each regression includes the economic variables that are in Table 3. Robust standard errors in parentheses. * p<.05 (one-tailed).

Table E3: Estimates with fixed-effects and first-order autocorrelation

	(E3.1)	(E3.2)	(E3.3)	(E3.4)	(E3.5)	(E3.6)
	D1	D2	D3	D1	D2	D3
LT	2.42*	1.38	1.89*	2.36*	1.16	2.19*
	(1.09)	(1.11)	(1.04)	(1.06)	(1.10)	(1.06)
LT*NMAJ	-1.51	-0.76	-1.41	-2.26	-1.81	-2.53
	(1.33)	(1.28)	(1.21)	(1.66)	(1.70)	(1.59)
LT*GFRAG				0.67	0.87	0.66
				(0.81)	(0.81)	(0.76)
FT	1.63	0.05	1.37	1.56	-0.17	1.31
	(1.01)	(1.02)	(0.94)	(0.98)	(1.02)	(0.96)
FT*NMAJ	-1.23	-0.58	-1.63	-2.62*	-3.20*	-3.02*
	(1.21)	(1.16)	(1.07)	(1.55)	(1.54)	(1.52)
FT*GFRAG				1.14	1.99*	1.33*
				(0.77)	(0.75)	(0.74)
NMAJ	2.17*	1.50	1.53	2.92*	3.26*	3.22*
	(1.02)	(1.09)	(1.01)	(1.21)	(1.33)	(1.15)
GFRAG				-0.82	-2.01*	-0.76
				(0.81)	(0.81)	(0.78)
LEFT	-0.13	-0.29	0.05	-0.44	-0.67	-0.17
	(0.47)	(0.46)	(0.43)	(0.50)	(0.50)	(0.47)
NFRULES	-0.31	-0.32	-0.36*	-0.22	-0.32	-0.28
	(0.23)	(0.20)	(0.20)	(0.24)	(0.21)	(0.24)
GROWTH	-0.95*	-0.77*	-0.78*	-0.86*	-0.66*	-0.91*
	(0.15)	(0.14)	(0.14)	(0.15)	(0.15)	(0.14)
UNEMPLOYMENT	0.09	0.27*	0.22*	0.12	0.30*	0.06
	(0.10)	(0.10)	(0.09)	(0.11)	(0.10)	(0.10)
INFLATION	-0.09	0.15	-0.07	-0.06	0.25*	-0.14
	(0.16)	(0.12)	(0.07)	(0.17)	(0.13)	(0.14)
BANK CRISIS	0.12*	0.17*	0.16*	0.12*	0.18*	0.17*
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
EURO	-0.62	-0.31	-1.02*	-0.92	-0.33	-1.05*
	(0.56)	(0.54)	(0.54)	(0.60)	(0.56)	(0.57)
Constant	1.31	-0.22	1.04	1.26	0.27	2.09
	(1.69)	(1.22)	(1.10)	(1.60)	(1.23)	(1.60)
N	133	176	217	129	165	142
R^2 (within)	0.58	0.62	0.54	0.60	0.63	0.69

Notes: This table replicates regressions 4–9 in Table 4 using a fixed-effects model with first-order serial correlation. The assumption of first-order autocorrelation is sensible for my data, given that the observations are whole governmental terms and that governments can adjust fiscal trajectories in each term. The OLS estimates are very similar to those that are in Table 4 in the main text. The main difference is on the estimated coefficient on LT: in the main text it was significant with the D2 series but not with the D3 series, and here the reverse occurs. Standard errors in parentheses. $p<.05$ (one-tailed).

Appendix F: Early elections and term duration

The data analysis in the main text does not account for term duration, including variation in the number of years per term or the difference between full-term governments and those that are shortened by early elections. Although these phenomena are unlikely to seriously affect my analysis (because the dependent variables are annualized), here I consider the possibility. And I consider a few related questions: How might term duration and early elections relate to term type (e.g., first term, last term), and could such a relationship explain the fiscal patterns that are documented in the text? And, how might the fiscal patterns relate to the greater ability of majority governments (versus non-majority governments) to strategically time their elections? (I thank a reviewer for emphasizing the latter question and the broader issue of strategic electoral timing.)

As a first step in this exercise, I re-estimate regressions 4.4 – 4.6 with one of two additional controls: NYEARS, the number of years in a term, and SHORT, a dummy equal to one if the term is shortened by early elections. The results are provided in Table F1, and they show no substantive change in the main coefficients of interest (i.e., LT, FT, and their interactions with NMAJ). Thus, questions about whether the main-text results could be an artifact of term duration or shortened terms can be answered in the negative. But notice also that annualized debt growth is related to the new variables — negatively in the case of NYEARS, and positively with SHORT. What might explain these coefficients? One possibility is that governments that pursue austerity are averse to early elections, perhaps because they introduce reforms early in their terms and they want to delay elections as long as possible so (a) voters' initial shock to austerity has faded, (b) contemporaneous economic problems, including short-term contractions that follow fiscal consolidations, have dissipated, and/or (c) there may be time to pivot back to expansionism prior to the election. If there is such a link between austerity and *full*-term government, then SHORT is also likely to inversely

correlate with first-term government, because they are more likely than non-first-term governments to introduce austerity programs.

Table F1: Accounting for term length (years) and early elections

	(1) D.d1	(2) D.d2	(3) D.d3	(4) D.d1	(5) D.d2	(6) D.d3
ΔNYEARS	-0.25	-0.53*	-0.47*			
	(0.36)	(0.28)	(0.28)			
ΔSHORT				0.39	0.63	0.89*
				(0.55)	(0.48)	(0.43)
ΔLT	2.96*	2.22*	1.82	2.70*	1.83*	1.78
	(0.96)	(0.84)	(1.19)	(1.04)	(0.92)	(1.19)
Δ(LT*NMAJ)	-2.45*	-1.91*	-1.66	-2.26*	-1.40	-1.58
	(1.08)	(1.03)	(1.36)	(1.12)	(1.14)	(1.36)
ΔFT	1.36	-0.39	0.55	1.24	-0.34	0.60
	(1.39)	(1.36)	(1.07)	(1.38)	(1.36)	(1.06)
Δ(FT*NMAJ)	-1.47	-0.14	-0.60	-1.26	0.22	-0.36
	(1.62)	(1.43)	(1.16)	(1.52)	(1.42)	(1.16)
ΔNMAJ	1.59*	1.27	0.91	1.47*	1.23	0.93
	(0.95)	(0.81)	(0.83)	(0.88)	(0.79)	(0.82)
ΔLEFT	-0.12	-0.28	-0.03	-0.09	-0.26	-0.02
	(0.49)	(0.47)	(0.42)	(0.51)	(0.47)	(0.42)
ΔNFRULES	-0.36	-0.13	-0.07	-0.42*	-0.26	-0.12
	(0.24)	(0.21)	(0.22)	(0.22)	(0.20)	(0.22)
Number of terms	133	176	217	133	176	217
R^2	0.73	0.78	0.74	0.74	0.79	0.74

Notes: This table replicates regressions 4–6 in Table 4 with the addition of NYEARS or SHORT. The coefficients on the economic variables, the long-run components, and the constant term are not shown. Standard errors in parentheses. * p<.10. Substantively, the results are no different than those reported in the main text.

The first regression in Table F2 tests this idea. It shows results of a fixed-effects logit model of SHORT regressed on FT and LT, using the data from parliamentary systems in the D3 sample. The results indicate that full-term government is indeed associated with first-term government (relative to the FT=LT=0 baseline). They also show a similar association between full-term government and last-term government, which may be because governments prefer to delay elections as long as possible whenever they anticipate a high probability of defeat. Neither contrast

with the baseline rate (i.e., the prevalence of SHORT=1 terms among FT=LT=0 terms) is statistically significant, though that is not surprising given that the excluded category is heterogenous and undersized. Of course, first-term governments are also heterogeneous; some pursue trajectories other than austerity, and those first-term governments may be more inclined toward early elections. Also, some first-term governments may be coalitions that are incapable of both austerity and longevity. A similar point applies to last-term governments: Although some may have the will and ability to complete their terms, others may be incapable of holding together that long.

Regressions two and three in Table F2 examine these ideas. Regression 2 includes NEGD, a dummy equal to one if D3<0 (i.e., debt reduction), and its interaction with FT and LT. The estimates indicate: (a) among all three term types, debt reduction is associated with full-term government, not short-term government, and (b) among governments that increase the debt (NEGD=0), full-term government is most strongly associated with last-term government. Regression 3 replaces the fiscal variable with the majority government dummy, and it shows (a) majority governments are less strongly associated with early elections than non-majority governments, (b) among majority governments (MAJ=1), early elections are most strongly associated with first-term government and least strongly associated with last-term government, and (c) the opposite pattern characterizes non-majority governments — i.e., early elections are most strongly associated with last-term government and least strongly associated with first-term government. These results are consistent with the following ideas, all of which are compatible with the analysis in the main text: (1) majority governments are more likely to call early elections when they anticipate victory (and more likely to avoid early elections when they anticipate defeat), (2) non-majority governments are less likely to be able to complete their terms, and early dissolution

is associated with their electoral defeat, and (3) governments that introduce fiscal consolidations are less likely to call early elections than governments that chart other fiscal trajectories.

Table F2: Correlates of shortened terms (early elections)

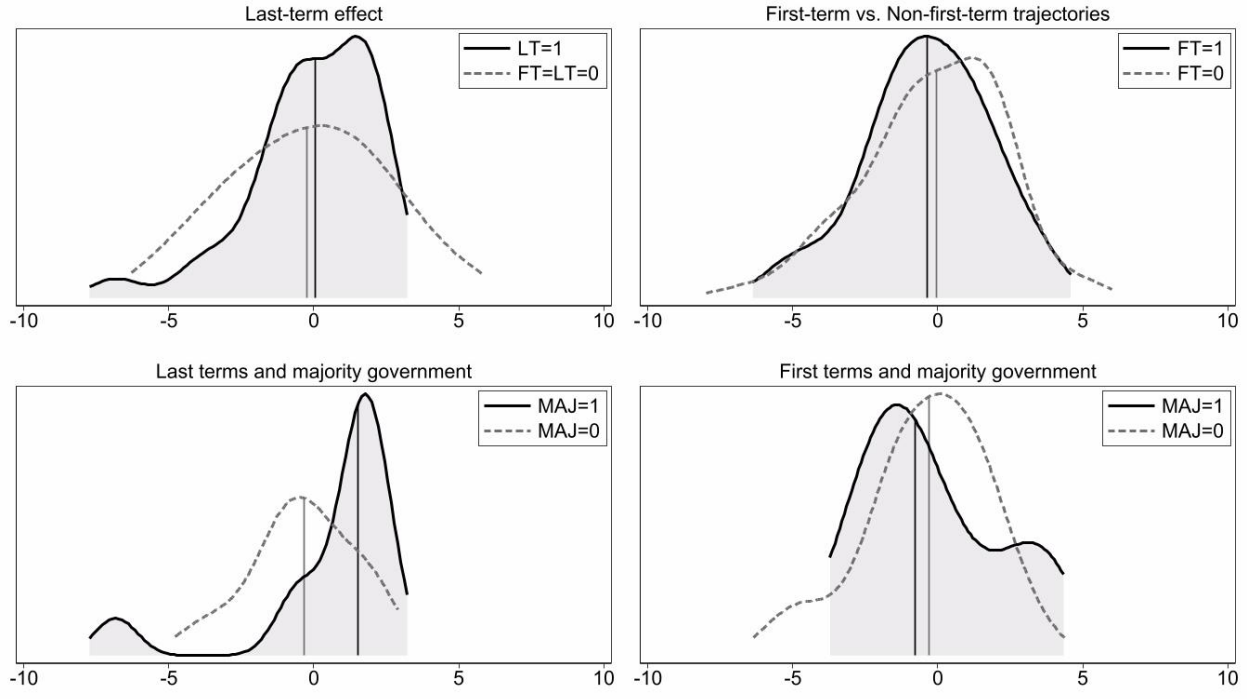
	(1)	(2)	(3)
FT	-0.27	-0.13	-1.03*
	(0.44)	(0.63)	(0.54)
NEGD		-0.55	
		(0.68)	
FT*NEGD		-0.38	
		(0.84)	
LT	-0.24	-0.33	0.36
	(0.49)	(0.66)	(0.62)
LT*NEGD		-0.14	
		(1.01)	
MAJ			-0.38
			(0.99)
LT*MAJ			-2.48*
			(1.41)
FT*MAJ			3.17*
			(1.27)

Notes: Fixed-effects logit regressions using SHORT, a dummy if a parliamentary term is shortened by at least a year due to early elections. The data are terms in parliamentary systems in the D3 series. N=180, with 16 panels.

Figure F1 provides one more check that the results in the main text are not an artifact of the distribution of full- and shortened-terms across first- and last-term governments. It shows kernel densities of various groupings of the residuals from regression 3.3 with all SHORT=1 terms excluded. The figure shows that debt growth is marginally greater among LT=1 governments than FT=LT=0 governments (top-left panel); and it shows a marked difference among last-term governments by MAJ, with last-term majority governments exhibiting more debt growth than last-term non-majority governments (bottom-left panel). The figure also shows a discrepancy between FT=1 and FT=0 governments that is consistent with H-FTV (top-right panel). And when the first-

term data are differentiated by MAJ (bottom-right panel), the data continue to support the veto players hypothesis: majority governments exhibit a wider range of debt-growth trajectories, and especially on the end of spectrum that is associated with austerity programs.

Figure F1: Debt growth residuals for full-term governments, by term type



Note: The figure shows kernel densities of residuals from full-term governments in regression 3.3 (i.e., terms shortened by early elections have been excluded). The patterns are consistent with Figures 1 and 2 in the main text and with the main hypotheses.