IMF Working Paper

Governments and Promised Fiscal Consolidations: Do They Mean What They Say?

by Sanjeev Gupta, Joao Tovar Jalles, Carlos Mulas-Granados and Michela Schena

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Abstract

This paper analyses the causes and consequences of fiscal consolidation promise gaps, defined as the distance between planned fiscal adjustments and actual consolidations. Using 74 consolidation episodes derived from the narrative approach in 17 advanced economies during 1978 – 2015, the paper shows that promise gaps were sizeable (about 0.3 percent of GDP per year, or 1.1 percent of GDP during an average fiscal adjustment episode). Both economic and political factors explain the gaps: for example, greater electoral proximity, stronger political cohesion and higher accountability were all associated with smaller promise gaps. Finally, governments which delivered on their fiscal consolidation plans were rewarded by financial markets and not penalized by voters.

Contents

I. INTRODUCTION

There are several reasons why fiscal outcomes may deviate from plans. First, the macroeconomic scenario may unfold differently from that foreseen in the plan (Frankel, 2011). Second, the design of fiscal rules may be such that their adherence requires fiscal discipline in terms of plans but not in terms of outcomes. Finally, policy makers may find it difficult to implement fiscal plans because of opposition from vested interest groups (Beetsma and others, 2009 and Von Hagen, 2010). In fact, political factors can be particularly important in explaining fiscal outcomes when elections are approaching and/or if political fragmentation is large (Perotti, 1998; Von Hagen, Hallet and Strauch, 2001; Perotti and Kontopoulus, 2002; Protrafke, 2011).[2]

We label the difference between budget plans and budget implementation as the promise gap. The size of promise gaps has a bearing on credibility and democratic accountability of elected governments. For example, large and systematic fiscal promise gaps may increase uncertainty for economic agents and lower the credibility of the government, thus increasing long-term interest rates on government bonds (World Bank, 2005; Baldacci and Kumar, 2010; Beetsma and others, 2015). In addition, when governments do not deliver on their promises, the quality of democracy may suffer (Przeworski and others, 1999). In a fully functioning democracy with rational forward-looking voters and politicians, the electorate expects governments to be responsive to their economic and fiscal preferences.

In this paper, we study two questions: First, what explains fiscal consolidation promise gaps? Second, what is the reaction of markets and voters to promise gaps incurred by incumbent parties? In our view, these two issues are interrelated. Parties in government are motivated by a specific policy agenda and by their willingness to remain in office (Muller and Strom, 1999)[3]. When governments deliver on their promised policies they are likely to be re-elected. If they fall short on these promises, they could be penalized by voters, unless this deviation benefits the electorate in the short-run. At the same time, financial markets monitor these actions and if they see politically-motivated deviations from promised fiscal discipline they react negatively.

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[2] In addition to elections and political fragmentation, fiscal consolidations could be influenced by the government's ideology. While ideology is not relevant for explaining the size of consolidation promise gaps in our sample, it has been shown to affect the composition of the budget. A number of scholars (Boix, 1997; Franzese, 2002; Mulas-Granados, 2003; 2006; Tavares, 2004; Konishi, 2006; Mierau and others, 2007; Angelopoulus and others, 2012) have shown that left-wing governments may prefer revenue-based adjustments to ensure financing for the welfare state, while right-wing governments may opt for expenditure-based ones.

[3] According to Muller and Strom (1999) political parties can be guided by two objectives: the pursuit of policy and/or the pursuit of office. Pure policy-seekers pursue the maximum leverage over public policy outcomes; and pure office seekers strive to win and retain office as an end in itself or for the perks it affords. Normally, parties in government try to maximize both objectives at the same time, because staying in office guarantees further influence on the policy agenda, and delivering on the policies preferred by citizens typically increases the chances of remaining in office.

Because these questions are intertwined, we tackled them empirically in two steps. For this purpose, we create a new database of fiscal consolidations that compares narrative budget plans with actual fiscal performance in 17 OECD countries during 1978-2015. [4] We find that fiscal promise gaps were sizeable (about 0.3 percent of GDP per year, or 1.1 percent of GDP over a typical 3-year adjustment episode). Economic factors and forecast errors were important in explaining the differences between budget plans and fiscal outcomes, but political factors also played a role: greater electoral proximity, stronger political cohesion and higher accountability were all associated with smaller promise gaps. Finally, governments which delivered on their promised fiscal consolidation plans were rewarded by financial markets and not penalized by voters.

Our paper makes three contributions to the existing literature: first, it updates the narrative database from Devries and others (2011) and Alesina and others (2015); second, it considers simultaneously the role of three political factors (electoral proximity, political strength and institutional accountability) in explaining consolidation promise gaps; and third, it looks at the consequences of promise gaps on market sentiment and governments' popularity among the electorate.

The remainder of the paper is organized as follows. Section 2 briefly discusses the data and the definition of our dependent variable. Section 3 explores the economic and political causes of consolidation promise gaps. Section 4 looks into the reaction of markets and the electorate to these gaps, and the last section concludes and presents policy implications.

II. DEFINING FISCAL PROMISE GAPS

A. Identifying Fiscal Consolidation Episodes

The literature on fiscal adjustment episodes is vast and has for a long time relied on the positive approach, by which fiscal consolidations are associated with large changes in the cyclically adjusted primary balance (CAPB).[5] More recently, scholars have identified consolidation episodes following a narrative approach, which relies on approved budget plans and historical accounts of past fiscal policy. Such approach was first popularized by Romer and Romer (2010) and Devries and others (2011), who subsequently made publicly available a list of fiscal consolidation episodes for 17 advanced economies

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[4] For a recent discussion of the alternative ways to identify fiscal consolidations using the narrative and positive approaches, see Afonso and Jalles (2014) and Escolano and others (2014).

[5] Some caveats surrounding traditional CAPB approach have been highlighted recently (see Afonso and Jalles, 2014). In particular, the CAPB approach could bias empirical estimates towards finding evidence of non-Keynesian effects. Many non-policy factors influence the CAPB and can lead to erroneous conclusions regarding fiscal policy changes. For example, a stock price boom raises the CAPB by increasing capital gains tax revenue, and tends to coincide with an expansion in private demand (Morris and Schuknecht, 2007). Even when the CAPB accurately measures fiscal actions, these could include discretionary responses to economic developments.

between 1978 and 2009.[6] More recently, Alesina and others (2015) updated that database for a subset of European Countries until 2012. In this paper, we update the database for all the 17 countries included in Devries and others (2011). We followed the same approach, and relied on historical description surrounding changes in budget deficits every year as recorded in national budget laws, European Commission's Stability and Growth Programs and OECD's country reviews.[7]

In our sample we identify 73 episodes of fiscal consolidations. Table 1 summarizes these episodes by country. The number of fiscal contractions per country ranges from two in the cases of Canada or Finland, to seven in France or the United States. The size of fiscal consolidation episodes varies from 0.04 percent of GDP to 4.74 percent of GDP, with an average size of fiscal adjustment equal to 1.06 percent of GDP. The average duration of the reported fiscal episodes is 3.3 years, with the shortest duration corresponding to one year (21 episodes) and the longest duration corresponding to 14 years (Canada).

Table 1. Fiscal Consolidation Years, 17 Advanced Economies between 1978-2015

Country	Fiscal Consolidation - Sample Years
Australia	1985-88, 1994-99, 2010-12, 2014-15
Austria	1980-81, 1984, 1996-97, 2001-02, 2011-12, 2015
Belgium	1982-85, 1987, 1990, 1992-94, 1996-97, 2010-15
Canada	1984-97, 2010-15
Denmark	1983-86, 1995, 2012
Finland	1992-97, 2011
France	1979, 1987, 1989, 1991-92, 1995-97, 1999-2000, 2011-15
Germany	1982-1984, 1991-95, 1997-2000, 2003-04, 2006-07, 2011-12
Ireland	1982-88, 2009-15
Italy	1991-98, 2004-07, 2010-15
Japan	1997-98, 2003-07
Netherlands	1981-88, 1991-93, 2004-05, 2011-13, 2015
Portugal	1983, 2000, 2002-03, 2005-07, 2010-15
Spain	1983-84, 1989-90, 1992-97, 2009-15
Sweden	1984, 1993-98, 2011, 2015
United Kingdom	1979-82, 1994-99, 2010, 2012, 2014-15
United States	1978, 1980-81, 1985-86, 1988, 1990-98, 2011, 2013-15

Source: Author's calculations. See Appendix 1 for details.

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[6] Note that the narrative approach used by Devries and others (2011) uses historical accounts from OECD and EU's annual reports describing what happened to the budget deficit in a particular country/period but they do not go into the details of policy makers' intentions, discussions and congressional records. This differs from the approach used in Romer and Romer (2010), who identify exogenous tax policy changes by carefully analysing US congressional documents.

[7] A description of this update for each country and consolidation year is available in the Appendix 1.

Figures 1 and 2 show the distribution of fiscal consolidation episodes over time as well as their distribution by size (in percent of GDP). Most episodes took place in the mid-1980s, the late 1990s (led by European countries' need to qualify for the single currency union) and between 2010 and 2015, in the aftermath of the recent financial crisis (following the cross-country coordinated fiscal stimuli that took place). In more than 35 percent of fiscal adjustment episodes, the size was between 0 and 0.5 percent of GDP. Only in 5 percent of cases, the adjustment was larger than 3 percent of GDP.

Figure 1. Absolute Frequency of Fiscal Consolidation Episodes Over Time, 1978-2015
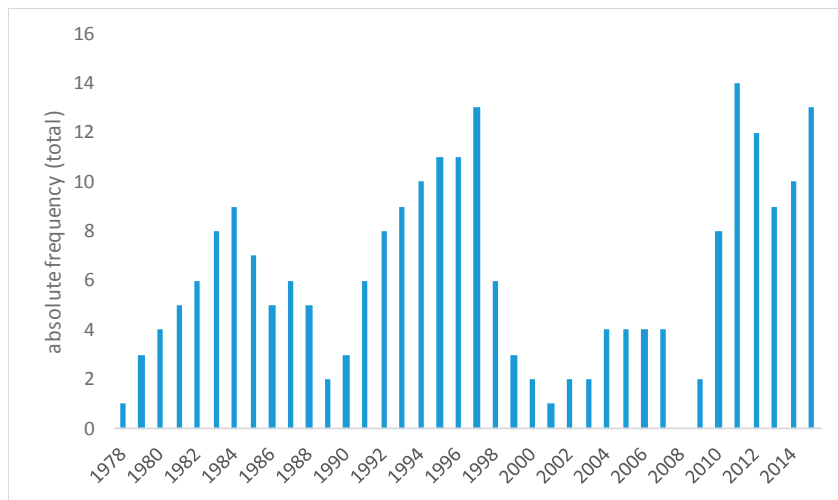
Figure 2. Relative Frequency of Fiscal Consolidation Episodes by Size of Consolidation (in percent)
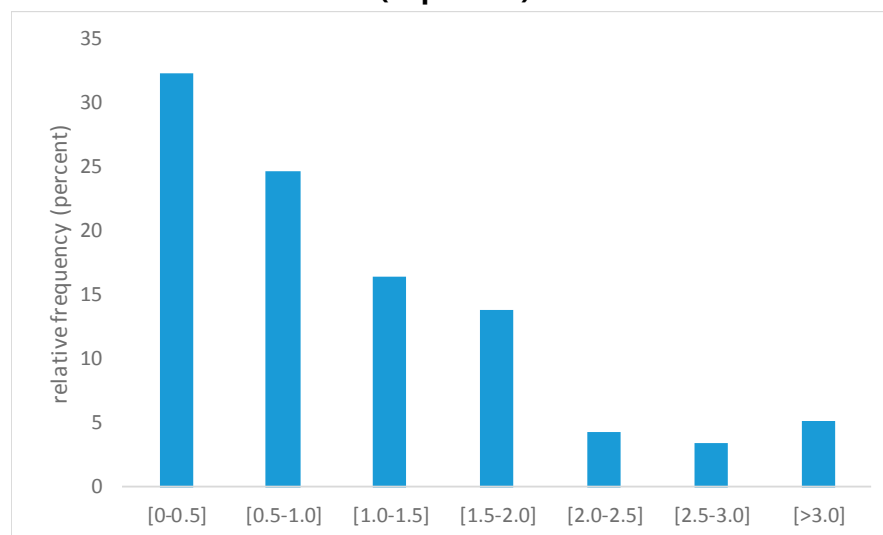
B. Measuring Consolidation Promise Gaps

We define *consolidation promise gaps* (CPG) as the difference between the size of planned fiscal adjustment (PFA), as measured by the narrative approach, and the size of the realized fiscal adjustment (RFA), as measured by changes in the budget balance (all expressed in percent of GDP).[8]

$$CPG = PFA - RFA$$

The promise gaps can have both signs. Governments can deliver less fiscal adjustment than initially planned (positive promise gap) or they can implement a larger adjustment than initially foreseen (negative promise gap). Using data at the general government level, Figure 3 shows the average size of promise gaps by country.[9] Finland, Spain, Ireland and Italy are the countries with the largest positive promise gaps, while Denmark, the UK, Germany, Canada and Sweden are the countries which managed to deliver on average larger fiscal consolidations than those initially planned.

In Figure 4a, we show the promise gap using the primary balance to correct for the effect of interest payments. Figure 4b, shows the promise gap using the structural balance which allows us to take into account the effects stemming from the economic cycle (e.g. Finland) and/or one-off measures (e.g. Ireland's 2009 banking sector capitalization) that would otherwise distort the overall picture. While the ordering of the different countries varies, the average promise gaps remains the same (0.3 percent of GDP) under all measures.

Figure 3. Size of Consolidation Promise Gaps (baseline), by country
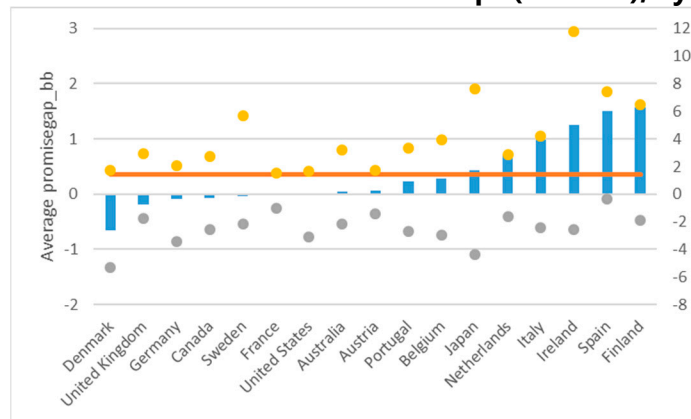
Note: "Size" measured in percent of GDP.

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[8] For robustness purposes, we also defined our dependent variable using changes in the cyclically adjusted budget balance or changes in the primary balance and results are qualitatively similar. These are available upon request from the authors.

[9] The use of general government data allows us to compare countries with different degrees of fiscal decentralization. In some countries, like Canada or Spain, regional government finances are sizeable and their fiscal accounts are not always correlated with those of central government.

Figure 4. Size of Consolidation Promise Gaps (alternatives), by Country

<table>
<tr><td align="center">**4.a Using primary balance**</td><td align="center">**4.b Using structural balance**</td></tr>
</table>
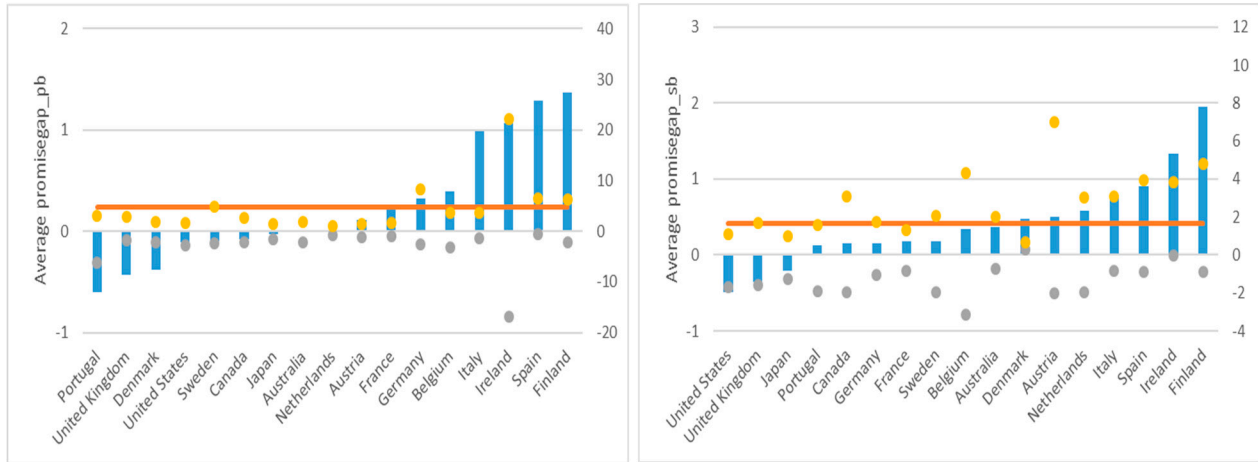
Note: "Size" measured in percent of GDP. Yellow dots denote the country-specific maximum; grey dots denote the country-specific minimum.

III.   THE POLITICAL AND ECONOMIC DETERMINANTS OF CONSOLIDATION PROMISE GAPS

A.   Economic Factors: Stylized Facts

In order to explain the size of consolidation promise gaps we look at the role of initial fiscal conditions, such as the initial level of debt-to-GDP ratio and the initial level of fiscal sustainability.[10] We also look at the size of the output gap and at growth forecast errors.[11][12] Figure 5 plots average promise gaps for high and low levels of different variables of interest.[13]

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[10] The sustainability factor is defined as difference between the actual primary balance and the debt-stabilizing primary balance (see Escolano and others, 2014 for further details). Higher values of the initial sustainability factor imply that countries have primary balances close to (or above) the debt-stabilizing optimum level, and therefore they are not under fiscal stress.

[11] Output gap is calculated as actual minus potential GDP using data from the WEO database.

[12] We use the 3, 9, 15 and 21 months GDP forecast errors from WEO database. Forecast errors are defined as the difference between the actual real GDP growth and the forecasted real GDP growth. A large (positive) forecast error implies that GDP grew more than predicted. All forecast error variables yield qualitatively similar results; hence, below we present solely estimates using one, the 9 months ahead variant.

[13] "High" and "Low" levels are identified by cases above the 75th percentile of the distribution and below the 25th percentile, respectively.

Figure 5. Size of Promise Gaps and Economic Conditions

5a. Initial Public Debt

5c. Output Gap
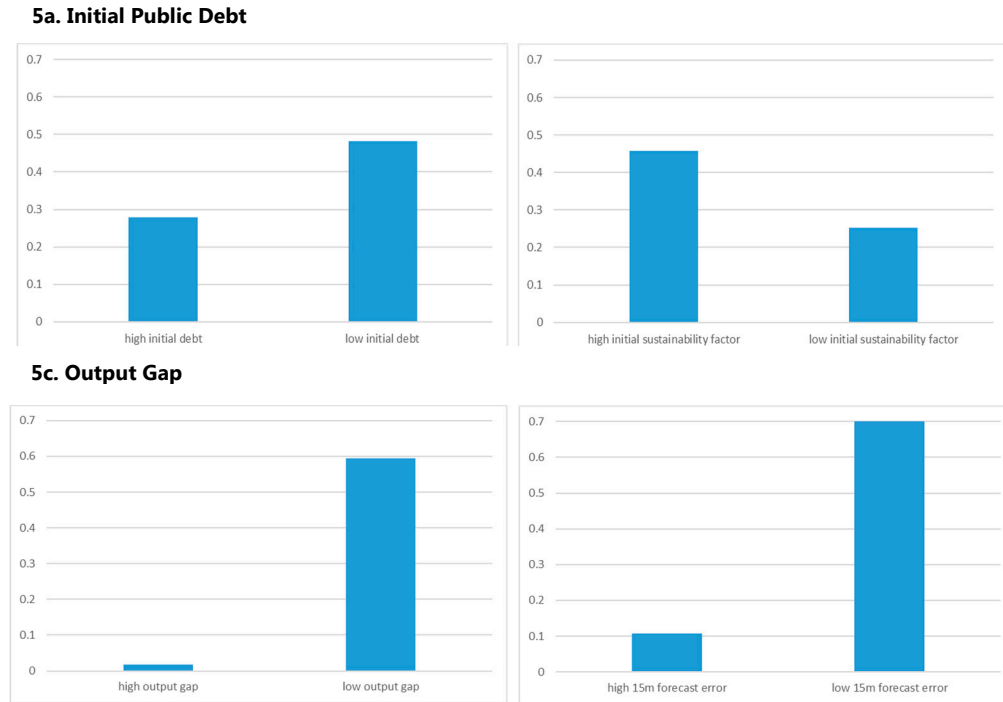
Note: Size" measured in percent of GDP. "Initial" refers to the year prior to the start of a given consolidation episode. "High" and "Low" levels are identified by cases above the 75th percentile of the distribution and below the 25th percentile, respectively.

The bar charts show that initially adverse fiscal conditions (high levels of debt and low fiscal sustainability) are subsequently associated with smaller consolidation promise gaps. This is in line with results from Escolano and others (2014) who find that countries under fiscal stress are willing to undertake stronger fiscal adjustments and deliver on their commitments to undertake more sizable consolidations. In addition, Figure 6 shows that adverse economic conditions (as evidenced by large output gaps and high real GDP growth forecast errors) are also associated with smaller consolidation promise gaps.

B.   Political Factors: Principal Components Analysis

Several political factors can affect the size of consolidation promise gaps. In fact, the existing literature has mainly focused on the possible role of elections and budget institutions (Beetsma and others, 2009, 2012 and 2015) and find that these variables are not very statistically significant. In our view, testing a few political variables can suffer from selection bias. We propose instead a more comprehensive analysis of political factors that can potentially affect promise gaps. We focus on

three political dimensions (each containing multiple variables) and build political indicators through principal components analysis (PCA). These three political dimensions are detailed as follows:[14]

- Electoral *Proximity*: This dimension takes into account the time that policy-makers have before forthcoming elections. Politicians facing coming elections have stronger incentives to deliver on their budget promises and report lower consolidation promise gaps. We use four variables to compute the *Proximity* PCA. A higher electoral proximity is associated with more years in office, less years left in current term, a party of chief executive with a short tradition in office, and less months to the next election.[15] Only the first principal component is retained.[16]

- Political *Strength*: This dimension takes into account the number of political actors participating in budgetary decisions, which typically exhibit conflicting budgetary demands. These actors could be parties in government - or in opposition-, interest groups or, more generally, veto players. Strong governments are those which operate in less fragmented political environments and are likely to be subject to less stringent spending demands. Therefore, they are typically associated with tighter fiscal discipline and lower promise gaps. We use four variables to compute the *Strength* PCA. More political strength is associated with a high margin of parliamentary majority, low cabinet fragmentation, executive control of all houses, and a weak opposition. Only the first principal component is retained.

- Political *Accountability*: This dimension takes into account the institutional context in which fiscal policy decisions are made. When politicians operate in contexts where there is more transparency, better governance and more mechanisms to monitor their activities objectively, they tend to be more responsive to citizen's demands and more accountable to voters for the promises they make. In such contexts, politicians operating in institutional contexts with more accountability would be associated with more fiscal discipline and lower promise gaps. We use five variables to compute the *Accountability* PCA. A higher accountability index is associated with more voice and accountability, with more regulatory quality, more government effectiveness and with the rule of law.[17] Only the first principal component is retained.

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[14] We also explored, in addition, the role of government ideology but results were inconclusive as more than 2/3 of consolidation episodes were planned and implemented by centrist governments. Results are available from the authors upon request.

[15] This latter indicator refers to actual months left to next election, ex-post facto, after the fact, while the variable "more years left in current term" is observed ex-ante. Both are informative.

[16] A likelihood ratio (LR) test was used to examine the "sphericity" case, allowing for sampling variability in the correlations. This test comfortably rejects sphericity at the 1 percent level. The first factor explains almost 40 percent of the variance in the standardized data (see Table 3).

[17] Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. See Worldwide Governance Indicators at: http://info.worldbank.org/governance/wgi/index.aspx#home.

Proximity and *Strength* variables are each represented by one factor composed of four underlying variables.[18] *Accountability* is represented by one factor composed of five underlying variables.[19] The resulting principal components indices are described in Table 2, while Table 3 lists the corresponding factor loadings.[20] We can interpret the principal components by focusing on the factor loadings and the uniqueness of each variable.[21] As regards political *Proximity*, uniqueness is relatively low for all variables, which implies that the factor retained spans the original variables adequately. As to political *Strength*, the factor appears to describe mostly the margin of majority and cabinet strength. In principle, both factors should enter with positive coefficients in the regressions. Finally, with respect to *Accountability*, the factor is mainly driven by the role of government effectiveness.

Table 2: Summary of Political Composite Variables and Descriptive Statistics

Concept	Average	Standard deviation	Variables
Proximity	0	1	years in office
			years left in current term
			party of chief executive more time in office
			months to next election
Strength	0	1	margin of majority
			cabinet strength
			executive control of all houses
			weak opposition
Accountability	0	1	voice and accountability
			regulatory quality
			government effectiveness
			control of corruption
			rule of law

Figure 6 plots the average size of consolidation promise gaps for low and high levels of the three principal component indicators along the three dimensions associated with *Proximity, Strength* and *Accountability*. As expected, political strength and high institutional accountability are associated with lower consolidation promise gaps. Moreover, the higher the electoral proximity the higher the

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[18] The sources for each component variable is the Database on Political Institutions 2015 (Cruz, Keefer and Scartascini, 2015).

[19] The sources for each component variable is the World Bank's Governance Indicators.

[20] PCA is based on the classical covariance matrix, which is sensitive to outliers. Here we conduct a robust estimation of the covariance matrix. A well suited method is the Minimum Covariance Determinant (MCD) that considers all subsets containing h % of the observations and estimates the variance of the mean on the data of the subset associated with the smallest covariance matrix determinant. Specifically, we implement the Rousseeuw and Van Driessen's (1999) algorithm. When we computed the same indices with the MCD version, we obtained similar results, suggesting that outliers are not driving our factor analysis.

[21] Uniqueness of a variable is the share of its variance that is not accounted by all the factors.

inherent pressure for the incumbent government to deliver on their promises in order to maximize the possibilities of being re-elected for a new term; that is, the higher the electoral proximity, the lower the consolidation promise gap. The difference between the average size of promise gaps under the high and low values of each principal component seems more important for political *Strength* and *Accountability* than for *Proximity*.

Table 3: Factor Loadings and Uniqueness

Variables	Factors			Uniqueness
	proximity	strength	accountability	
years in office	0.39			0.29
years left in current term	0.41			0.28
party of chief executive more time in office	0.37			0.29
months to next election	0.45			0.28
margin of majority		0.93		0.12
cabinet strength		0.90		0.17
executive control of all houses		0.76		0.42
weak opposition		0.72		0.47
voice and accountability			0.87	0.22
regulatory quality			0.89	0.10
government effectiveness			0.82	0.13
control of corruption			0.96	0.07
rule of law			0.94	0.11
% explained	**0.39**	**0.69**	**0.85**	

Figure 6. Size of Promise Gaps and Political Conditions
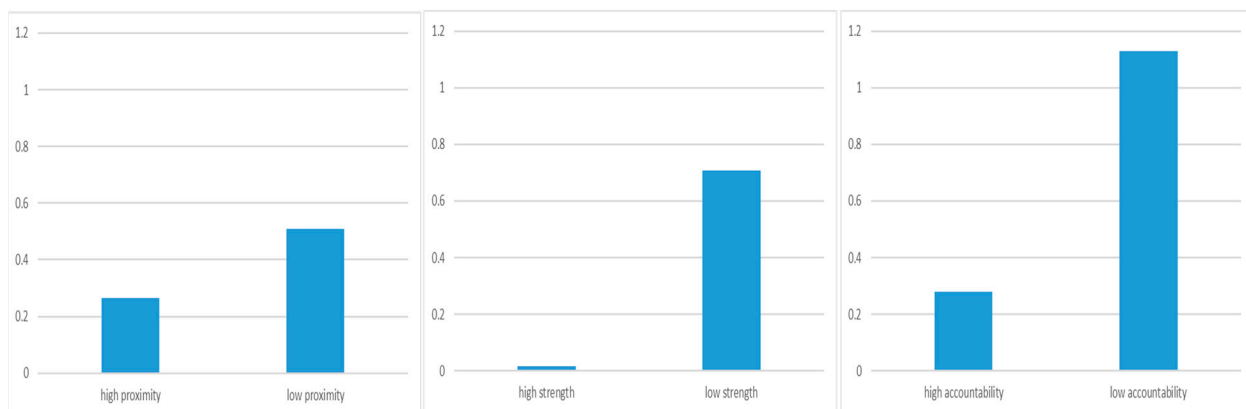
Note: "Size" measured in percent of GDP. For details on the three political variables (proximity, strength, accountability) refer to the main text. "High" and "Low" levels are identified by cases above the 75th percentile of the distribution and below the 25th percentile, respectively.

C. Economic and Political Factors: Panel Regressions

To test the role of the above-mentioned economic and political factors simultaneously, we rely on panel regression analyses. We make use of the 229 years of fiscal consolidation in our panel database and estimate the following equation:

$$CPG_{it} = \delta_i + \beta'IC_{it} + \theta'EC_{it} + \rho'POL_{it} + \epsilon_{it} \tag{1}$$

where CPG_{it} is the consolidation promise gap in country i and year t, IC_{it} is a vector of initial fiscal conditions (measured by the lagged value of public debt-to-GDP ratio)[22], $'EC_{it}$ is a vector of economic conditions (measured by the output gap and the alternative measures of GDP forecast errors), and $'POL_{it}$ is a vector of political variables (where we first include each of the principal components - *Proximity, Strength* and *Accountability* – and then a selection of political variables from each component). β, θ, ρ are unknown coefficients to be estimated. ϵ_{it} is an iid disturbance term satisfying usual assumptions of zero mean and constant variance. Equation (1) is estimated by Ordinary Least Squares (OLS) with robust standard errors clustered at the country level.

Table 4 reports results for economic determinants and confirm that larger initial debt levels, annual improvements in the output gap and larger forecast errors all lead to smaller consolidation promise gaps. Table 5 adds to the economic determinants the three political indicators computed by Principal Components Analysis (PCA). We can observe that the most important factors in explaining cross-country differences in CPGs are political strength and accountability. Table 6 includes a sub-set of relevant political variables for each PCA one at a time and then jointly and shows that they are all associated with lower promise gaps. [23]

To ensure that our results are not biased by the decision to combine three datasets that may bring differences in the approaches selected to narrate fiscal developments, we also run our empirical analysis on the original Devries et al. (2011) database and show that even when using a single-source database our main results hold.[24]

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[22] We do not include the sustainability factor because it is collinear with initial levels of debt.

[23] From the *Proximity* PCA we take the months to next elections and build a variable that identifies if an election has taken place recently (i.e.: in the past year); from the *Strength* PCA we take the margin of majority; and from the *Accountability* PCA we take the indicator of government effectiveness.

[24] In Appendix 2 we repeat the estimation but we constrain the time span to 2009 to match exactly the Devries et al. (2011) sample. Results are qualitatively similar and generally marked by more statistical significance throughout.

Table 4. Economic Determinants of Consolidation Promise Gaps

Specification Regressors	(1)	(2)	(3)	(4)
Lagged Debt	-0.026***			-0.028***
	(0.005)			(0.007)
Change in output gap		-0.540***		-0.605***
		(0.070)		(0.092)
Lagged GDP forecast error			-0.200	-0.202*
			(0.133)	(0.107)
Constant	1.690***	0.087	-0.332	2.097***
	(0.543)	(0.388)	(0.597)	(0.725)
Observations	228	231	162	162
R-squared	0.175	0.287	0.146	0.467

Note: Dependent variable is consolidation promise gaps as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table 5. Determinants of Consolidation Promise Gaps - Principal Component Analysis

Specification Regressors	(1)	(2)	(3)	(4)
Lagged Debt	-0.020***	-0.021***	-0.063**	-0.057*
	(0.007)	(0.007)	(0.029)	(0.032)
Change in output gap	-0.557***	-0.545***	-0.497*	-0.536*
	(0.085)	(0.084)	(0.292)	(0.312)
Proximity	-0.072			0.035
	(0.138)			(0.356)
Strength		-0.531*		-0.570
		(0.284)		(1.079)
Accountability			-2.726*	-3.202*
			(1.561)	(1.811)
Constant	1.232**	1.824***	3.911*	4.193*
	(0.573)	(0.651)	(2.054)	(2.345)
Observations	162	162	41	41
R-squared	0.404	0.417	0.839	0.841

Note: Dependent variable is consolidation promise gaps as defined in the main text. The time span of this regression covers the 1978-2009 period to perfectly match the Devries et al. (2011) dataset. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table 6. Determinants of Consolidation Promise Gaps - Selected Individual Variables

Specification Regressors	(1)	(2)	(3)	(4)
Lagged Debt	-0.035***	-0.026***	-0.033***	-0.014
	(0.009)	(0.007)	(0.011)	(0.014)
Change in output gap	-0.304**	-0.575***	-0.493***	-0.026
	(0.123)	(0.092)	(0.139)	(0.200)
Recent elections	-0.388***			-0.302
	(0.147)			(0.307)
Margin of majority		-4.373**		-7.480**
		(2.007)		(3.546)
Government effectiveness			-3.899***	-4.104**
			(1.310)	(1.942)
Lagged GDP forecast error	-0.173	-0.181*	-0.062	0.026
	(0.113)	(0.107)	(0.162)	(0.190)
Constant	4.905***	4.082***	8.413***	12.755***
	(1.248)	(1.158)	(2.305)	(3.020)
Observations	119	162	94	65
R-squared	0.375	0.484	0.534	0.501

Note: Dependent variable is consolidation promise gaps as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

IV. THE ECONOMIC AND POLITICAL CONSEQUENCES OF CONSOLIDATION PROMISE GAPS

The preceding section showed that political factors such as proximity of elections, lack of political strength or low systemic accountability can derail planned fiscal consolidations and increase the size of promise gaps. Policy-makers in such circumstances may be tempted (or forced by surrounding political conditions) to deviate from initial consolidation plans, provided they can compensate for the negative backlash from markets. In order to gauge empirical support to this line of reasoning, we analyse the reactions of financial markets and the electorate to consolidation promise gaps in the next section. We first present some stylized facts and then report the results of regression analysis and impulse-response functions.

A. The Consequences of Consolidation Promise Gaps: Stylized Facts

If we assume that markets and voters expect governments to deliver on their fiscal promises, the analysis of their reaction to promise gaps can be better understood if we split our sample between episodes in which governments over-performed and managed to deliver more consolidation than initially planned, and episodes in which they underperformed and fell short of their promises. Note that in our sample the average size of the promise gaps in underperforming episodes was equivalent

to 2.8 percent of GDP, while the average size of the promise gap in over-performing episodes was 1.2 percent of GDP.

Figure 7 plots the evolution of government popularity[25] and 5-year bond spreads (against Germany) from four years before the consolidation episode started to four years after. On one hand, government popularity seems to be generally unaffected by the sign of consolidation promise gaps. There is a slight decline in popularity in the aftermath of consolidation episodes in which governments fell short of their promises. Taking this evidence with a grain of salt (because it is not strongly significant), it shows that policy-makers may be mistaken when they assume that they could obtain a boost in popularity by not delivering on their fiscal consolidation plans. While it is possible that in general voters prefer more public goods and dislike fiscal adjustments, it seems that once a promise to consolidate the budget is made they don't like it to be broken. On the other hand, markets seem to react more decisively: government bond spreads increase in both subsamples at the start (and immediately after) of the consolidation, but the spike is larger and more long-lasting in the case of underperforming fiscal adjustments.

Figure 7. Voters' and Market's Reactions to Consolidation Promise Gaps
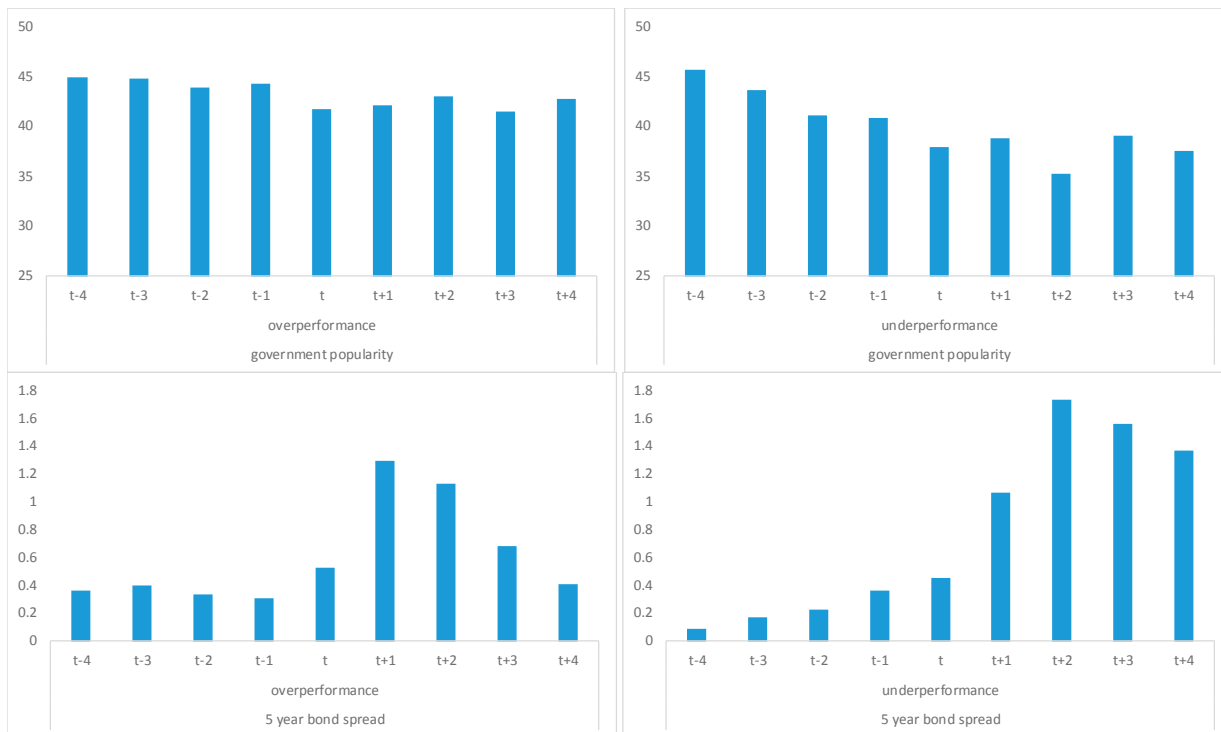
Note: "over-performance" refers to negative CPG; "underperformance" refers to positive CPG. *t* is the start of the consolidation episode. The horizontal axis is measured in years. For a definition of "government popularity" refer to footnote 23.

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[25] "Government popularity" refers to the average percentage of approval/support of the executive leader (president or Prime Minister) per year, or for the EU countries, the percentage of respondents who trust the national government (the EU conducts a survey of its member countries and this is the question that is asked).

B. The Consequences of Consolidation Promise Gaps: Impulse-Response Functions

To estimate the dynamic impact of promised fiscal consolidations over the short and medium-term on both a financial market indicator and on government popularity, we follow Jorda's (2005) method to generate impulse-response functions. [26] This method consists of estimating impulse response functions (IRFs) directly from local projections. For each period k we estimate the following regression:

$$Y_{i,t+k} - Y_{i,t} = \delta_i^k + \alpha_t^k + \sum_{j=1}^{l} \gamma_j^k \, \Delta Y_{i,t-j} + \beta_k CPG_{i,t} + X_{i,t}' \rho_k + \varepsilon_{i,t}^k \tag{2}$$

with $k=1,...,5$ and where Y corresponds to either to the 5-year government bond spreads (relative to Germany) or government popularity; $CPG_{i,t}$ is the consolidation promise gap variable (in country i at time t); $X_{i,t}'$ is the same vector of control variables described in Equation (2); δ_i^k are country fixed effects added to capture unobserved heterogeneity across countries and time-unvarying factors; α_t^k are time effects; γ_j^k and ρ_k are coefficients to be estimated for the lagged dependent variable and set of controls, respectively; $\varepsilon_{i,t}^k$ is a disturbance term satisfying usual assumptions; and β_k measures the distributional impact of fiscal consolidation episodes for each future period k. The lag length (l) is set at 2 as selected by the Akaike-Information-Criteria, but our findings are strongly robust to different lag-structures.[27] Equation (2) is estimated using the Beck and Katz's (1995) panel-corrected standard error (PCSE) estimator. IRFs are obtained by collecting the estimated β_k with confidence intervals computed using β_k's standard errors.[28]

We are aware of alternative ways of estimating dynamic impacts but, as we explain, those are inferior options. The first possible alternative would be to estimate a Panel Vector Autoregression (PVAR). However, this is generally considered a "black-box" since all relevant regressors are considered endogenous. Moreover, one has to know the exact order in which they enter in the system. Since economic theory rarely provides such an ordering, the Choleski decomposition is often used as a solution of limited value for providing structural information to a VAR. Moreover, a major limitation of the VAR approach is that it has to be estimated to low order systems. Since all effects of omitted variables are in the residuals, this may lead to big distortions in the IRFs, making them of little use for structural interpretations (see e.g. Hendry 1995). In addition, all measurement errors or misspecifications also induce unexplained information left in the error terms, making interpretations of the IRFs even more difficult (Ericsson et al., 1997). One should bear in mind that due to its limited number of variables and the aggregate nature of the shocks, a VAR model should be viewed as an

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[26] Appendix 3 presents the results of a static approach to test the reaction of markets and voters to positive and negative promise gaps.

[27] Results are not shown for reasons of parsimony but are available upon request.

[28] The presence of a lagged dependent variable and country fixed effects could bias the estimation of γ_j^k and β_k in small samples (Nickell, 1981). However, in our case, this is not a problem since the finite sample bias is around 0.03 (that is, 1/T, where T is 38).

approximation to a larger structural system. In contrast, the approach used here does not suffer from these identification and size-limitation problems and, in fact, has been suggested by Auerbach and Gorodnichenko (2013), inter alia, as a sufficiently flexible alternative.

A second alternative of assessing the dynamic impact of fiscal consolidation episodes would be to estimate an Autoregressive-Distributed-Lag (ARDL) model of changes in inequality and consolidation episodes and to compute the IRFs from the estimated coefficients (Romer and Romer, 1989; and Cerra and Saxena, 2008). Note that the IRFs obtained using this method, however, tend to be lag-sensitive, therefore undermining the overall stability of the IRFs. Moreover, the statistical significance of long-lasting effects can result from one-type-of-shock models, particularly when the dependent variable is very persistent, as the Gini (Cai and Den Haan, 2009). Contrarily, in the local projection method we do not experience such issue since lagged dependent variables enter as control variables and are not used to derive the IRFs. Lastly, estimated IRFs' confidence intervals are computed directly using the standard errors of the estimated coefficients without the need for Monte Carlo simulations.

In order to explore whether the impact of consolidation promise gaps on both markets and the electorate depends on the state of the business cycle, the following alternative regression is estimated:

$$Y_{i,t+k} - Y_{i,t} = \delta_i^k + \alpha_t^k + \sum_{j=1}^{l} \gamma_j^k \Delta Y_{i,t-j} + \beta_k^{bad} \cdot Y(z) \cdot CPG_{i,t} + \beta_k^{good} \cdot (1 - Y(z)) \cdot CPG_{i,t} + + X'_{i,t}\rho_k + \varepsilon_{i,t}^k \tag{3}$$

with $Y(z_{it}) = \frac{\exp(-\gamma z_{it})}{1+\exp(-\gamma z_{it})}, \quad \gamma > 0$

where z is an indicator of the state of the economy (using the real GDP growth rate) normalized to have zero mean and unit variance. The remainder of the variables and parameters are defined as in Equation (2). This method is equivalent to Granger and Teravistra's (1993) smooth transition autoregressive model, whose advantage relative to estimating VARs for each regime is that it uses a larger number of observations to estimate the IRFs, thus increasing stability and precision.

Figure 8 confirms the previous results obtained by estimating equation 2. In the aftermath of a promise gap shock, 5-year government spreads increase strongly and are statistically significant at usual levels. On the contrary, the reaction of voters is weaker. The government popularity declines gradually but the impulse-response function is statistically weaker. Figure 9 shows the results of estimating Equation 3. It seems that markets penalize more incumbent governments (by raising government bond spreads) and for a longer period for not delivering on their promises during bad times. As in Figure 8, the reaction of voters is not positive, and shows instead a marginally significant decrease in popularity during bad times one year after the promise gap shock.

Figure 8. Local Projection Method: Impulse Response Functions

Response: 5-year bond spreads	Response: Government Popularity
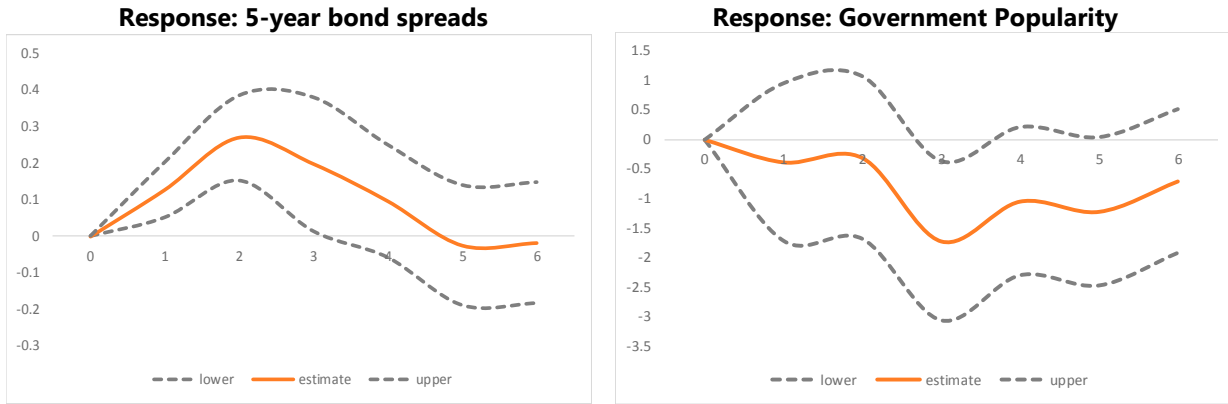
Note: Dotted lines equal 90 percent confidence error bands. See main text for more details.

Figure 9. Local Projection Method: Impulse Response Functions conditioned on the Phase of the Business Cycle

Response: 5-year bond spreads

Recession	Expansion

Response: Government Popularity

Recession	Expansion
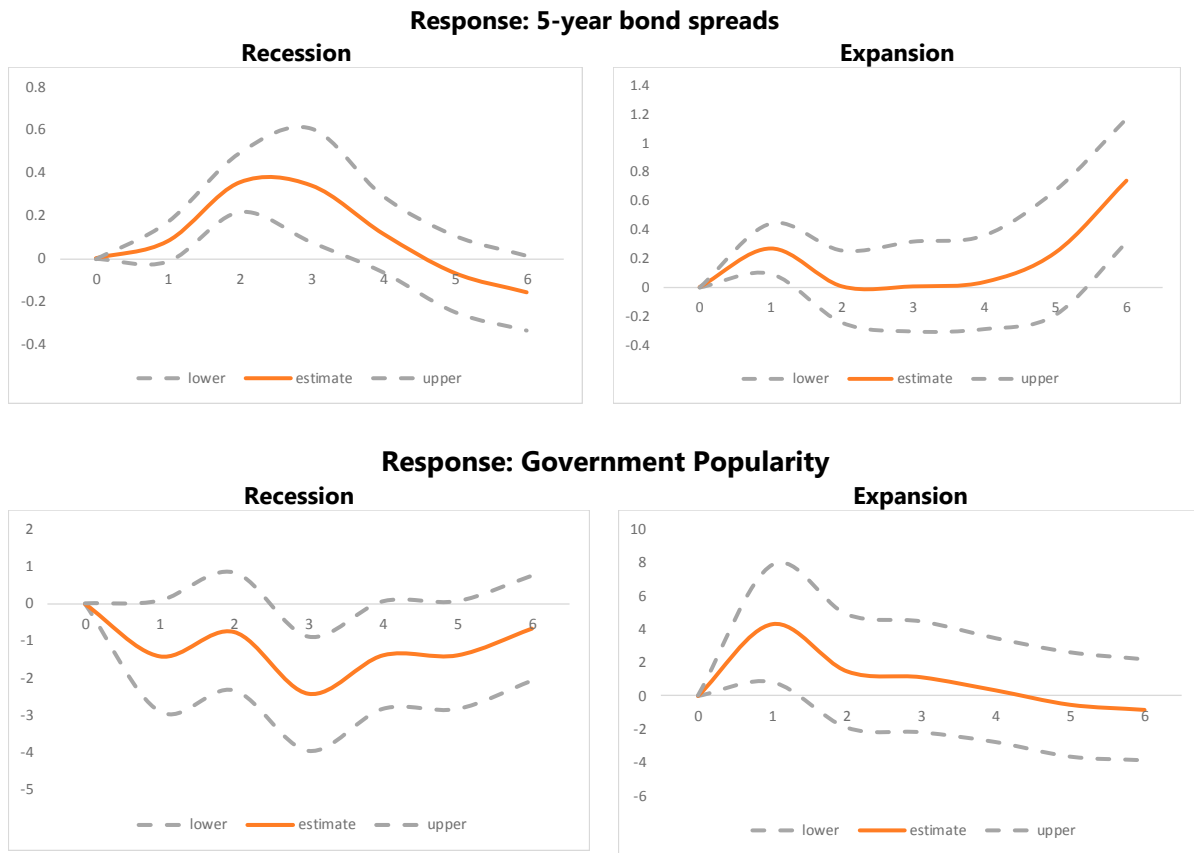
Note: Dotted lines equal 90 percent confidence error bands. See main text for more details.

V. CONCLUSIONS AND POLICY IMPLICATIONS

This paper analyses the causes and consequences of fiscal consolidation promise gaps, defined as the distance between planned fiscal adjustments and actual consolidations, and finds that these gaps are sizeable; both economic and political factors affect them. In particular, smaller initial debt levels, annual improvements in the output gap and smaller forecast errors narrow promise gaps. The role of political factors in explaining consolidation promise gaps is important: newly elected governments, with a large margin of majority and high government effectiveness are more likely to deliver on their planned fiscal adjustments. Finally, we find evidence that financial markets penalize (reward) underperformers (over-performers), but the electorate is less responsive.

These results have important policy implications. First, policymakers should be more cautious in formulating ambitious fiscal consolidations (especially when they are revenue driven). Second, governments can deliver on their promised spending cuts by improving their capacity to deliver public services efficiently. Also, stronger starting conditions (as reflected by lower fiscal imbalances) could lead to lower promise gaps later on. Finally, policy-makers should not be tempted to deviate from initial adjustment plans hoping to compensate a subsequent market backlash with a boost in popularity because voters do not react positively to broken promises.

Appendix 1. Description of the Sample Selection

The dataset on planned fiscal consolidations used in this paper was constructed combining three sources of data. First we resorted to the Devries et al. (2011) data which covers fiscal consolidation plans in 17 advanced economies between 1978 and 2009. Despite some methodological differences in the selection of planned consolidation episodes, we complemented our sample from 2010 to 2013 using the enlarged narrative dataset of Alesina et al. (2015). These authors focused on 11 countries (United States, United Kingdom, Austria, Belgium, Denmark, France, Germany, Italy, Ireland, Portugal, and Spain) and expanded the narrative dataset until 2013. Finally, for the remaining countries and years, we used the European Commission's Stability and Convergence Programmes (first vintage), complemented with country budget sources to further expand the coverage to 2015.[29]

Country	Year	Source
Australia	1978-2009	Devries et al.
	2010-2015	Country sources
Austria	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	Country sources
Canada	1978-2009	Devries et al.
	2010-2015	Country sources
Denmark	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	SCP
Finland	1978-2009	Devries et al.
	2010-2015	SCP
Germany	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	SCP
Ireland	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	SCP
Italy	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	SCP
Japan	1978-2009	Devries et al.
	2010-2015	Unavailable
Netherlands	1978-2009	Devries et al.
	2010-2015	SCP
Portugal	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	SCP
Spain	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	SCP
Sweden	1978-2009	Devries et al.
	2010-2015	SCP
United Kingdom	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	Country sources
United States	1978-2009	Devries et al.
	2010-2013	Alesina et al.
	2014-2015	Country sources

Note: SCP (Stability and Convergence Programs)

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[29] By construction, even if a government has sustained a fiscal adjustment over various years (e.g.UK), the data would be compiled tranches, corresponding to the three sources of data used.

Below is a description of the criteria used to expand the database until 2015 using European Commission's data and country sources.

Australia

Source: Commonwealth of Australia Budget

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2010	1.4	0.15	1.25	0	1
2011	1.9	1.35	0.55	1	0
2012	3	1.7	1.3	1	0
2014	1.2	0.4	0.8	0	1
2015	0.5	0.55	-0.05	1	0

Fiscal consolidation in 2010 amounted to 1.4 percent of GDP with expenditure cuts of 1.25 percent of GDP and tax hikes of 0.15 percent of GDP. Fiscal consolidation in 2010 was motivated by deficit reduction. They key objective of Australia's deficit exit strategy was to limit expenditure growth by introducing a 2 percent cap on annual real public spending growth until the budget returned to a surplus. On the revenue side, the government raised taxes on tobacco and continued implementation of its tax reform agenda.

Fiscal consolidation in 2011 amounted to 1.9 percent of GDP with expenditure cuts of 0.55 percent of GDP and tax hikes of 1.35 percent of GDP. As in 2010, fiscal consolidation in 2011 was motivated by deficit reduction.

Fiscal consolidation in 2012 amounted to 3 percent of GDP with expenditure cuts of 1.3 percent of GDP and tax hikes of 1.7 percent of GDP. As in 2011, fiscal consolidation in 2012 was motivated by deficit reduction.

Fiscal consolidation in 2014 amounted to 1.2 percent of GDP with expenditure cuts of 0.8 percent of GDP and tax hikes of 0.4 percent of GDP. As in 2012, fiscal consolidation in 2014 was motivated by deficit reduction, with the hope of achieving a budget surplus by 2023-2024. A one-off government grant to the RBA in 2013-2014 contributed 0.6 percent of GDP to the consolidation in 2014.

Fiscal consolidation in 2015 amounted to 0.5 percent of GDP with an expenditure increase of 0.05 percent of GDP and tax hikes of 0.55 percent of GDP. Fiscal consolidation in 2015 was consistent with the government's medium-term fiscal strategy of returning the budget to surplus, maintaining strong fiscal discipline, strengthening the balance sheet, and redirecting government spending to increase productivity and workforce participation.

Austria

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2015	0.1	0.15	-0.05	1	0

*Fiscal consolidation in 2015 amounted to 0.1 percent of GDP with tax hikes of 0.15 percent of GDP and an expenditure increase of 0.05 percent of GDP. Structural fiscal consolidation was a key policy area for Austria in 2015. The country's tax reform package will tangibly reduce the tax burden, while cuts in expenditure on public administration and subsidies, tax fraud, and tax exemptions will generate adequate financing of the reform.

Belgium

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	0.4	-0.9	1.3	0	1
2015	0.4	-0.65	1.05	0	1

Fiscal consolidation in 2014 amounted to 0.4 percent of GDP with expenditure cuts of 1.3 percent of GDP and tax cuts of 0.9 percent of GDP. Consolidation, which slowed in 2014, is necessary to ensure debt sustainability in Belgium. In particular, the country's high public expenditure offers scope for a larger role of spending cuts in fiscal consolidation, especially in social transfers and public consumption. Belgium faced further problems in 2014 where the tax structure was heavily tilted towards labor income and numerous tax expenditures distorted the system.

*Fiscal consolidation in 2015 amounted to 0.4 percent of GDP with expenditure cuts of 1.05 percent of GDP and tax cuts of 0.65 percent of GDP. As in 2014, consolidation in 2015 was motivated by deficit reduction and debt sustainability.

Canada

Source: Canada's Economic Action Plan Budget

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2010	0.4	0.4	0	1	0
2011	0.3	0.05	0.25	0	1
2012	0.2	-0.1	0.3	0	1
2013	0.4	0.2	0.2	0	0
2014	0.8	0.25	0.55	0	1
2015	0.2	0.45	-0.25	1	0

Fiscal consolidation in 2010 amounted to 0.4 percent of GDP with tax hikes of 0.4 percent of GDP. Fiscal consolidation in 2010 was motivated by deficit reduction and the objective of eliminating

the deficit by 2015 through Canada's Economic Action Plan. The government aimed to not raise taxes but rather to restrain growth in spending though targeted measures, including national defence spending, the international assistance envelope, and containing administrative costs.

*Fiscal consolidation in 2011 amounted to 0.3 percent of GDP with expenditure cuts of 0.25 percent of GDP and tax hikes of 0.05 percent of GDP. As in 2010, fiscal consolidation in 2011 was motivated by deficit reduction and the objective of eliminating the deficit by 2015.

Fiscal consolidation in 2012 amounted to 0.2 percent of GDP with expenditure cuts of 0.3 percent of GDP and tax cuts of 0.1 percent of GDP. As in previous years, fiscal consolidation in 2012 was motivated by deficit reduction and the objective of eliminating the deficit by 2015. The one-year Strategic and Operating Review was launched in 2011 with the aim of improving the efficiency and effectiveness of government operations and programs; it yielded savings of $5.2 billion on an ongoing basis.

Fiscal consolidation in 2013 amounted to 0.4 percent of GDP with expenditure cuts of 0.2 percent of GDP and tax hikes of 0.2 percent of GDP. As in previous years, fiscal consolidation in 2013 was motivated by deficit reduction and the objective of eliminating the deficit by 2015. The government further controlled direct program spending by expending the use of tele-presence technologies to reduce travel expenses within the government, standardizing information technology, modernizing the production and distribution of government publications, and implementing targeted savings in the operations of the Canada Revenue Agency and Fisheries and Oceans Canada.

*Fiscal consolidation in 2014 amounted to 0.8 percent of GDP with expenditure cuts of 0.55 percent of GDP and tax hikes of 0.25 percent of GDP. As in previous years, fiscal consolidation in 2014 was motivated by deficit reduction and the objective of eliminating the deficit by 2015. The government also introduced measures to improve the integrity of the tax system, closing tax loopholes and strengthening tax compliance to ensure fairness.

*Fiscal consolidation in 2015 amounted to 0.2 percent of GDP with an expenditure increase of 0.25 percent of GDP and tax hikes of 0.45 percent of GDP. As in previous years, fiscal consolidation in 2015 was motivated by deficit reduction. The government fulfilled its promise to balance the budget in 2015.

Denmark

Source: Stability and Convergence Programme

Denmark did not show evidence of fiscal consolidation in 2014 or 2015.

Finland

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2011	1.9	0.75	1.15	0	1

*Fiscal consolidation in 2011 amounted to 1.9 percent of GDP with expenditure cuts of 1.15 percent of GDP and tax hikes of 0.75 percent of GDP. The government applied a system of spending limits, which proved effective during the recession, and also increased VAT, energy taxes, excise duties on sweets and soft drinks, and the waste tax to tighten fiscal policy.

France

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	0.5	0.05	0.45	0	1
2015	0.1	-0.2	0.3	0	1

*Fiscal consolidation in 2014 amounted to 0.5 percent of GDP with expenditure cuts of 0.45 percent of GDP and tax hikes of 0.05 percent of GDP. The government's plans for fiscal consolidation for 2014-2016 have been cut back, and the deficit will not be reduced to Maastricht ceiling (3 percent of GDP) until 2017. The weakness of consolidation efforts in 2014 were primarily due to low tax receipts, a result of weak economic growth and inflation.

*Fiscal consolidation in 2015 amounted to 0.1 percent of GDP with expenditure cuts of 0.3 percent of GDP and tax cuts of 0.2 percent of GDP. In order to meet the targets set in the Public Finance Planning Act, the government instituted €4 billion in savings measures. The country continued to reduce expenditure, as well as the rate of aggregate tax social security contributions, until 2017.

Germany

Source: Stability and Convergence Programme

Germany did not show evidence of fiscal consolidation in 2014 or 2015.

Italy

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	0.4	-0.2	0.6	0	1
2015	0.1	-0.3	0.4	0	1

Fiscal consolidation in 2014 amounted to 0.4 percent of GDP with expenditure cuts of 0.6 percent of GDP and tax cuts of 0.2 percent of GDP. Since 2008, there has been a commitment to keep public finances in order by increasing revenues and decreasing expenditures. However, stimulus measures introduced in 2014 also included some reductions to the Social Contributions and the Regional Tax on Productive Activities (IRAP).

*Fiscal consolidation in 2015 amounted to 0.1 percent of GDP with expenditure cuts of 0.4 percent of GDP and tax cuts of 0.3 percent of GDP. The government approved a legislative

document for delivering more growth friendly tax measures, including a reformed property tax, new environmental taxes, a reform of tax expenditures, and new actions against tax evasion, by 2015.

Ireland

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	2.4	0.3	2.1	0	1
2015	1.2	-0.9	2.1	0	1

Fiscal consolidation in 2014 amounted to 2.4 percent of GDP with expenditure cuts of 2.1 percent of GDP and tax hikes of 0.3 percent of GDP. As a result of the EU-IMF financial assistance program and the National Recovery Plan (2011-2014), Ireland emerged from the crisis with a declining fiscal deficit and a stronger fiscal framework. Fiscal consolidation was motivated by EC requirements to reduce the deficit in public finances to below three percent of GDP by 2015.

*Fiscal consolidation in 2015 amounted to 1.2 percent of GDP with expenditure cuts of 2.1 percent of GDP and tax cuts of 0.9 percent of GDP. As in 2014, fiscal consolidation was motivated by EC requirements to reduce the deficit in public finances to below three percent of GDP by 2015.

Japan

Although the CAPB in Japan in 2014 and 2015 improved, this episode is not included in the sample because published data is unavailable.

Netherlands

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2011	1.9	0.6	1.3	0	1
2012	0.1	0	0.1	0	1
2013	0.8	0.65	0.15	1	0
2015	0.3	-0.6	0.9	0	1

*Fiscal consolidation in 2011 amounted to 1.9 percent of GDP with expenditure cuts of 1.3 percent of GDP and tax hikes of 0.6 percent of GDP. The primary goal of the Dutch consolidation strategy in 2011 was to restore financial sustainability. The government aimed to reach fiscal balance in 2015.

Fiscal consolidation in 2012 amounted to 0.1 percent of GDP with expenditure cuts of 0.1 percent of GDP. As in 2011, the goal of fiscal consolidation in 2012 was to restore financial sustainability. Expenditure cuts were focused on social benefits, the public wage bill, and subsidies.

*Fiscal consolidation in 2013 amounted to 0.8 percent of GDP with expenditure cuts of 0.15 percent of GDP and tax hikes of 0.65 percent of GDP. An additional consolidation package in spring

2012 and already planned measures increased consolidation measures in 2013. This package also contained a number of structural reforms, particularly in housing, pension, and labor markets.

*Fiscal consolidation in 2015 amounted to 0.3 percent of GDP with expenditure cuts of 0.9 percent of GDP and tax cuts of 0.6 percent of GDP. Fiscal sustainability has achieved a positive outlook. The fiscal framework based on a spending ceiling but allowing automatic stabilizers to work on the revenue side has served the Netherlands well, as public debt shifted to below 70 percent of GDP.

Portugal

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	0.9	-0.4	1.3	0	1
2015	1.4	-0.1	1.5	0	1

Fiscal consolidation in 2014 amounted to 0.9 percent of GDP with expenditure cuts of 1.3 percent of GDP and tax cuts of 0.4 percent of GDP. Fiscal consolidation in 2014 resulted in a general government deficit of 4.5 percent of GDP, lower than the 4.8 percent projected in the Draft Budgetary Plan for 2015. Excluding deficit-increasing one-off measures, the general government deficit fell to 3.3 percent of GDP, leading to an improvement of the baseline for 2015.

Fiscal consolidation in 2015 amounted to 1.4 percent of GDP with expenditure cuts of 1.5 percent of GDP and tax cuts of 0.1 percent of GDP. As in 2014, fiscal consolidation in 2015 was motivated by deficit reduction. The Stability Programme maintained the headline target of the Draft Budgetary Plan (DBP) for 2015 of a headline deficit of 2.7 percent of GDP.

Spain

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	1.7	0.75	0.95	0	1
2015	1.4	-0.1	1.5	0	1

Fiscal consolidation in 2014 amounted to 1.7 percent of GDP with expenditure cuts of 0.95 percent of GDP and tax hikes of 0.75 percent of GDP. Fiscal consolidation in 2014 was motivated by deficit reduction under the Stability Programme, which aimed to bring the fiscal deficit below three percent of GDP in 2016 and to reach the medium-term objective of a balanced budgetary position in structural terms in 2017.

*Fiscal consolidation in 2015 amounted to 1.4 percent of GDP with expenditure cuts of 1.5 percent of GDP and tax cuts of 0.1 percent of GDP. As in 2014, fiscal consolidation in 2015 was motivated by deficit reduction under the Stability Programme, which aimed to bring the fiscal deficit below three percent of GDP in 2016 and to reach the medium-term objective of a balanced budgetary position in structural terms in 2017.

Sweden

Source: Stability and Convergence Programme

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2011	0.6	-0.8	1.4	0	1
2015	0.5	0.1	0.4	0	1

Fiscal consolidation in 2011 amounted to 0.6 percent of GDP with expenditure cuts of 1.4 percent of GDP and tax cuts of 0.8 percent of GDP. The roll-back of stimulus measures to local governments contributed the most to the consolidation plan in 2011; thus effective consolidation is solely expenditure-based.

Fiscal consolidation in 2015 amounted to 0.5 percent of GDP with expenditure cuts of 0.4 percent of GDP and tax hikes of 0.1 percent of GDP. Fiscal policy supported activity through the operation of automatic stabilizers. The fiscal response to the extended period of weak economic growth, in addition to some permanent personal and corporate income tax cuts and increase expenditures for sickness benefits and asylum seekers, decreased the fiscal balance.

United Kingdom

Source: Budget Report of Her Majesty's Treasury and Autumn Statement (2016)

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	1.1	0.05	1.05	0	1
2015	1.3	0.2	1.1	0	1

*Fiscal consolidation in 2014 amounted to 1.1 percent of GDP, primarily with spending cuts of 1.05 percent of GDP and tax hikes of 0.05 percent of GDP. The government's consolidation plans have been central to the reduction in the deficit. Reductions in expenditure were a result of the spending reduction announced in the Autumn Statement 2013 and the reduced costs of public service pensions. Total Managed Expenditure (TME) will continue to be reduced by around a further £2 billion each year from 2016-2017.

Fiscal consolidation in 2015 amounted to 1.3 percent of GDP, primarily with spending cuts of 1.01 percent of GDP and tax hikes of 0.2 percent of GDP. Consolidation in 2015 was a continuation of the government's long-term plan in 2010 to halve the deficit as a share of GDP. With an aim to achieve a surplus in 2019-2020, the government will undertake around £37 billion of further consolidation measures.

United States

Source: Budget of the U.S. Government

Year	Consolidation size	Tax size	Expenditure size	Tax-based	Expenditure-based
2014	1.6	1.1	0.5	1	0
2015	0.6	0.95	-0.35	1	0

Fiscal consolidation in 2014 amounted to 1.6 percent of GDP with tax hikes of 1.1 percent of GDP and spending cuts of 0.5 percent of GDP. Policy decisions such as the spending caps in the Budget Control Act of 2011, the increase in tax rates for top earners at the beginning of 2013, and the end of the temporary payroll tax holiday contributed to the government's deficit reduction strategy.

*Fiscal consolidation in 2015 amounted to 0.6 percent of GDP, primarily with tax hikes of 0.95 percent of GDP and an expenditure increase of 0.35 percent of GDP. Arrangements such as the Bipartisan Budget Act of 2015 aided in avoiding a Federal shutdown, partly relieved automatic Federal spending cuts, and relaxed the Federal debt limit. Government purchases, including consumption and gross investment, at the Federal, State, and local levels, added to the consolidation.

Appendix 2. Robustness of Results in a Homogeneous Sample

By combining three sources of data on narrative fiscal consolidations we face two potential problems. The first one is inherent to the narrative methodology which is itself subjective. While potential (judgemental) measurements errors could have affected the three difference sources of data, we assume that these would be evenly distributed across the three sources because the three data sources followed almost identical criteria for the selection of episodes. The second potential problem arises from possible structural breaks, as a consequence of mixing similar but different data sources between 1978 and 2015. To make sure that the main results are robust, we replicated all the analysis in the homogeneous sample of Devries et al. (2011) which includes data from 17 advanced countries between 1978 and 2009 (see tables A1.1. and A1.2.). We also replicated the analysis using a sample of promise gaps calculated in a sample built only with data from the Stability and Convergence Programs (SCP) submitted by the 28 EU Member States to the European Commission between 1998 and 2015 (see tables A1.3 and A1.4). As shown below, all the results from these tests on two alternative homogeneous samples confirm the robustness of our main findings.

Table A2.1. Economic Determinants of Consolidation Promise Gaps,
Devries' database (1978-2009)

Specification Regressors	(1)	(2)	(3)	(4)
Lagged debt	-0.032***			-0.051***
	(0.007)			(0.012)
Change in output gap		-0.611***		-0.619***
		(0.082)		(0.119)
Lagged GDP forecast error			-0.404**	-0.331***
			(0.166)	(0.123)
Constant	1.892***	0.181	-0.134	3.479***
	(0.638)	(0.450)	(0.736)	(0.908)
Observations	162	165	96	96
R-squared	0.225	0.368	0.428	0.712

Note: Dependent variable is consolidation promise gaps as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table A2.2 – Economic and Political Determinants of Consolidation Promise Gaps
Devries' database (1978-2009)

Specification Regressors	(1)	(2)	(3)	(4)
Lagged debt	-0.073***	-0.051***	-0.061**	-0.017
	(0.017)	(0.013)	(0.025)	(0.053)
Change in output gap	-0.418**	-0.617***	-0.440	-0.346
	(0.157)	(0.121)	(0.271)	(0.536)
Recent elections	-0.377*			-1.327
	(0.393)			(1.779)
Margin of majority		-0.420*		-7.306
		(2.847)		(8.870)
Government effectiveness			-4.424**	-2.952
			(1.735)	(5.379)
Lagged GDP forecast error	-0.268**	-0.329**	-0.436	-0.048
	(0.126)	(0.125)	(0.323)	(0.445)
Constant	7.312***	3.656**	11.722***	18.539**
	(2.478)	(1.504)	(2.890)	(7.286)
Observations	73	96	41	29
R-squared	0.636	0.713	0.868	0.798

Note: Dependent variable is consolidation promise gaps as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table A2.3. Economic Determinants of Consolidation Promise Gaps,
SCP's database (1998-2015)

Specification Regressors	(1)	(2)	(3)	(4)
Lagged debt	-0.026***			-0.026***
	(0.009)			(0.008)
Change in output gap		-0.242***		-0.272***
		(0.052)		(0.053)
Lagged GDP forecast error			-0.059	-0.107**
			(0.046)	(0.043)
Constant	1.850***	0.571	0.509	1.906***
	(0.708)	(0.504)	(0.503)	(0.635)
Observations	252	253	224	224
R-squared	0.148	0.196	0.122	0.263
Number of EU countries	27	27	23	23

Note: Dependent variable is consolidation promise gaps as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table A2.4. Economic and Political Determinants of Consolidation Promise Gaps
SCP's database (1998-2015)

Specification Regressors	(1)	(2)	(3)	(4)
Lagged debt	-0.026***	-0.026***	-0.035***	-0.033***
	(0.008)	(0.009)	(0.009)	(0.009)
Change in output gap	-0.299***	-0.271***	-0.240***	-0.266***
	(0.054)	(0.053)	(0.055)	(0.057)
Recent elections	-1.071*			-1.289**
	(0.586)			(0.632)
Lagged GDP forecast error	-0.110**	-0.107**	-0.091**	-0.092**
	(0.043)	(0.043)	(0.045)	(0.045)
Margin of majority		-1.330		-3.654
		(2.353)		(2.775)
Government effectiveness			-1.798**	-1.795**
			(0.898)	(0.889)
Constant	1.922***	2.620*	5.479***	7.453***
	(0.631)	(1.414)	(1.731)	(2.257)
Observations	224	224	188	188
R-squared	0.275	0.264	0.314	0.336
Number of EU countries	23	23	23	23

Note: Dependent variable is consolidation promise gaps as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Appendix 3. The Consequences of Consolidation Promise Gaps: Regression Analysis

To test the reaction of markets and voters to positive and negative promise gaps, we follow a static approach and estimate the following equation:

$$Y_{it+1} = \delta_i + \vartheta CPG_{it} + \pi' X_{it} + \epsilon_{it} \tag{A3.1}$$

where Y_{it} denotes either the 5-year government bond spreads (relative to Germany) or government popularity in country i at time t; CPG_{it} is our Consolidation Promised Gap variable (in country i at time t); X_{it} is a vector of control variables (that varies with the dependent variable) and includes real GDP growth, public debt (percent of GDP), changes in unemployment and 21 month real GDP growth forecast errors to control for the macroeconomic environment and minimize endogeneity concerns due to omitted-variables bias. ϑ, π are unknown parameters to be estimated. ϵ_{it} is an iid disturbance term satisfying usual assumptions. Equation (A3.1) is estimated by Ordinary Least Squares (OLS) with robust standard errors clustered at the country level.

Table A3.1 reports results for the 5-year bond spread reaction to fiscal promise gaps, and confirms that financial markets tend to punish fiscal underperformance. Once governments plan for a fiscal adjustment, markets will follow closely and react negatively when they are not able to meet the targets. Table A3.2 reports instead the results of using government popularity as the dependent variable. In general, voters do not seem to react strongly to consolidation gaps, regardless of the sign (i.e., whether one inspects under- or overperformers).

Table A3.1. Markets' Reaction to Consolidation Promise Gaps

Specification	5-year bond spreads					
Regressors	**Underperformers**			**Overperformers**		
CPG	0.283***	0.247*	0.260**	0.030	0.077	0.027
	(0.102)	(0.140)	(0.102)	(0.329)	(0.325)	(0.303)
Real GDP growth		-0.058			-0.370	
		(0.152)			(0.262)	
Public debt			0.013			0.039**
			(0.008)			(0.016)
Constant	1.101***	1.192***	-0.002	1.627***	2.138***	-1.970
	(0.243)	(0.343)	(0.750)	(0.522)	(0.628)	(1.557)
Observations	55	55	55	30	30	30
R-squared	0.128	0.130	0.166	0.000	0.069	0.180

Note: Dependent variable is the 5-year government bond spreads relative to Germany. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

Table A3.2. Voters' Reaction to Consolidation Promise Gaps

Specification	Popularity			
Regressors	**Underperformers**		**Overperformers**	
CPG	-1.775**	-0.866	0.438	-1.029
	(0.829)	(1.896)	(1.465)	(2.054)
Lagged GDP forecast error	4.295***	3.023	0.815	-4.351*
	(1.235)	(3.533)	(1.483)	(2.424)
Change in unemployment rate		-2.489		1.267
		(1.904)		(3.170)
Constant	37.307***	41.289***	50.506***	66.202***
	(5.831)	(10.582)	(4.771)	(6.985)
Observations	66	36	57	35
R-squared	0.603	0.681	0.748	0.792

Note: Dependent variable is government popularity as defined in the main text. Robust standard errors clustered at the country level are in parenthesis. Time and country fixed effects are omitted for reasons of parsimony. *, **, *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

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