The Fiscal Policy Trap:
Deficits, Austerity and Popularity[*]

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Abstract

Existing research finds that voters disapprove of fiscal deficits and fiscal adjustments at the same time. Our analysis provides an explanation for these seemingly contradictory results. Since fiscal austerity has short-term costs and long-term benefits, voter discount the uncertain, future benefits of austerity and withdraw their support from the government after fiscal cuts. They only reward governments when the benefits of austerity policies become visible and the long-term benefits start to outweigh the short-term costs. In line with our expectations, a survey experiment in Australia, Germany and the USA shows that voters punish governments for fiscal austerity, even if the fiscal deficit is large. The results from an observational study of annual vote intentions in 15 OECD countries confirm this. However, the dynamic panel model also shows that voters reward the government if the fiscal balance improves, but only gradually and with a delay. Electorally vulnerable governments, therefore, face a fiscal-policy dilemma that leaves them trapped between deficits and austerity because of the countervailing effects that these two variables have on vote intentions.

"We all know what to do, we just don't know how to get re-elected after we've done it." – Jean-Claude Juncker, quoted in The Economist (2007, p. 8).

1 Introduction

Political research provides inconclusive results about the political room to move that governments have in periods of fiscal stress. On the one hand, the existing studies claim that fiscal retrenchments "carry tremendous electoral risk" (Pierson, 1996, 179) because voters who are adversely affected will turn away from government parties (Hübscher, Sattler and Wagner, 2018). Governments, therefore, refrain from implementing fiscal austerity measures, especially if they are electorally vulnerable (Immergut and Abou-Chadi, 2014; Hübscher, 2016; Hübscher and Sattler, 2017). On the other hand, a series of studies finds that fiscal retrenchments do not negatively affect the electoral prospects of governments that implement these policies (Alesina, Carloni and Lecce, 2011; Giger and Nelson, 2011; Arias and Stasavage, 2018). This is consistent with arguments that voters disapprove of deficit-spending and reward the government for cutting fiscal deficits (Peltzmann, 1992).

Our analysis examines how voters evaluate the trade-off between deficits and austerity to reconcile these seemingly inconsistent views. Since fiscal austerity has short-term costs and long-term benefits, voter evaluations adapt dynamically to the changing cost-benefit relationship. In the short-term, voters weight the costs of austerity more because these costs are felt immediately, while the positive impact of these measures on the economy only materializes over time (Born, Müller and Pfeifer, 2015). Moreover, experts and the media controversially discuss the effects of fiscal austerity leaving voters uncertain about the true value of these measures (Barnes and Hicks, 2018). Voters, thus, discount the uncertain, future benefits of austerity and withdraw their support from the government after fiscal cuts. They gradually revise their initial judgment when the benefits of austerity become visible, and the long-term benefits start to outweigh the short-term costs.

We examine these conjectures using micro-level, experimental and macro-level, observational data. The survey experiment, which we conducted in Australia, Germany and the USA, provide a snapshot of voter responses to fiscal policy announcements by the government under different budgetary situations. They, thus, allow us to estimate the immediate, causal effect of fiscal austerity and the state of the fiscal budget on vote intentions for government parties. The analysis of a unique dataset of annual, aggregate vote intentions in 15 OECD countries from 1978 to 2009 complements the survey analysis in two ways. First, it allows us to assess the external validity of the experimental results. Second, our dynamic panel model provides a long-term perspective that not only uncovers the immediate effect of fiscal consolidations and deficits on voters, but also their long-term effect over time.

The results from both analyses show that fiscal austerity leads to a considerable, immediate drop in vote intentions for the government. This is the case independent of the public budgetary situation, i.e. when the public budget is balanced or in deficit. At the same time, vote intentions increase if the fiscal balance improves, but only gradually and with a delay. Taken together, this means that the government can recover the popularity loss after austerity over time. This political recovery, however, rests on the assumption

that a temporary fiscal austerity episode translates one-to-one into a permanent improvement of the fiscal balance, which is controversially debated in the academic literature (Guajardo, Leigh and Pescatori, 2014). To the extent that the improvement of the fiscal balance is smaller or temporary, the government's political recovery after austerity is also smaller. Voters, thus, are not simply fiscal irresponsibles who do not care about public finances. Instead, voters' evaluation of fiscal policy are the result of an inter-temporal trade-off that is particularly large when the true value of fiscal consolidations is uncertain.

These findings uncover a fiscal-policy dilemma that leaves many governments trapped between deficits and austerity because of the countervailing effects that these two variables have on government vote intentions. If an electorally vulnerable governments passes austerity measures, it may not survive the next election. The subsequent government then reaps the long-term gains because it faces a lower fiscal deficit during its term. If the incumbent government does not pass austerity measures, it is stuck with a high fiscal deficit, which diminishes its fiscal room to maneuver in the future. Overall, the results cast doubt on previous, optimistic conclusions that fiscal consolidation has twin benefits for the economy and the government (Alesina, Perotti and Tavares, 1998; Alesina, Carloni and Lecce, 2011). Instead, fiscal consolidations bear substantial electoral risk for governments in addition to the economic costs that these policies can have (Guajardo, Leigh and Pescatori, 2011).

Our results differ from previous research that finds no or only weak and conditional effects of fiscal austerity on public opinion (Alesina, Perotti and Tavares, 1998; Kalbhenn and Stracca, 2015; Talving, 2017). These differences can be explained by the experimental design on the micro level and the choice of fiscal policy indicator on the macro level. The experiment addresses the problem that observational studies underestimate the effect of austerity on electoral risk because of the strategic behavior of governments (Hübscher, Sattler and Wagner, 2018). In addition, the existing macro-level studies measure austerity using changes in the cyclically adjusted primary fiscal deficit. This measure only partially reflects policy choices and, despite cyclical adjustment, also captures changes in the fiscal balance that are not related to policy. This is problematic because both components have oppositional effects on government political support. With an action-based indicator of fiscal adjustments, which has now become the standard in fiscal consolidation research (Devries et al., 2011; Alesina, Favero and Giavazzi, 2015; David and Leigh, 2018), we are able to identify these countervailing effects more accurately.

2 Political support in times of fiscal constraints

2.1 Two views on austerity

A large part of the political economy literature rests on the assumption that fiscal retrenchment is electorally risky (e.g., Immergut 1992; Pierson 1994, 2001; Jensen and Mortensen 2014). This assumption is motivated by the costs that these policies impose on important parts of the electorate. Policies that aim at reducing fiscal deficits by a meaningful amount require that governments cut spending across all major jurisdictions. In addition, spending cuts entail cutbacks in welfare and social security programs (Armingeon, Guthmann and Weisstanner 2016), which still enjoy high political support (Boeri et al., 2001; Blekesaune and Quadagno, 2003; Rehm, Hacker and Schlesinger, 2012). Since

voters in the political center benefit substantially from government-provided goods (e.g., Meltzer and Richard, 1981), it is difficult, if not impossible, to reduce fiscal deficits without alienating electoral groups that are pivotal for most governments.[1] In short, fiscal retrenchment is unpopular because it imposes considerable costs on the supporters of a government.

Although this claim had not been tested explicitly for a long time, different studies provide indirect evidence for it. For instance, governments use a variety of strategies to minimize punishment when they cut back on welfare state programs (Vis, 2013; Wenzelburger, 2014a,b). Examples are the strategic timing of consolidations (Hallerberg, 2004; Hübscher, 2016; Hübscher and Sattler, 2017), the obfuscation of reforms through reframing of policy changes or designing reforms in a way that the implications are only felt in the future. Relatedly, governments often use international organizations as scapegoats when they implement unpopular policy reforms and austerity measures (Vreeland, 2003; Dreher and Gassebner, 2012). These findings suggest that governments are very worried about the political costs that result from fiscal adjustments.

More recently, however, a series of studies directly tested this 'electoral risk assumption'. They do this by estimating the effect of fiscal retrenchment on election outcomes and government stability. The results stand in sharp contrast to the previous view. None of these studies finds evidence that fiscal retrenchment systematically reduces vote shares of government parties in the subsequent election or increases the risk of government termination (Alesina, Perotti and Tavares, 1998; Giger and Nelson, 2013; Alesina, Carloni and Lecce, 2011; Arias and Stasavage, 2018). At best, there is evidence for a variety of conditional punishment effects, e.g. when the opposition party successfully blames the government for fiscal retrenchment policies in its electoral campaign (Armingeon and Giger, 2008). The overarching conclusion drawn from these studies is that these policies do not increase electoral risk (Alesina, Lecce and Carloni, 2010).

These findings can be interpreted as evidence that voters are fiscal conservatives who disapprove of fiscal deficits (Peltzmann, 1992). Voters understand that governments face a budget constraint and are under pressure to gain macroeconomic credibility (Bodea, 2015; Sattler, 2013). Since investors consider the fiscal deficit a key indicator to judge the government's commitment to macroeconomic stability (Hallerberg and Wolff, 2008; Mosley, 2000), voters accept that they have to incur a cost in exchange for macroeconomic stability. Under standard assumptions of economic voting, voters then punish the government for fiscal deficits (Brender and Drazen, 2008). In contrast, they do not punish or even reward policymakers for implementing fiscal consolidation packages because they give them credit for solving an important problem (Giger and Nelson, 2011).

2.2   The deficit-austerity trade-off

How can these diverging findings be reconciled? Taken together, the two views point to a trade-off between deficits and austerity in fiscal policymaking. This trade-off exists

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[1]Data on fiscal consolidations show large fiscal adjustments generally cover a large range of measures that does not allow the government to impose all the burden on a subgroup of voters and spare the rest of the electorate. For concrete examples, see the consolidations in Spain in 1995 (Devries et al., 2011, p.70) or in Finland in 1992 (Hallerberg, 2004, p.145).

because both deficits and austerity negatively affect the utility of a typical voter: greater austerity also has costs because it negatively affects growth and personal disposable income; greater deficits have costs because the additional debt eventually needs to be repaid in the future. Moreover, fiscal deficits and austerity policies are directly linked. If a government cuts spending, the deficit is expected to decrease. To evaluate austerity policies, voters need to decide how much they weight deficits relative to austerity. Unless they put zero weight on deficits, the utility of austerity increases when the deficit becomes larger.

Two aspects complicate this simple evaluation mechanism for voters. First, the costs of austerity are felt immediately, while their postulated benefits often only materialize over time. Political research has long recognized the existence of such J-curve effects after economic reforms and the political challenge that they pose for governments (Przeworski, 1991). Even if voters are forward-looking and anticipate these benefits, they discount future gains compared to the contemporaneous costs that austerity has. The size of this intertemporal trade-off depends the discount factor of the voter and the speed in which austerity reduces the deficit. The more the voter values the future and the more quickly an austerity policy reduces the deficit, the greater the value of this policy for the voter.

Economic research confirms that there are good reasons to believe that such an intertemporal trade-off exists for austerity policies, especially when the economy is in a bad state. Generally, fiscal policy has the greatest effect on economic performance when the economy is not doing well (Corsetti, Meier and Müller, 2012; Ilzetzki, Mendoza and Végh, 2013). As a result, fiscal adjustments seriously reduce economic confidence and economic growth in such situations. Specifically, economic output declines sharply and the default premium on public debt increases during the first two years after a cut in public consumption when the economy is in a bad state (Born, Müller and Pfeifer, 2015). Economic growth and confidence recover and become positive afterwards. Economically, austerity, therefore, pays off in the long run, but has considerable costs in the short run.

Second, the economic effects of austerity are highly contested even among experts leaving voters uncertain about the true value of these policies. For our analysis, this means that it remains unclear to what extent austerity translates into a reduction of the deficit. Austerity can have negative effects on economic performance, which in turn reduces fiscal revenues. If this is the case, this offsets the positive, direct effect of austerity policies on the deficit. Voters who evaluate austerity policies, thus, need to take into account the possibility that the effect of austerity on the deficit is small, at least in the short term. When the expected positive effect of austerity on the fiscal balance diminishes, the voter's utility of austerity decreases.

The uncertainty about the true effect of austerity has its roots in the competing arguments that characterize the economics literature. Proponents of the so-called 'expansionary fiscal contraction thesis' claim that the aggregate costs of public spending cuts are small because they simultaneously increase economic confidence (Giavazzi and Pagano, 1990; Alesina, Favero and Giavazzi, forthcoming). This view is increasingly contested, however. Based on new empirical data, a series of studies concludes that spending cuts have strong and detrimental effects on economic growth (Chowdhury and Islam, 2012; Guajardo, Leigh and Pescatori, 2014). This insight has again been questioned by more

recent, follow-up analyses (Alesina, Favero and Giavazzi, forthcoming).[2] This shows how difficult it is even for experts to agree on the true effects of fiscal consolidations.[3]

Although it is not the purpose of this paper to evaluate the diverging positions in the economic literature, this debate is important for voter evaluations of the deficit-austerity trade-off. The controversy highlights how uncertain voters must be about the economic value of fiscal consolidations. Popular evaluations of fiscal consolidations center on the question to what extent and how quickly these policies reduce fiscal deficits and increase macroeconomic stability. It is difficult, if not impossible, for voters to evaluate the future benefits and the economic value of these policy if even experts strongly disagree on their effects. Poorly informed voters are unlikely to have the expertise to properly judge the future effects of fiscal policy (Hellwig and Marinova, 2015).[5]

2.3 Implications

When the prospective, aggregate benefits of fiscal consolidations are uncertain, voters are likely to weight the immediate costs more. It is, thus, plausible that they punish governments and withdraw their support for government parties after a fiscal austerity package. When the benefits of fiscal austerity become visible, however, and the fiscal balance improves, the long-term benefits start to outweigh the short-term costs of austerity. Voters, then, gradually revise their initial judgments, and government support recovers over time as the state of the public budget improves. This political recovery, however, requires that a temporary fiscal austerity episode in fact translates into a permanent improvement of the fiscal balance. To the extent that the improvement of the fiscal balance is smaller or temporary, the government's political recovery is also smaller.

This mechanism suggests that there is no empirically observable effect of consolidations on elections although the electoral risk arising from consolidations can be substantial. If the government anticipates the costs and decides that it affects its reelection chances too much, the government has an incentive to stop consolidation and engage in forbearance (Gandrud and Hallerberg, 2015; Hübscher and Sattler, 2017). In other words, the government minimizes the impact of consolidations on elections and reduces its risk to be replaced in office. In contrast, if fiscal consolidations do not bear any electoral risk as suggested by the previous literature, we should not see any drop in public opinion after a consolidation package. This conjecture serves as the null hypothesis for our analysis.

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[2]To a considerable extent, this debate centers on questions of empirical measurement and modeling (Devries et al., 2011; Alesina, Favero and Giavazzi, 2015).

[3]This academic controversy about the short- and long-term costs and benefits of fiscal consolidations directly feeds into policy debates.[4] The publications of the most important policymaking institutions also reflect these disagreements. In the past, the Monthly Bulletins of the European Central Bank explicitly and consistently referred to the idea that fiscal consolidations have small costs, but large benefits (e.g., ECB, 2004). Since 2012, however, the reference to absence of short-term costs has disappeared, and the ECB now primarily highlights the long-term benefits (e.g., ECB, 2013). Similarly, researchers at the IMF now increasingly question that the common orthodox economic policy recommendation are adequate in many cases (Ostry, Loungani and Furceri, 2016).

[5]This is consistent with models of fiscal policymaking that assume that voters are poorly informed about the true state of the economy and only learn about the economic outcomes, such as fiscal deficits, with a delay (Rogoff and Sibert, 1988).

HYPOTHESIS H_{1a}: Vote intentions for government parties drop immediately after the government implemented a fiscal consolidation package.

HYPOTHESIS H_{1b}: The effect of the public budget on the relationship between fiscal consolidations and vote intentions is small in the short term.

HYPOTHESIS H_2: Vote intentions gradually recover when voters observes that the fiscal balance improves.

3 Micro analysis

3.1 Research design

The first part of our analysis examines the trade-off between fiscal deficits and austerity on the micro level. This experiment provides us with a snapshot of voter responses to austerity in a particular country. In order to do so we rely on a population-based online survey experiment. Micro-level data collected through an online survey experiment allow us to directly assess voters' reaction to a policy proposal in a specific economic context. Due to the fact that respondents are randomly assigned to one of the scenarios presented below, we can identify the average causal effect that a specific government policy has on voters' approval of government policy and their vote intentions for government parties.

The limited external validity posits a potential drawback of population-based survey experiments. The observational analysis in the next section, thus, is useful to assess the external validity of the results from the experiment in this section. In addition, we conduct the surveys in three advanced economies – Australia, Germany and the USA – that all experienced significant variation in budgetary deficits and episodes of fiscal consolidation in the past. While sharing similarities on the economic dimensions, they widely differ regarding their institutional settings and current political discourses. Furthermore, they are embedded in different regional economic settings. We therefore expect the results to be indicative of a wider range of countries, which increases the external validity of the study.[6]

For the survey experiment, we use a randomized vignette design. In such an experiment, respondents are assigned to read a scenario that describes a specific situation, event, or government decision (e.g., Schleiter and Tavits, 2018; Malhotra and Margalit, 2010). Most scenarios embedded in an online survey experiment vary in only one or two dimensions, which has the advantage that such experiments are relatively simple to implement and the trade-offs are clear to the reader. After reading the scenario, the respondents are then asked a series of questions, usually to evaluate government performance and decisions.

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[6]The survey has been carried out during the first half of August 2018. The survey was administered by respondi, who cooperated with domestic survey firms in Australia and the US, respectively. In each country, we collected a sample of around 1.000 respondents. The sample is stratified by gender and age.

Imagine the following, possible scenario taking place in the future, in 2019. The [Country] [*Vignettes 1 and 3:* **'public household' is balanced, i.e. there is no public deficit** / *Vignettes 2 and 4:* has experienced a **sizeable deficit in the public budget**]. In a televised speech, the [Prime Minister / President / Chancellor] announces the economic plans of the government.

Vignette 1: The [Prime Minister / President / Chancellor] says that the government will **not change current fiscal policy** given the balanced budget. Specifically, the government will **undertake no change in spending on public and social services**, such as state pensions, unemployment benefits, public infrastructure, and public healthcare, and **no change in taxation**.

Vignette 2: The [Prime Minister / President / Chancellor] says that the government will **not change current fiscal policy** despite the budget deficit. Specifically, the government **undertake no change in spending on public and social services** [...] and **no change in taxation**.

Vignette 3: The [Prime Minister / President / Chancellor] says that the government will **adjust current fiscal policy** to address the public deficit. Specifically, the government will **reduce spending on public and social services** [...] and **increase taxes**.

Vignette 4: The [Prime Minister / President / Chancellor] says that the government will **adjust current fiscal policy** to ensure that the budget remains balanced. Specifically, the government will **reduce spending on public and social services** [...] and **increase taxes**.

In our survey experiment, we expose respondents to different fiscal situations, in which governments are either facing a sizeable public deficit or a balanced public budget. In reaction to this situation, the head of government then announces the economic policy plans of the government, given the budgetary situation. The government can either leave fiscal policy unchanged, or it can adjust fiscal policy and implement a fiscal consolidation package. A fiscal policy package always entails a mix of spending cuts and tax increases, which corresponds to a typical fiscal consolidation package that we see in practice (Devries et al., 2011). The exact wording of the scenario and the different vignettes are shown in the box above.

After reading the scenario, respondents were asked whether they approve of the proposed policy and whether they would vote for the incumbent should an election be held after the announcement. The exact follow-up questions are: 'To what extent would you approve of this announcement?' and 'Would you vote for the prime minister in an election held after this announcement?' The responses to these questions are the outcome variables in our analysis.

Since our theory suggest that – on average – voters weigh the costs of austerity more than potential future benefits, we expect the following reactions of respondents when they learn about a specific scenario: respondents should be most satisfied with the government if there is no public deficit and the government does not implement austerity measures (Vignette 1), followed by a situation, in which the government announces not to implement austerity measures despite the existence of a sizeable deficit (Vignette 2). We expect a stronger negative reaction by the group who was exposed to the scenario with a

government implementing austerity to address a budget deficit (Vignette 3). Respondents who see a scenario, in which a government with a balanced public household announces to implement austerity should be least satisfied with the government (Vignette 4).

3.2 Results

Table 1 shows the basic results from this experiment. The numbers in each cell represent the percentage of respondents in each treatment group who intend to vote against the government. The number in brackets indicates the number of respondents in the particular treatment group. We show the numbers for each country separately in each cell. For instance, the numbers in the upper left cell show how many of those respondents who have seen a no deficit / no consolidation scenario say that they will vote against the government. The numbers in the lower right cell show how many of those respondents who have see a deficit / consolidation scenario say that they vote against the government.

In all countries, respondents are much more likely to vote against the government when the government announces fiscal consolidation measures than when it does not. Specifically, the share of respondents who say that they will vote against the government is much larger in both cells in the bottom row, which are the two scenarios in which the government announces to consolidate. This share is smaller in the two cells in the top row when the government announces not to consolidate. In Australia and Germany, the difference in vote intentions between consolidation and no consolidation is almost identical and varies between 17 and 18 percentage points. In the U.S., the differences diverge more, between 20 percentage points for the no-deficit situation and 14 percentage points for the deficit-situation.

Table 1: Percentage of respondents voting against government within a particular treatment group

| | | Deficit | |
		No	Yes
Consolidation	No	Australia: 56% ($n = 232$) Germany: 73% ($n = 264$) United States: 38% ($n = 226$)	Australia: 52% ($n = 246$) Germany: 67% ($n = 236$) United States: 42% ($n = 234$)
	Yes	Australia: 73% ($n = 228$) Germany: 91% ($n = 275$) United States: 58% ($n = 213$)	Australia: 70% ($n = 219$) Germany: 84% ($n = 263$) United States: 56% ($n = 234$)

Interestingly, respondents' assessments of austerity policies does not change much when fiscal balance varies. In all countries, respondents object against consolidation no matter if there is no or a sizeable public deficit. For Australia and Germany, respondents are even less likely to vote against the government that does not consolidate if there is a fiscal deficit. But as we will see below, this difference is not statistically significant. For the U.S., respondents are slightly more likely to vote against a government that does not consolidate if there is a fiscal deficit. In all countries, respondents vote more against a

government that chooses to consolidate if the fiscal situation is good.

In the next step, we estimate a series of empirical models that examine more formally how the different treatments affect approval with the announced policy and vote intentions. Figure 1 presents the marginal effects from these estimations. For policy approval, greater numbers indicate more disapproval with the policy that the government announced. For vote intentions, greater numbers indicate a higher probability to vote against the government. The reference category in all analyses is the scenario in which there is no fiscal deficit and the government does not consolidate. The plots, therefore, indicate how approval and vote intentions change for the scenario listed on the y-axis compared to the no-deficit / no-consolidation scenario (listed on top of the y-axis).

Figure 1 confirms the basic results from table 1. With the exception of Germany, average policy approval is the same when the government announces not to change fiscal policy in a situation with and without a deficit. For Germany, policy approval is greater when the government announces to keep fiscal policy unchanged despite the deficit. For vote intentions, however, the difference between the two no-consolidation scenarios is not statistically significant also for Germany. The predicted disapproval with government policy increases substantially when the government announces fiscal consolidation measures. This disapproval translates into significant increases in the probability of voting against the government. Specifically, the probability of voting against the government increases by more than 10 percentage points compared to the reference category in all countries.

The results are strikingly similar in all three countries. Despite the similar marginal effects, the countries differ in terms of their absolute vote intentions for governments, as we can see in table 1. In Germany, a large share of voters intends to vote against the government, independent of the economic situation and the economic policy announced. In Australia and the U.S., these number are more evenly distributed.

Overall, these first results are in line with the implications of our theoretical discussion. They show that voters weight the immediate costs of fiscal consolidation policies much more than their potential future benefits on the fiscal balance. This is the case even if the scenario describes a situation, in which the government faces a sizeable public deficit. This result is in line with the view that the economic benefits of fiscal consolidation measures are unclear to ordinary citizens, and voters, therefore, object against them.

More broadly, these results uncover a fiscal policy dilemma that many governments face. A government would ideally be in a situation, in which it does not need to implement fiscal consolidation measures because the the public budget is balanced. This situation corresponds to the top left cell in table 1 or the top row in figure 1. Although political support in this situation is not necessarily greater than when the fiscal deficit is high and the government does not consolidate, a balanced budget has a number of advantages for the government. For instance, a government with a balanced budget would have greater fiscal room to move in case of an unexpected, negative economic shock. It, therefore, is safe to assume that the situation in the top left cell is the preferred one from the government's perspective.
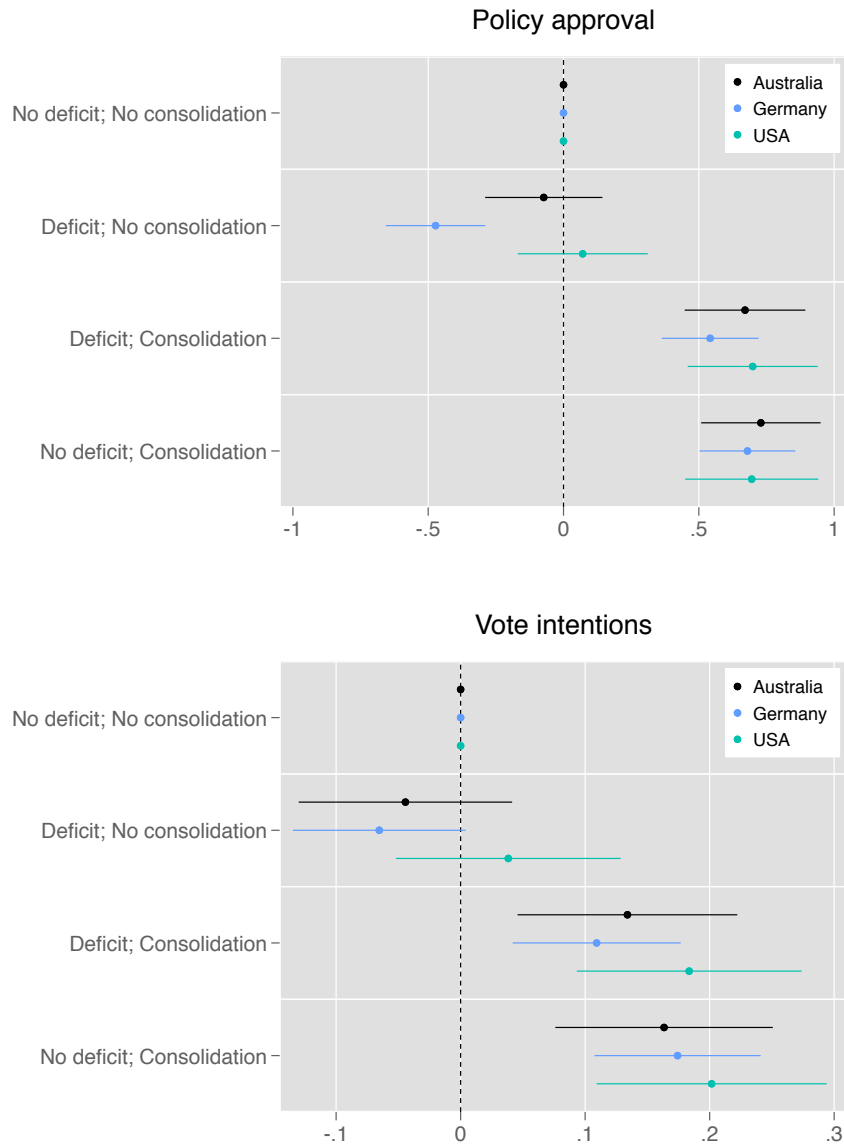
Figure 1: Impact of fiscal deficit and consolidation on policy approval and vote intentions; no deficit / no consolidation is the reference category.

If, however, the government faces a large fiscal deficit, it cannot get to the upper left cell in table 1 without incurring significant political costs, at least temporarily. If the deficit is large, the government has the choice between the no consolidation and consolidation in the upper right and the lower right cells, respectively. The latter, however, is associated with much greater political costs than the former. It is obvious that a short-sighted government that faces electoral risk will minimize political costs and choose not to consolidate. It is trapped because it cannot get out of the high-deficit situation by itself. Only a government with a sufficient electoral margin would be willing to incur the political costs of consolidation in order to find itself in the top left cell at a later point in time.

4 Macro analysis

4.1 Research design

To complement the experimental micro study, we estimate the effect of fiscal consolidations on aggregate vote intentions using observational time series data from fifteen fifteen industrialized countries between 1978 and 2009.[7] The analysis of continuous, annual government vote intentions has the advantage that we can assess the dynamic effect of fiscal policy decision: it shows how much a fiscal consolidation package affects vote intentions in the year when the package is passed; and it shows how much and for how long the consolidation package continues to affect support over the subsequent years. The observational analysis, thus, not only examines the external validity of our experimental results. It also adds a dynamic component to the static analysis in the previous section.

The dependent variable of our empirical analysis is aggregate vote intentions for government parties. We compile a new data set of annual vote intentions from various sources and match it with information about government composition from Andersson, Bergmann and Ersson (2012). One building block of the dataset are country-specific surveys from survey organizations and polling firms. Another building block are international surveys such as Eurobarometer data. To increase the consistency of the data over time, we prioritize sources that offer longer time series of vote intentions data for any given country. As a rule, the latest available data point in a year is selected to make sure that the respondents incorporated all government policy choices throughout the calendar year when evaluating government parties.[8] To our knowledge, this is the most encompassing dataset of vote intentions that was compiled to examine the political effects of economic policy.

To measure our main independent variable, fiscal consolidation, we rely on the so-called 'action-based' data, which originally were collected by the IMF (Devries et al., 2011) and later revised by Alesina, Favero and Giavazzi (2015). The action-based measure qualitatively identifies the timing and magnitude of fiscal consolidation packages from a variety of policy documents by governments and international organisations. In-

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[7]Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

[8]For country-specific polls with a monthly frequency, we usually use the December value. For Eurobarometers, we use the results from the second survey in each year, which was usually collected in November.

formation on consolidation policies is retrieved from budgetary speeches of government members, national budget reports, OECD Economic Surveys and IMF Staff reports. In our view, this action-based measure captures our concept of fiscal consolidation more adequately than the previously used measures. It more directly reflects the conscious political decisions and announcements by governments to address fiscal problems.[9] The 'action-based' indicators now have become the standard measure in the literature (e.g., Armingeon, Guthmann and Weisstanner, 2016; Alesina, Favero and Giavazzi, forthcoming).[10]

To measure the fiscal balance, we used various indicators from different sources. Ultimately, we decided to use the primary fiscal balance, which shows the strongest impact on vote intentions. Following the standard literature on economic voting, we also control for economic growth and inflation. We also include a variable that captures 'honeymoon' effects and a linear counter that examines to what extent satisfaction with the government declines over time, the longer a prime minister is in office. Data for the fiscal balance, growth and inflation is from Armingeon et al. (2012). Information on governments and prime ministers is from Andersson, Bergmann and Ersson (2012).

We use a dynamic panel model to estimate the effect of fiscal consolidations and the fiscal balance on vote intentions as specified by

$$\text{Vote}_{i,t} = \alpha_0 + \alpha_1 \text{Vote}_{i,t-1} + \alpha_2 \text{FCons}_{i,t} + \alpha_3 \text{FBal}_{i,t-1} + \alpha_4' \mathbf{X_{i,t}} + \mu_i + d_t + \epsilon_{i,t} \qquad (1)$$

where i refers to the panel unit and t represents a year. $\mathbf{X_{i,t}}$ is a vector with the control variables, μ_i are panel-specific unobserved effects and $\epsilon_{i,t}$ is an error term. An important component of our analysis is the AR(1) term to model the dynamics of the time series. It captures how a change in the explanatory variables affects vote intentions over time. For instance, it reflects how a fiscal consolidation package influences vote intentions in the years after the package was implemented. Equation (1) can be estimated with standard fixed-effects methods using the within-transformation or country dummies (Wooldridge, 2010, ch. 10.5). Alternatively, it is possible to use first-differencing methods (Wooldridge, 2010, ch. 10.6): if $\text{Vote}_{i,t-1}$ is subtracted from both sides of the equation, we get the same specification in differences without the panel-specific constant,

$$\Delta\text{Vote}_{i,t} = \alpha_1 \Delta\text{Vote}_{i,t} + \alpha_2 \Delta\text{FCons}_{i,t} + \alpha_3 \Delta\text{FBal}_{i,t-1} + \alpha_4' \mathbf{\Delta X_{i,t}} + \Delta d_t + \Delta\epsilon_{i,t} \qquad (2)$$

The results from (2) are interpreted in the same way as those in (1).[11]

We present results from both estimation methods because they have different advantages. First-differencing is more attractive when explanatory variables are not strictly, but sequentially exogenous (Wooldridge, 2010, ch. 11).[12] In principle, both fixed-effects

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[9]'Action-based' consolidation needs to be legislated by the parliament, which generally spurs public debate. This provides the electorate with information to form an opinion about the desirability of austerity policy and their personal and national economic implications.

[10]We compare the relationship of our measure with previously used indicators in greater detail in the Appendix.

[11]See Wooldridge (2010)

[12]Strict exogeneity means that the error are uncorrelated with past, current and future values of the explanatory variables. Sequential exogeneity means that the error is uncorrelated with past and current, but not necessarily with future values of the explanatory variables.

and first-differencing methods require that the explanatory variables are strictly exogenous, which is not the case for the lagged dependent variable and possibly not for the fiscal consolidation variable.[13] In this case, past values of the sequentially exogenous variable can be used as instruments to get consistent coefficient estimates. We compare the results from these instrumental-variables estimations to those from fixed-effects methods. These are still useful because the bias from violation of strict exogeneity is small when the number of time periods is large (Wooldridge, 2010, p. 302).[14]

4.2 Results

Table 2 shows the results from our analysis. For the first-difference model, we instrument the lagged dependent variable with its lagged level as suggested by Wooldridge (2010). Following Alesina, Favero and Giavazzi (2015), we distinguish between unexpected fiscal consolidations that were announced and implemented in the same year ($FCons_t^u$) and those that were announced in one year and implemented in a later year ($FCons_t^a$). We also use the sum of these two variables because unexpected and announcement of future consolidations often occur together.

The results from the fixed-effects and first-differences models in columns (1) and (6) show that fiscal consolidations strongly reduce vote intentions. The magnitude of the effect is quite consistent across models. The estimates from the fixed-effects model suggests that vote intentions drop by ca. 1.6 percentage points if the government implements an unexpected consolidation package of 1% of GDP. The estimate for the first-differences model is 1.35 percentage points. The effect of an announced, future consolidation is not statistically significant for the fixed-effects model, but for the first-differences model. When the sum of unexpected and announced, future consolidations is considered in columns (2) and (7), the effect is almost identical across models.

The results in columns (3) and (8) show the effect on the fiscal balance on vote intentions ignoring fiscal consolidations. Consistent with the previous literature (Brender and Drazen, 2008), the fiscal balance has a positive effect on vote intentions: when the fiscal balance improves, or the deficit diminishes, vote intentions increase. This effect, however, only materializes with a delay of one year. We tested multiple specifications, but only the lagged fiscal balance showed a statistically significant result. This is consistent with the assumption that voters observe the fiscal balance only with a delay. The impact of the fiscal balance is stronger for the first-differences than for the fixed-effects model.

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[13]Sequential exogeneity occurs when the explanatory variable is influenced by past, but not contemporaneous or future values of the dependent variable (Wooldridge, 2010, p. 301). This is consistent with previous findings that past election results affect the distribution of retrenchment policies over the legislative term (Immergut and Abou-Chadi, 2014; Hübscher and Sattler, 2017).

[14]We have up to more than 30 years for each country.

Table 2: Effect of consolidation on vote intentions

	Levels (equation 1)					First Differences (equation 2)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pop_{t-1}	0.745***	0.748***	0.755***	0.746***	0.750***	0.767***	0.769***	0.833***	0.775***	0.777***
	(0.060)	(0.058)	(0.054)	(0.059)	(0.056)	(0.162)	(0.166)	(0.181)	(0.157)	(0.160)
FCons_t^u	-1.593***			-1.429***		-1.349***			-1.187**	
	(0.388)			(0.436)		(0.510)			(0.529)	
FCons_t^a	-0.409			-0.088		-1.121**			-1.047*	
	(0.570)			(0.582)		(0.531)			(0.539)	
$\text{FCons}_t^{(a+u)}$		-1.306***			-1.116***		-1.282***			-1.145***
		(0.325)			(0.365)		(0.400)			(0.401)
FBal_{t-1}			0.334***	0.248**	0.232**			0.609***	0.470***	0.471***
			(0.106)	(0.110)	(0.109)			(0.173)	(0.165)	(0.164)
Growth_t	0.529***	0.539***	0.631***	0.531***	0.542***	0.257	0.257	0.337	0.332	0.331
	(0.148)	(0.144)	(0.169)	(0.149)	(0.144)	(0.210)	(0.209)	(0.237)	(0.212)	(0.211)
Inflation_t	0.096	0.110	0.160	0.103	0.118	0.278	0.280	0.294	0.286	0.287
	(0.104)	(0.102)	(0.124)	(0.106)	(0.104)	(0.242)	(0.241)	(0.224)	(0.237)	(0.236)
Honey_t	1.325*	1.361*	1.078	1.329*	1.370*	0.947	0.965	0.665	0.827	0.838
	(0.708)	(0.720)	(0.761)	(0.702)	(0.712)	(1.070)	(1.083)	(1.103)	(1.042)	(1.054)
PMcount_t	-0.119	-0.126	-0.125	-0.132	-0.139	0.006	0.006	-0.023	-0.024	-0.023
	(0.110)	(0.110)	(0.098)	(0.102)	(0.102)	(0.214)	(0.215)	(0.221)	(0.213)	(0.213)
Country FE	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—
K.-P. LM	—	—	—	—	—	10.36	9.77	9.39	10.31	9.72
K.-P. F	—	—	—	—	—	19.38	18.26	18.14	19.09	18.02
10% max IV bias	—	—	—	—	—	—	—	—	—	—
p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000
N	436	436	436	436	436	410	410	410	410	410

All models include year-fixed effects. Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. In first-differences model, AR(1) term is instrumented with its lag. First-equation results for these estimations are in the Appendix.

Table 3: Effect of consolidation on vote intentions – IV regressions

	First Differences				System GMM			
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Pop_{t-1}	0.696***	0.707***	0.708***	0.717***	0.669***	0.683***	0.678***	0.689***
	(0.121)	(0.130)	(0.123)	(0.130)	(0.076)	(0.069)	(0.074)	(0.069)
FCons_t^u	-3.020***		-2.747***		-2.643***		-2.396***	
	(0.802)		(0.786)		(0.518)		(0.479)	
FCons_t^a	-0.886		-0.946		-0.179		-0.154	
	(0.802)		(0.832)		(0.657)		(0.661)	
$\text{FCons}_t^{(a+u)}$		-2.555***		-2.356***		-2.090***		-1.913***
		(0.789)		(0.763)		(0.492)		(0.484)
FBal_{t-1}			0.328*	0.325*			0.245	0.218
			(0.172)	(0.183)			(0.175)	(0.170)
Growth_t	0.281	0.275	0.331*	0.325*	0.391**	0.389**	0.405**	0.400**
	(0.201)	(0.189)	(0.201)	(0.189)	(0.174)	(0.171)	(0.179)	(0.176)
Inflation_t	0.256	0.274	0.264	0.280	-0.023	-0.017	0.004	0.006
	(0.273)	(0.270)	(0.267)	(0.265)	(0.185)	(0.172)	(0.181)	(0.169)
Honey_t	0.930	1.121	0.858	1.020	1.603**	1.724**	1.567**	1.678**
	(1.000)	(1.044)	(0.988)	(1.020)	(0.786)	(0.778)	(0.779)	(0.769)
PMcount_t	-0.007	-0.004	-0.026	-0.024	-0.174	-0.176	-0.184	-0.185
	(0.210)	(0.214)	(0.206)	(0.210)	(0.148)	(0.144)	(0.142)	(0.139)
p	0.000	0.001	0.000	0.002	0.000	0.000	0.000	0.000
N	410	410	410	410	436	436	436	436

All models include year-fixed effects. Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. AR(1) term and fiscal consolidation variable are instrumented with their lags. First-equation results are in the Appendix.

When we estimate the full model with both the fiscal consolidation and the fiscal balance variables as shown in columns (4)-(5) and (9)-(10), the substantive results remain the same. The effect of both fiscal consolidations and the fiscal balance on vote intentions decreases slightly, but more so for the fiscal balance. Overall, we can conclude that fiscal consolidations have a strong negative effect on political support for the government. The fiscal balance has the opposite effect, but only with delay when voters observe how the fiscal balance develops over time.

The estimations in table 2 do not account for the possibility that declining popularity reduces the probability that a government implements austerity. If this is the case, the results in table 2 underestimate the effect of fiscal consolidations on popularity. We, therefore, use a (simple) instrumental-variables approach that uses the lagged level of fiscal consolidation as an instrument for changes in fiscal consolidations in the first-differences model. We are aware that this analysis rests on restrictive assumptions that are hard to satisfy and interpret the results with caution. We also estimate the models using System GMM, which combines the models in levels and first differences and also relies on internal instruments (Wooldridge, 2010). The results in table 3 are consistent with our expectations. The effect of fiscal consolidations is larger compared to the models in table 2. A one-unit increase in consolidation now reduces vote intentions by ca. 2 percentage points or more.

This effect is robust across a large range of other specifications and interactions, which can be found in the Appendix. In short, there is no evidence that the effect differs for tax- or spending-based consolidations. We do not find evidence that government partisanship or the size of the fiscal balance mediates the effect of consolidations on vote intentions. Governments are punished less if they consolidate during honeymoon phases, but the general effect remains stable. We do not find an effect for other, potential intervening variables, including the legislative cycle, the number of government parties or overall political constraints.

Finally, we examine the trade-off between fiscal consolidations and the fiscal deficit directly in a simulation. The coefficients on the fiscal consolidation and the fiscal deficit variables are directly comparable because both variables have the same units. Specifically, the consolidations variable reflects by how much the government consolidates the budget, as % of GDP. Similarly, the fiscal balance indicates by how much the public budget is in surplus or deficit, as % of GDP. We exploit this by examining how a fiscal consolidation of a pre-specified size affects government popularity directly and indirectly via its (potential) effect through the fiscal balance. We also compare these directs and indirect effects over time.

Figure 2 presents the simulated, dynamic effects of fiscal consolidations and the fiscal balance on vote intentions. The top graph in this figure shows that vote intentions after fiscal consolidation first drop and then slowly recover. In contrast, vote intentions after an improvement of the fiscal balance slowly increase. The bottom graph shows how these two effects offset each other over time: vote intentions recover after voters notice the positive effect of fiscal consolidation on the fiscal balance. However, this simulation is based on a few important assumptions. It assumes that a fiscal consolidation package of 2% of GDP translates one-to-one into an improvement of the fiscal balance by 2% of
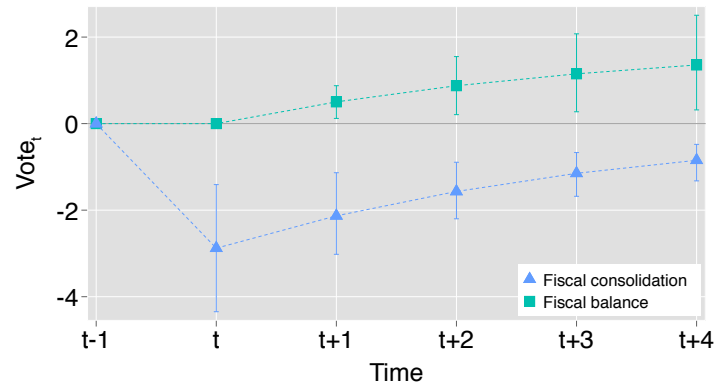
(a) Isolated effect of fiscal consolidation and improvement of fiscal balance (2% of GDP for both)
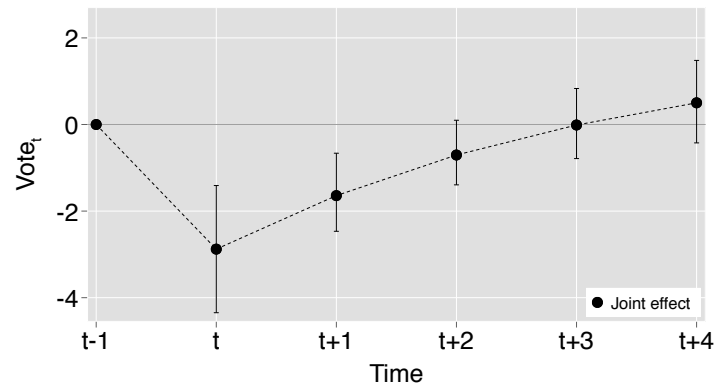
(b) Combined effect via both consolidation and fiscal balance (2% of GDP)

Figure 2: Simulated effect of fiscal consolidation and fiscal balance on vote intentions (point predictions with 95% confidence intervals); the simulation is based on the estimation results from model (4) in table 2.

GDP. This assumption may not hold in many cases. To the extent that the improvement of the fiscal balance is smaller or temporary, vote intentions recover less and more slowly.

Overall, the conclusions from the macro analysis match the conclusions from the micro analysis. Again, we find that governments are trapped when they face a high fiscal deficit. Government can benefit politically in the long term if they manage to reduce the fiscal deficit. In the short-term, however, austerity policies that aim at cutting the deficit are politically risky. They significantly reduce vote intentions for government parties and hence increase the electoral risk that the government faces. Clearly, a government that is electorally vulnerable will minimize electoral punishment by avoiding fiscal consolidations and, therefore, is stuck with the fiscal deficit.

5   Conclusion

This paper examines the question whether fiscal consolidations negatively affects political support for governments. The answer to this question is not a 'loud no' as previously suggested (Alesina, Perotti and Tavares, 1998, p. 198), but rather a 'solid yes'. Using different micro- and macro-level research strategies, we find that vote intentions for government parties drop significantly after fiscal consolidations. Support gradually recovers in the long term if no further consolidation policies are implemented. This recovery is greater, the more the consolidation leads to an improvement of the public budget.

Our findings point to a serious dilemma in fiscal policymaking that many, if not most, governments face. The results show that governments can minimize short-term political costs when they avoid fiscal consolidations, even when the fiscal deficit is large. Only governments with a strong political cushion, therefore, would take the risk and implement an austerity package in order to enjoy the potential, long-term economic and political benefits. In contrast, electorally vulnerable governments are stuck with the fiscal deficit because it is too risky for them to implement austerity measures.

If anything, our analysis still underestimates the true level of political backlash in the aftermath of unpopular reforms. Politicians can recur to a variety of strategies in the face of electoral punishment: next to timing unpopular reforms strategically, they can try to hide them or opt to avoid them completely. Our analysis also abstracts from international interactions. The fiscal consolidations in Europe entailed bargaining of governments with their own electorate as well as supranational actors. We also ignore the broader disruptions in political systems in the aftermath of consolidation. Large-scale consolidations can leave a political vacuum when a large segment of voters strongly opposes these policies (Grittersová et al., 2016). If a new political party provides a credible alternative, then the electoral base of government parties can shrink for a long time.

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A   Appendix

A.1   First-stage regressions

Table A1: First-stage regressions for models in table 1

	(6)	(7)	(8)	(9)	(10)
Pop_{t-2} (level)	-0.121***	-0.122***	-0.122***	-0.121***	-0.122***
	(0.028)	(0.028)	(0.029)	(0.028)	(0.029)
FCons_t^u	-0.299			-0.303	
	(0.236)			(0.233)	
FCons_t^a	0.574			0.572	
	(0.447)			(0.452)	
$\text{FCons}_t^{(a+u)}$		-0.046			-0.047
		(0.235)			(0.237)
FBal_{t-1}			0.002	-0.010	-0.004
			(0.171)	(0.173)	(0.172)
Growth_t	0.249	0.247	0.247	0.247	0.246
	(0.180)	(0.182)	(0.176)	(0.174)	(0.178)
Inflation_t	-0.125	-0.118	-0.118	-0.125	-0.118
	(0.134)	(0.133)	(0.133)	(0.135)	(0.133)
Honey_t	-1.162**	-1.100**	-1.108**	-1.159**	-1.099**
	(0.572)	(0.551)	(0.548)	(0.566)	(0.542)
PMcount_t	-0.222	-0.222	-0.222	-0.221	-0.222
	(0.164)	(0.167)	(0.164)	(0.163)	(0.165)
N	410	410	410	410	410

All models include year-fixed effects. Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All variables are differenced, except Pop_{t-2}, which is the instrument.

Table A2: First-stage regressions for models in table 2

	(11)			(12)		(13)			(14)	
	Pop_{t-1}	FCons^u_t	FCons^a_t	Pop_{t-1}	$\text{FCons}^{(a+u)}_t$	Pop_{t-1}	FCons^u_t	FCons^a_t	Pop_{t-1}	$\text{FCons}^{(a+u)}_t$
Pop_{t-2} (level)	-0.125***	0.003	0.001	-0.126***	0.004	-0.125***	0.003	0.001	-0.126***	0.004
	(0.031)	(0.002)	(0.001)	(0.032)	(0.002)	(0.032)	(0.002)	(0.001)	(0.032)	(0.002)
FCons^u_{t-1} (level)	-0.978***	-0.561***	-0.024			-1.054***	-0.550***	-0.018		
	(0.243)	(0.079)	(0.023)			(0.281)	(0.078)	(0.026)		
FCons^a_{t-1} (level)	-1.581***	-0.472***	-0.626***			-1.632***	-0.465***	-0.622***		
	(0.507)	(0.104)	(0.061)			(0.524)	(0.107)	(0.060)		
$\text{FCons}^{(a+u)}_{t-1}$ (level)				-1.112***	-0.699***				-1.185***	-0.685***
				(0.247)	(0.103)				(0.278)	(0.106)
FBal_{t-1}						0.152	-0.022	-0.013	0.158	-0.030
						(0.195)	(0.030)	(0.016)	(0.196)	(0.035)
Growth_t	0.201	-0.017	-0.009*	0.203	-0.025	0.223	-0.021	-0.011**	0.226	-0.029
	(0.175)	(0.017)	(0.005)	(0.178)	(0.020)	(0.168)	(0.020)	(0.006)	(0.171)	(0.023)
Inflation_t	-0.163	-0.029	0.002	-0.163	-0.027	-0.164	-0.029	0.002	-0.163	-0.027
	(0.126)	(0.051)	(0.007)	(0.125)	(0.057)	(0.127)	(0.050)	(0.007)	(0.126)	(0.055)
Honey_t	-1.368***	-0.046	0.049	-1.326**	0.039	-1.417***	-0.039	0.053	-1.378***	0.049
	(0.525)	(0.061)	(0.043)	(0.515)	(0.090)	(0.525)	(0.059)	(0.041)	(0.516)	(0.086)
PMcount_t	-0.255	-0.012	-0.007	-0.252	-0.016	-0.267	-0.010	-0.006	-0.264	-0.013
	(0.173)	(0.011)	(0.007)	(0.171)	(0.017)	(0.169)	(0.011)	(0.007)	(0.168)	(0.016)
N	410	410	410	410	410	410	410	410	410	410

All models include year-fixed effects. Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All variables are differenced, except Pop_{t-2}, FCons^u_{t-1}, FCons^a_{t-1} and $\text{FCons}^{(a+u)}_{t-1}$, which are the excluded instruments.

A.2   Additional analyses

Table A3: Effect of consolidation on vote intentions – interactions

	Levels				First Differences			
	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Pop_{t-1}	0.750***	0.751***	0.746***	0.749***	0.775***	0.773***	0.776***	0.726***
	(0.059)	(0.059)	(0.060)	(0.057)	(0.159)	(0.151)	(0.157)	(0.162)
$\text{FCons}_t^{(a+u,spend)}$	-1.120**				-1.255***			
	(0.423)				(0.396)			
$\text{FCons}_t^{(a+u,tax)}$	-1.101*				-0.845			
	(0.536)				(0.830)			
$\text{FCons}_t^{(a+u)}$		-1.246**	-1.480**	-1.222**		-1.297***	-0.973**	-1.086***
		(0.465)	(0.544)	(0.511)		(0.388)	(0.429)	(0.377)
$\text{Spend}_t\text{-Tax}_t$		0.821				1.151**		
		(0.669)				(0.569)		
$\text{FCons}_t^{(a+u)} * (\text{Spend}_t\text{-Tax}_t)$		-0.015				0.128		
		(0.243)				(0.290)		
FBal_{t-1}	0.232*	0.244**	0.300**	0.233*	0.479***	0.474***	0.575***	0.461***
	(0.112)	(0.112)	(0.133)	(0.112)	(0.165)	(0.158)	(0.180)	(0.157)
$\text{FCons}_t^{(a+u)} * \text{FBal}_{t-1}$			-0.116				-0.275	
			(0.090)				(0.172)	
Leftright_t				-0.295				3.243**
				(1.775)				(1.388)
$\text{FCons}_t^{(a+u)} * \text{Leftright}_t$				1.382				-0.841
				(2.274)				(1.952)
Growth_t	0.542***	0.518***	0.535***	0.525***	0.346	0.269	0.360*	0.345*
	(0.156)	(0.142)	(0.152)	(0.146)	(0.211)	(0.213)	(0.213)	(0.207)
Inflation_t	0.118	0.130	0.117	0.112	0.310	0.173	0.327	0.281
	(0.108)	(0.112)	(0.106)	(0.106)	(0.258)	(0.220)	(0.241)	(0.244)
Honey_t	1.370*	1.379*	1.309*	1.371*	0.837	0.845	1.022	0.844
	(0.745)	(0.699)	(0.720)	(0.734)	(1.061)	(1.029)	(1.038)	(1.032)
PMcount_t	-0.139	-0.138	-0.145	-0.137	-0.026	-0.013	-0.002	-0.023
	(0.106)	(0.099)	(0.104)	(0.106)	(0.215)	(0.211)	(0.215)	(0.204)
p (spend = tax = 0)	0.030	—	—	—	0.007	—	—	—
p (spend = tax)	0.975	—	—	—	0.610	—	—	—
p					0.001	0.000	0.000	0.001
N	436	436	436	436	410	410	410	410

All models include year-fixed effects. Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. In first-differences model, AR(1) term is instrumented with its lag.

Table A4: Effect of consolidation on vote intentions – more interactions

	(A1)	(A2)	(A3)	(A4)
Pop_{t-1}	0.752***	0.754***	0.751***	0.750***
	(0.061)	(0.061)	(0.060)	(0.059)
$\text{FCons}_t^{(a+u)}$	-1.033**	-1.512***	-1.111***	-1.129**
	(0.473)	(0.418)	(0.315)	(0.396)
Ecounter_t	0.188			
	(0.341)			
$\text{FCons}_t^{(a+u)} * \text{Ecounter}_t$	-0.028			
	(0.266)			
Honey_{t-1}		-0.270		
		(1.269)		
$\text{FCons}_t^{(a+u)} * \text{Honey}_{t-1}$		1.570*		
		(0.779)		
GParties_t			-0.126	
			(0.308)	
$\text{FCons}_t^{(a+u)} * \text{GParties}_t$			-0.057	
			(0.369)	
Constraints_t				-0.825
				(4.138)
$\text{FCons}_t^{(a+u)} * \text{Constraints}_t$				0.393
				(3.166)
FBal_{t-1}	0.230*	0.224*	0.230*	0.230*
	(0.115)	(0.114)	(0.115)	(0.115)
Growth_t	0.531***	0.601***	0.537***	0.543***
	(0.149)	(0.115)	(0.152)	(0.149)
Inflation_t	0.115	0.133	0.114	0.120
	(0.107)	(0.105)	(0.103)	(0.111)
Honey_t	1.294*		1.362*	1.378*
	(0.701)		(0.740)	(0.758)
PMcount_t	-0.149	-0.208***	-0.141	-0.139
	(0.106)	(0.055)	(0.110)	(0.106)
p				
N	436	436	436	436

Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5: Effect of consolidation on vote intentions – more interactions

	(A5)	(A6)	(A7)	(A8)
Pop$_{t-1}$	0.743***	0.748***	0.752***	0.746***
	(0.058)	(0.061)	(0.059)	(0.062)
FCons$_t^{(a+u)}$	-1.353**	-1.255**	-1.102**	-1.130***
	(0.499)	(0.552)	(0.410)	(0.379)
Minority$_t$	-1.821			
	(1.267)			
FCons$_t^{(a+u)}$ * Minority$_t$	0.698			
	(0.614)			
Singleparty$_t$		-0.309		
		(0.822)		
FCons$_t^{(a+u)}$ * Singleparty$_t$		0.361		
		(0.740)		
GPrefrange $_t$			-0.004	
			(0.017)	
FCons$_t^{(a+u)}$ * GPrefrange$_t$			0.025	
			(0.018)	
GFrac$_t$				1.619
				(1.744)
FCons$_t^{(a+u)}$ * GFrac$_t$				0.386
				(1.134)
FBal$_{t-1}$	0.249**	0.232*	0.237*	0.224*
	(0.114)	(0.115)	(0.112)	(0.117)
Growth$_t$	0.567***	0.544***	0.558***	0.556***
	(0.145)	(0.160)	(0.152)	(0.155)
Inflation$_t$	0.105	0.117	0.118	0.123
	(0.108)	(0.099)	(0.105)	(0.107)
Honey$_t$	1.433*	1.371*	1.379*	1.411*
	(0.745)	(0.763)	(0.724)	(0.756)
PMcount$_t$	-0.151	-0.136	-0.140	-0.133
	(0.106)	(0.103)	(0.106)	(0.104)
p				
N	436	436	436	436

Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

A.3   Original IMF Data

Original IMF data action-based measures from De Vries et al.

Table A6: Effect of consolidation on vote intentions – IMF data

	Levels		Differences		IV	
	(A9)	(A10)	(A11)	(A12)	(A13)	(A14)
Pop_{t-1}	0.745***	0.748***	0.808***	0.820***	0.736***	0.754***
	(0.061)	(0.059)	(0.189)	(0.184)	(0.150)	(0.153)
FCons_t^{imf}	-1.259**	-0.969*	-0.904*	-0.650	-2.833***	-2.405***
	(0.455)	(0.536)	(0.468)	(0.484)	(0.853)	(0.864)
FBal_{t-1}		0.244*		0.561***		0.394*
		(0.124)		(0.187)		(0.213)
Growth_t	0.529***	0.543***	0.206	0.301	0.167	0.238
	(0.163)	(0.155)	(0.226)	(0.226)	(0.201)	(0.199)
Inflation_t	0.110	0.122	0.255	0.269	0.203	0.220
	(0.103)	(0.106)	(0.227)	(0.222)	(0.232)	(0.225)
Honey_t	1.039	1.093	0.702	0.610	0.425	0.396
	(0.777)	(0.762)	(1.120)	(1.086)	(0.999)	(0.998)
PMcount_t	-0.139	-0.148	-0.014	-0.039	-0.093	-0.100
	(0.114)	(0.106)	(0.212)	(0.211)	(0.198)	(0.200)
Country FE	Yes	Yes	—	—	—	—
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
p			0.001	0.002	0.003	0.003
N	436	436	409	409	409	409

Clustered standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

A.4 Traditional fiscal consolidation measures

The main alternative approach identifies consolidation periods as years, in which the cyclically adjusted primary fiscal balance (CAPB) improved more than a specific threshold (Alesina, Carloni and Lecce, 2011; Ahrend, Catte and Price, 2006; Guichard et al., 2007; Kalbhenn and Stracca, 2015). These thresholds that decide whether or not an improvement in the CAPB is classified as consolidation vary across studies and range between 0 and 1.5 percentage points. But the cyclically adjusted fiscal balance can change for a variety of reasons, and policy is only one of them. Fiscal deficits, for instance, can shrink when broader macro-economic conditions improve even when current fiscal policies did not change. The traditional measure therefore represents a mix between policy and non-policy outcomes.

Table A7 shows the empirical association between the two operationalizations of fiscal consolidation in our dataset. The two are positively related indicating that they partially capture similar process, but this association is limited. The correlation does not exceed 0.46 and is highest among the dummy variables, which measure whether or not consolidation took place, but not how much a government consolidated. Figure **??** shows the empirical distribution of the two measures. The distributions of the two variables are roughly similar with some more extreme values for the deficit-based measure. There are (very few) instances for the action-based measures when the announced consolidation policy led to greater deficits, which is not possible for the deficit-based measure by definition.

Table A7: Correlation between consolidation measures

		Action-based	
		Dummy	Size
	ΔCAPB> 0	0.40	0.28
Deficit-based	ΔCAPB> 0.5	0.43	0.37
	ΔCAPB> 1	0.36	0.38

ΔCAPB indicates by how much the cyclically adjusted primary fiscal balance (CAPB) needs to improve to count as consolidation year.

To complete the analysis, we show the estimation results for the traditional (CAPD) measures in the table below. One of the shortcomings of this measure is that it is not possible to include both deficit and consolidations in the same model as we do because the measure includes both consolidations and deficits. The results, therefore, are biased against the consolidation effect. The results, nonetheless, show that a drop in the CAPD has a negative effect although it is not statistically significant.

Table A8: Traditional measure of fiscal consolidation (CAPD)

	Levels			First Differences		
	(A15)	(A16)	(A17)	(A18)	(A19)	(A20)
Pop_{t-1}	0.754***	0.754***	0.753***	0.834***	0.840***	0.850***
	(0.057)	(0.057)	(0.057)	(0.183)	(0.179)	(0.180)
FCons_t^{capb1}	-0.314			-0.698		
	(0.730)			(0.746)		
FCons_t^{capb2}		-0.299			-0.439	
		(0.943)			(0.900)	
FCons_t^{capb3}			0.107			-0.037
			(1.107)			(1.134)
Growth_t	0.647***	0.651***	0.656***	0.114	0.123	0.113
	(0.174)	(0.168)	(0.171)	(0.231)	(0.229)	(0.225)
Inflation_t	0.152	0.152	0.139	0.285	0.256	0.218
	(0.140)	(0.150)	(0.144)	(0.243)	(0.248)	(0.263)
Honey_t	0.829	0.843	0.895	0.441	0.501	0.560
	(0.866)	(0.860)	(0.888)	(1.305)	(1.297)	(1.393)
PMcount_t	-0.104	-0.103	-0.097	0.005	0.008	0.016
	(0.115)	(0.115)	(0.116)	(0.230)	(0.225)	(0.235)
p	0.000	0.000	0.000	0.000	0.000	0.000
N	431	431	431	405	405	405

All models include year-fixed effects. Clustered standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.