

# Essay III

**Abstract:** Cross-national variations in fiscal performance have traditionally been seen as resulting from differences in electoral systems and types of government. However, such politico-institutional explanations appear to be sensitive to the time-period analysed. This paper provides a new explanation of why some countries have managed to consolidate public finances, while others have accumulated unsustainable levels of debt. Using real-time data for a panel of 31 OECD countries over the 1997–2012 period, the paper shows that governments have responded to biased economic forecasts with more expansionary fiscal policies than they would have if projections had been unbiased. The estimated effects are large. On average, biased projections have weakened annual budget balances by approximately one per cent of GDP.



# Politics or Perceptions

## The fiscal consequences of uninformed policy makers

The global economic crisis that began in 2008 has once again put public finances at the heart of academic and public debate. In many countries, public debt has soared to unsustainable levels and forced governments to implement austerity measures, with severe economic and social consequences. The worst affected countries are those where public finances had developed structural weaknesses well before the crisis. It is generally assumed that such fiscal problems originate from political indiscipline inherent in democratic systems, like voter myopia, fragmented governments or a strategic use of debt (Wyplosz 2013). Using this as a starting point, explanations of cross-national differences have focused first and foremost on those institutions and conditions that affect the motivations of policy makers and cause governments to internalise the costs of budget deficits. Constitutional provisions, the degree of political fragmentation and the quality of budget institutions are the institutions and conditions most frequently cited (Alesina and Perotti 1995, 1999).

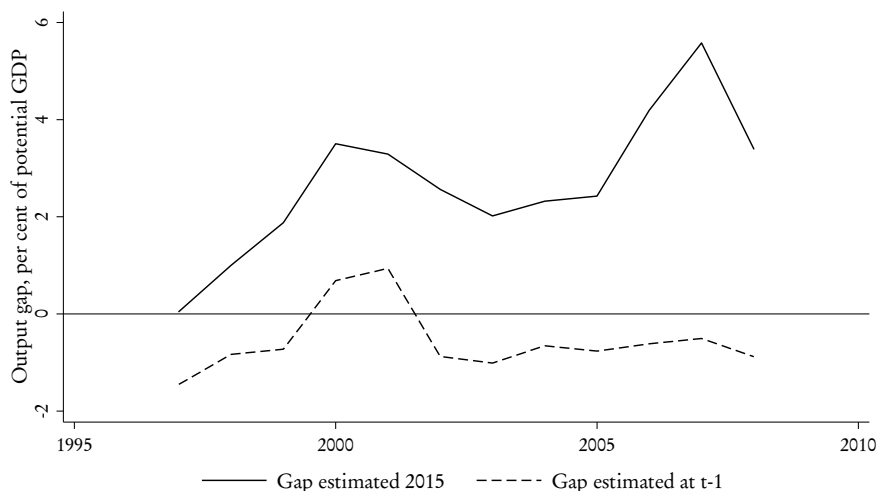
I propose an explanation of budget deficits that does not build upon this notion of political failure. Instead, I examine how the fiscal performances of advanced democracies have been affected by biased economic projections. The underlying idea is that discretionary economic policy is based on *perceptions* of the economy – rather than on *actual* economic conditions – and that we cannot fully understand the development of public finances if we only take the latter into account. If the perceptions that economic advisers and policy makers have when they pass a budget later turn out to be false, retrospective policy analyses that only consider actual economic outcomes might not provide an accurate view of the workings of politics.

As an illustration of how such perceptions can differ from ex-post estimations, Figure 3.1 shows the business cycles of Portugal, Ireland, Italy, Greece and Spain – measured as an average of the output gap estimations that the OECD has made for these countries.<sup>31</sup> The most recent assess-

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<sup>31</sup>The output gap is the difference between actual and potential output, usually expressed as a percentage of potential GDP. The output gap is negative during 'bad times' and positive during 'good times'.

Figure 3.1: Output gap estimates 1997–2008, PIIGS



Both lines show the average output gap for Portugal, Ireland, Italy, Greece and Spain. The solid line is made from output gap estimations published in November 2015, while the dashed line shows the forecast made one year before the year of concern. Data comes from OECD Economic Outlook.

ments are represented by a solid line, and the real-time projections, i.e., the projections made at the time that budgets were passed, are represented by the dotted line. As shown by the solid line, today these economies are judged as having performed well above their potential throughout the period. In retrospect, it appears to have been a golden decade and a great opportunity to consolidate public finances. It is therefore easy to condemn the lax fiscal policies of these countries and invoke the standard politico-institutional explanations of their high debt levels.

However, as the real-time projections show, these countries have repeatedly been told that they are in the midst of economic downturns, with output below long-run potential. Consequently, both the sustainability of public finances and the need for fiscal stimuli have been systematically overstated. Temporary increase in revenues were mistaken as permanent, which might have justified tax cuts and increased spending. Let us take Ireland as an illustrative example.

”When I have it, I spend it and when I don’t, I don’t”. These unfortunate words are from Charlie McCreevy, the Irish Minister of Finance between 1997 and 2004, and have frequently been used to illustrate the country’s irresponsible fiscal policies during Ireland’s boom years. And indeed, during years of rapid growth and output well above potential, Ireland ran large structural budget deficits hidden behind temporarily high tax revenues. Its lax fiscal policy during this period has recently been criti-

cised by the IMF and the European Commission (European Commission 2011; IMF 2009).

Ireland, however, is also known for the difficulties involved in gauging a country's business cycle, with economic advisors repeatedly projecting much lower output gaps than those that materialise ex-post. As a result, fiscal policy has been based on economic projections very different from the realities that have subsequently emerged. It is therefore possible that Irish budgets were balanced, given how policy makers perceived economic conditions.

This hypothesis is supported by a quick review of policy advice given throughout this period by organizations mandated to monitor Irish fiscal policy. While both the EU and the IMF tended to be slightly more fiscally conservative than the Irish government, recommending modest fiscal tightening from time to time, their advice was moderate compared to the harsh criticisms delivered years later. In general, they supported and sometimes even praised the government's policies. In their final evaluations before the fiscal crisis, the IMF recognised Ireland's fiscal position as sound (IMF 2006), and the EU Council concluded that "the medium-term budgetary position is sound and the budgetary strategy provides a good example of fiscal policies conducted in compliance with the Stability and Growth Pact" (Council of the European Union 2007).<sup>32</sup> Recent estimations made by the IMF indicate that Ireland at this time ran a structural primary deficit of close to 12 per cent of potential GDP (IMF 2015).

It appears that the structural fiscal weaknesses Ireland developed can at least partly be explained by how both policy makers and independent experts perceived the economic situation. But is the Irish case unique, or are economic perceptions an important explanation of budget deficits in other countries as well?

To answer this question, we must couple data on actual economic conditions with information about how the economy was perceived when budgets were passed. While increasingly common in the area of economic forecasting and the analysis of monetary policy (Croushore 2011), similar approaches are virtually absent in the political-economy literature on fiscal policy.<sup>33</sup> Therefore, this essay makes a unique contribution to the analysis

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<sup>32</sup>See O'Leary (2010) for a more in-depth comparison of the ex-post positions of the IMF, the European Commission and the OECD with the advice that was continuously given by these institutions during the 2001–2007 period.

<sup>33</sup>Three notable exceptions are Jonung and Larch (2006), Frankel (2011) and Easterly (2012). However, they are all based on the notion that governments knowingly manipulate the official forecasts to disguise budget deficits. This essay uses forecasts made by independent experts, which are much less susceptible to political manipulation, with the purpose to analyse how sincere perceptions of the economy has influenced policy.

of budget deficits and debt accumulation.

The analysis is conducted on 31 OECD countries over the period 1997–2012.<sup>34</sup> The empirical results confirm that over the last 15 years, economic perceptions have been important to the conduct of fiscal policy and account for large portions of the differences between countries with respect to debt accumulation. Governments have reacted strongly to perceptions of economic conditions, and systematic projection errors have caused fiscal policy to be overly expansionary. In the average OECD country, this projection bias is estimated to have weakened the annual budget balance by more than 1 per cent of GDP. For some countries, such as Ireland, Portugal and the United Kingdom, the effect has been twice as large. Moreover, the traditional politico-institutional explanations for budget deficits find little support during this period and appear to be highly sensitive to the sample used.

## The politics of debt control

The modern politico-institutional literature on debt control began where earlier attempts to explain budget deficits had proven insufficient. Previous work, most notably the tax-smoothing hypothesis of Barro (1979), assumed that deficits arise because benevolent budget planners seek to maintain *stable* taxes to meet a given path of government expenditure rather than balance the budget at every opportunity. Budget deficits, instead of temporary tax increases, would then constitute the optimal response to wars, economic downturns and unfavourable demographic conditions. However, as debt levels rose, it became apparent that negative fiscal positions could not be easily explained by the factors suggested by Barro and others. This insight inspired a lively literature that turned attention toward politics, with politico-institutional factors now sought to explain differences in fiscal performance.

This literature has shown that there are many reasons why governments might pursue overly expansionary fiscal policies, even if governments realise that such policies are not intertemporally efficient. For example, voters might not fully internalise the future costs of deficits because they are short-sighted (Buchanan and Wagner 1977), are willing to exploit future generations (Bowen et al. 1960; Cukierman and Meltzer 1989) or

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<sup>34</sup>The start of the sample is limited by the first real-time projections available and the end of the sample is chosen so there has been at least three years of possible revisions. The included countries are Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, The Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom and the United States.

are uninformed about the country's fiscal position (Rogoff and Sibert 1988). However, various explanations depicting fiscal policy as a common-pool problem have been the most influential (Wyplosz, 2013, see Weingast et al., 1981, for an early contribution). The key idea is that a large number of small interest groups, government parties or policy makers, all of whom demand costly reforms without internalising their full costs, decide on budgets where the fiscal balance is worse than each of the involved actors would have preferred. One of the most appealing aspects of this theory lies in its many empirically testable implications. Consequently, a large portion of the literature has attempted to explain cross-country variations in fiscal performance in terms of politico-institutional differences that aggravate or alleviate these common-pool problems. Studies of political fragmentation and fiscal institutions have been most important in this regard.

### *Political fragmentation*

Political fragmentation is the most common politico-institutional explanation of budget deficits. In their seminal work, Roubini and Sachs (1989) created an index of political cohesion, finding that it is more difficult for fragmented governments to achieve consensus on deficit reduction and that debt ratios therefore increase more in countries where coalition governments are common. Their findings spurred a vast volume of subsequent research and are still influential. Edin and Ohlsson (1991) reexamined the results and, by decomposing the index into dummy variables for coalition and minority governments, showed that minority governments had poorer budget discipline than majority governments and that this was the effect captured by Roubini and Sachs. This approach was later broadened by Kontopoulos and Perotti (1999), who compared the effects of the number of parties in government with those of the number of spending ministers and concluded that it was the latter that mattered for fiscal performance. Subsequent research has confirmed similar findings in US states (Besley and Case 2003) and in Eastern Europe (Fabrizio and Mody 2006).

A closely related strand of research has examined constitutional differences, typically focusing on larger sets of countries. The most influential studies in this line of research are the works of Persson and Tabellini (2003). In a cross-sectional analysis of 60 democracies, they show that over the 1960–1998 period, countries with majoritarian electoral systems have had smaller budget deficits than countries with proportional representation. In later work, they conclude that this relationship results from the fact that proportional representation entails more fragmented party systems in which coalition governments are more frequent (Persson et al. 2007). Later studies have focused on the degree of proportionality in

the electoral system, typically measured as a district magnitude. Fabrizio and Mody (2006) examines fiscal policy in a panel of Eastern European countries, none of which have majoritarian systems, and finds that large district magnitude (many elected candidates per district) is associated with larger budget deficits.

While the theoretical arguments provide appealing explanations of why politically fragmented governments have poorer fiscal discipline, they do not necessarily imply that countries in which fragmentation is prevalent always run larger budget deficits. As debt accumulates, it is reasonable to expect counteracting forces to stabilise or even reduce debt levels. Governments will attempt to repay debt, through regular payments or devaluation. Institutions might be created to bolster fiscal prudence, which has been theorised to occur more in countries where coalition governments are common (Carlin and Soskice 2009; Soskice 2007). And if nothing else, financial markets will eventually lose confidence in public finances and force debt reductions when governments cannot pay the costs of debt servicing. In other words, even if the effects of political fragmentation are real, they might not always show up as budget deficits in aggregate data. Besides, there are also reasons to believe that fiscal consolidations are easier to implement when political fragmentation is high. An important insight in the literature on economic voting is that voters are more likely to hold incumbents accountable when there is a clarity of responsibility (Powell and Whitten 1993).

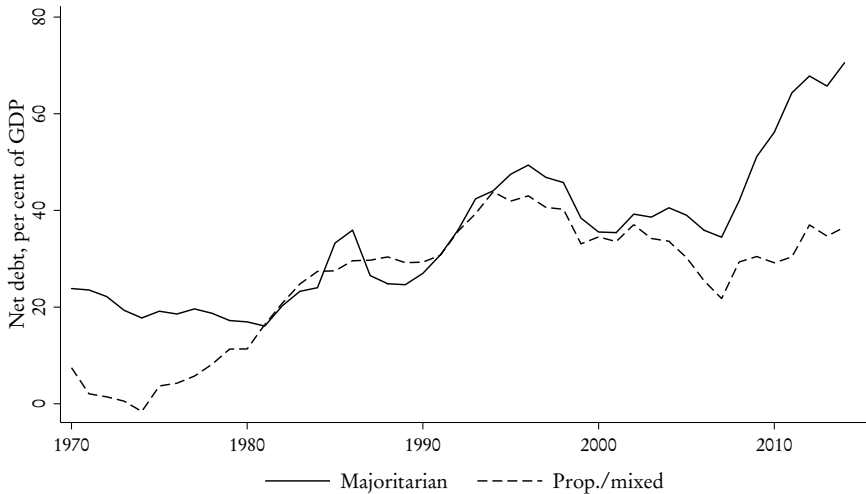
This could explain why some later studies have failed to confirm the results of the literature on political fragmentation. Indeed, replication studies commonly find that results are sensitive to the time period analysed (Beck et al. 2000; Hahm et al. 1996). This is well-illustrated by Figure 3.2, which shows how average debt levels have developed in countries with majoritarian electoral systems and in countries with mixed or proportional systems. The figure shows that debt levels rose faster in countries with mixed and proportional systems during the 1970s and 1980s, which broadly corresponds to the period analysed in most of the studies referred to above. Since the mid 1990s, these countries have consolidated public finances and performed better than countries with majoritarian systems.<sup>35</sup>

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<sup>35</sup>The reason for the large debt and its decreasing trend in countries with majoritarian systems can be traced to the Second World War. When the war ended, most of these countries had accumulated extreme levels of public debt. In the UK, for example, debt was more than twice the size of GDP. Despite decades of fast growth it took most of these countries until around 1980 to return debt to 'normal' levels. For differing reasons, most countries with mixed or proportional electoral systems ended the war with public debt under control and hence did not have the same need as countries with majoritarian systems for prudent fiscal policy during the decades that followed. After 1995, a difference emerges once again between countries with majoritarian and



Figure 3.2: Net debt and electoral system



The graph shows the average net debt in countries with majoritarian (solid line) and mixed/proportional (dashed line) systems. The series is created from different editions of OECD Economic Outlook.

### *Fiscal institutions*

After it had been widely acknowledged that mechanisms inherent in the political system were at the root of many countries' fiscal problems, budget institutions were suggested as a way to overcome these problems without compromising the core values of democracy. With such institutions further actualised through European economic-political integration, a rapidly growing area of research has emerged. As it is an open question which types of fiscal institutions that most strongly affect fiscal performance, several different indices have recently been proposed. Unfortunately, most indices are only cross-sectional (Alt and Lassen 2006a; Darvas and Kostyleva 2011) or limited to European countries (Fabrizio and Mody 2006; Hallerberg et al. 2009).

The difference indices measure different aspects of the budget process. The index presented in Hallerberg et al. (2007, 2009) consists of two components. The first component measures the decision-making power of the finance minister and is denoted *delegation*. The second component is designated *contracts* and is a measure of the degree to which political parties

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proportional systems. This divergence could potentially be attributed to the fiscal and institutional demands of the European economic-political integration, which mainly affects countries with proportional electoral systems. It is worth noting that the dataset used by Persson and Tabellini (2003) shows the same thing. Debt is consistently higher in countries with majoritarian systems, but because the differences decrease over time, such countries appear to perform better when the budget balance is examined.

or other agents have agreed to commit themselves to certain fiscal targets. Both of these components are closely aligned with the idea of fiscal policy as a common-pool problem. Through delegation of power to a finance minister, who is believed to internalise the costs of deficits to a greater extent than spending ministers would, or binding budget agreements negotiated by all parties in parliament, which should internalise the costs of debt more than the government parties alone would, the common-pool problem should be mitigated.

Alt and Lassen (2006a,b) constructs an index of fiscal transparency, based on the degree to which the budget documentation includes medium- and long-term projections for public finances, whether the government uses accrual accounting and whether the documents are subject to auditing and independent review. Fiscal transparency is assumed to provide voters with more accurate information about public finances and thereby enable them to assess the fiscal performance of the incumbent. We could therefore expect fiscal transparency to mitigate the problem of fiscal illusion (Rogoff and Sibert 1988) and reduce the electoral incentives for incumbents to accumulate debt. The different indices are strongly correlated, but I will use Alt and Lassen's index in the empirical part's of this essay because it has information about a larger number of countries.

The idea of fiscal policy as a common-pool problem – aggravated by political fragmentation and mitigated by fiscal institutions – has provided an appealing rationale for why governments run large deficits and why some countries perform more poorly than others. However, as noted, there are reasons to believe that such explanations cannot account for cross-national variations in fiscal performance over recent decades. The following section therefore suggests an alternative explanation of why deficits have arisen.

## Perceptions matter for policy making

When policy makers establish economic policies for the following year, they base their actions on their own and their advisers' *perceptions* of the economy. How the economy will eventually develop is unknown to them. However, research on macroeconomic policy making has traditionally only examined economic outcomes as we observe them today, implicitly assuming that these ex-post assessments correspond to the information available to policy makers at the time policies were implemented (Orphanides 2001). Thus, while it is widely acknowledged that macroeconomic circumstances can only explain a small part of the variations in fiscal performance (Alesina and Perotti 1995; Fabrizio and Mody 2006) and that governments tend to run budget deficits even when deficits are not

motivated by economic circumstances (Calmfors and Wren-Lewis 2011), the analysis behind these propositions has typically not considered economic conditions as they were perceived by policy makers. Instead, policy has been analysed according to how economists today – often decades later – judge the situation. As will be shown, the differences between how economic conditions were initially perceived and how they eventually developed are large enough to have important implications for the results.

Fiscal policy is increasingly described by means of a policy reaction function, where the government attempts to set the budget balance<sup>36</sup> ( $b_t$ ) as a response to the business cycle ( $y_t$ ), typically measured as the output gap (Cimadomo 2012). When no distinction is made between economic realities and economic perceptions,  $\beta$  is thought to capture both automatic responses – like the sensitivity of tax revenues to changes in employment – and discretionary actions taken by the government.

$$b_t = \alpha + \beta \times y_t + \epsilon_t \quad (3.1)$$

However, fiscal actions are not based on actual economic conditions but on how they are perceived by governments. There are three primary reasons why these perceptions differ from economic realities. First, there is a time lag between the time a policy is agreed upon and the time it is implemented. For example, a budget bill is typically passed during the autumn prior to the year in which it is implemented. During this time, economic circumstances can change significantly. Second, some economic variables are difficult to measure and therefore subject to large and frequent revision. This is especially true of economic growth. Third, what matters most for policy making is not the actual values of growth or unemployment, but how they compare with their estimated long-run potential. Neither potential output nor equilibrium unemployment is directly observable, and even the latest revised estimates are characterised by significant uncertainty. Nevertheless, ex-post estimates are much more accurate than those made ex-ante. Moreover, such estimations improve over time as a result of new insights and methodological innovations. Combined, these factors ensure that perceptions of the economy that were held when budgets were passed typically differ substantially from actual economic outcomes. Hence,  $\beta$  in Equation 3.1 does a poor job of capturing the intentions of governments, and we therefore wish to

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<sup>36</sup>There are many ways to define and measure budget outcomes. *Budget balance* is used here as a generic term referring to the primary balance, net lending or the change in government debt. The budget balance is a stochastic outcome and never under direct political control, but it is a good indicator of policy makers' intentions and is often interpreted as directly set by governments. The preferred choice of budget measure, the annual change in the net debt to GDP ratio, is discussed in the Supporting Information.

Table 3.1: Categorising the political response

Fiscal regime	$\phi$
Pro-cyclical	$\phi < 0$
Neutral	$\phi = 0$
Counter-cyclical	$\phi > 0$

separate perceptions from realities. In Equation 3.2, the earlier model is augmented with economic perceptions, designated by an asterisk ( $y_t^*$ ). The fiscal effects of economic realities and perceptions are thus captured separately by  $\psi$  and  $\phi$ .

$$b_t = \alpha + \psi \times y_t + \phi \times y_t^* + \epsilon_t \quad (3.2)$$

Assuming that policy makers react to *perceptions* of the economy, while the non-discretionary components of budgets respond to economic *realities* rather than perceptions, it is possible to differentiate the intentions of policy makers from the direct budgetary effects of the business cycle. Similar strategies to distinguish between discretionary responses and automatic stabilisers have previously been employed by Bernoth et al. (2008) and von Kalkreuth and Wolff (2007). In Table 3.1, these intentions are categorised as either pro-cyclical, neutral or counter-cyclical.<sup>37</sup> A policy maker with counter-cyclical intentions attempts to stabilise the business cycle through discretionary actions by weakening the budget balance during downturns and strengthening it during upturns. Counter-cyclical intentions are here represented by a positive value of  $\phi$ .

The 'neutral' policy maker does not take action to interfere with the business cycle but allows automatic stabilisers to work freely. Without discretionary measures, the budget balance will still be positively affected by the business cycle, but this effect will be captured by  $\psi$ . Put differently, with neutral policy makers the *structural* budget balance<sup>38</sup> is not correlated with the business cycle, and  $\phi$  will be close to zero.

A pro-cyclical policy maker attempts to counter the budget weakening effects of an economic downturn by strengthening the budget through tax increases or reduced spending. If  $\phi + \psi = 0$ , the actual budget balance will be unrelated to the business cycle. Because it would make little sense to take larger discretionary actions than are required to counteract the

<sup>37</sup>In this essay, the budget balance is operationalised as the annual change in debt. Consequently, all the parameters have the opposite signs.

<sup>38</sup>The structural budget balance is a generic term for any cyclically adjusted measure of the budget balance. It can be interpreted as what the budget balance would be during a normal economic situation, that is, when actual output equals potential output.

automatic stabilisers, we would not expect  $|\phi|$  to be larger than  $\psi$ . Strict budget balancing is seldom advocated today but was the primary goal of fiscal policy during the Great Depression (Dalton 1934). Pro-cyclical fiscal policy is also commonly found in developing countries, which can be explained by political distortions and borrowing constraints (Alesina et al. 2008; Gavin and Perotti 1997).

As shown above, the effects of perceptions on public finances depend upon the fiscal regime. If policy makers have counter-cyclical intentions, they will react to expected downturns by increasing expenditures or reducing taxes. But if the objective of balancing the budget outweighs stabilisation motives, the effect will be the opposite. Naturally, the same logic applies to economic upturns. When good times are expected, the counter-cyclical policy maker will take the opportunity to strengthen the budget, whereas the pro-cyclical policy maker will find this unnecessary.

## Research design

How can we know how governments perceive economic conditions? There are no policy maker surveys available that are suitable for this purpose. And even if there were, we would not know whether the responses reflect the policy makers' actual beliefs or whether the policy makers adjust their answers to warrant whatever policies they pursue.

As neither economic realities nor perceptions are perfectly observable, I use the approach commonly employed in the emergent literature on 'real-time' data and operationalise them using projections made by economic forecasters. Therefore, while the most recent assessments are our best estimates of actual economic outcomes, projections made when budget bills were passed are assumed to reflect the economic perceptions that policy makers and economic advisers had at that time. The economic situation, both actual and perceived, is primarily measured as the output gap, which is an estimation of how economic output relates to its potential level. A negative output gap implies an economic downturn and that the economy is performing below potential. Correspondingly, upturns are indicated by a positive output gap. The output gap plays a central role in the analysis and conduct of both monetary and fiscal policy (Koske and Pain 2008).

The notation applied henceforth uses subscripts to denote the years that projections cover and superscripts to indicate when projections were made. For example, a budget bill for year  $t$  is typically approved during the previous year ( $t - 1$ ) and is therefore based on information that was available through the one-year-ahead forecast made that year ( $y_t^{t-1}$ ). As time passes, more data are collected, and estimation methods are

improved, resulting in continuous revisions of the actual output gap. The most recent revision is here denoted as  $y_t^{rev}$  and can be viewed as our best estimate of the output gap. As previously mentioned, it is reasonable to assume that discretionary fiscal policy reacts to *perceptions* of the economy, while the non-discretionary components of the budget respond to economic *realities* rather than perceptions (von Kalckreuth and Wolff 2007). It is therefore possible to differentiate the intentions of policy makers from the direct budget effects of the business cycle by including the forecast made at  $t - 1$  and the revised estimate in the same equation. An advantage of this approach, compared with the common method of relating *cyclically adjusted* budget balances to the output gap, is that the traditional method might falsely interpret semi-automatic stabilisers and incorrect budget elasticities as discretionary actions. The intended discretionary response to the business cycle is here captured by  $\phi$ , while  $\psi$  captures the budgetary effects of automatic stabilisers and other cyclical factors, including semi-automatic stabilisers such as active labour market policies. Because automatic stabilisers are known to differ across countries,  $\psi$  is estimated separately for each country, as indicated by the subscript  $i$ .

$$b_{i,t} = \alpha + \psi_i \times y_{i,t}^{rev} + \phi \times y_{i,t}^{t-1} + \epsilon_{i,t} \quad (3.3)$$

A constant problem when estimating the cyclicity of discretionary policy concerns possible endogeneity of the output gap. The purpose of counter-cyclical fiscal policy is to stabilise the business cycle, and any exogenous variation in the budget balance will likely be positively correlated with the output gap. Consequently, estimations of cyclicity that only use revised data will be positively biased towards more pro-cyclical policies. This problem is partly solved by the use of real-time data. Presumably, any effect that fiscal policy has on the output gap will be captured by the revised series rather than by forecasts that were made during the previous year. Compared with other methods, estimations of cyclicity that use real-time data therefore tend to find a greater degree of counter-cyclicity (Golinelli and Momigliano 2008).

In the political-economic literature on budget deficits, the conventional method of addressing possible serial correlation is to include a first-order lag of the dependent variable. This is also the approach I use, even though this autoregressive term turns out to be insignificant in most regressions. If we let  $\mathbf{x}_{i,t}$  denote a vector of control variables, including year and country dummies, the preferred regression equation can be written:

$$b_{i,t} = \alpha + \phi \times y_{i,t}^{t-1} + \psi_i \times y_{i,t}^{rev} + \lambda \times b_{i,t-1} + \delta \times \mathbf{x}_{i,t} + \epsilon_{i,t} \quad (3.4)$$

It is well known that adding fixed effects to a model with a lagged dependent variable causes biased parameter estimates (Nickell 1981). With an average of more than 10 observations per country, this bias is relatively small but far from negligible (Katz and Beck 2009). Alternative estimators are therefore examined in the robustness section.

### *Real-time projections and other data*

The benefits of using so-called real-time data in the analysis of fiscal policy should now be apparent, but what is the best source of such forecasts, and do they differ systematically from revised estimations? If so, what are the reasons for this bias?

Following the seminal work of Orphanides (2001), the number of studies using real-time data to analyse monetary and fiscal policy has steadily risen (see Cimadomo (2011) for a recent review of the 'real-time literature' concerned with fiscal policy). It is commonly argued that the gap estimations that best capture policy makers' real-time perceptions of the economy are those provided by the OECD (Cimadomo 2012). Because these estimations are published in December, they should take into account most of the discretionary measures approved by governments during the year, while they are nevertheless close in time to the budget bills usually passed at the end of the year. They are also well suited to the purpose of this essay, as they are less likely to suffer from political bias than the projections published by national authorities. After all, politically manipulated projections do not reflect the actual beliefs of policy makers. And compared with data from the IMF and the European Commission, older vintages are available from the OECD.

However, there are several reasons why projections of the output gap might be biased, even if made by independent experts. First, if the downside risks of forecasts exceed the upside 'risks', reflecting, for example, the possibility of an unlikely but potentially disastrous financial crisis, modal forecasts (describing the most likely scenario) will be biased (Wallis 1999). Second, partly to avoid generating expectations regarding particular economic reforms, many forecasters assume unchanged policies in their projections. If discretionary fiscal actions are expansive on average, which they should be if public expenditures are not fully indexed to prices and wages, economic growth – and therefore also the output gap – will be higher than forecasted. Third, forecasters might have an agenda that goes beyond making the most accurate projections; indeed, it is often claimed that official forecasts of national agencies are manipulated to make governments look good. However, as shown by Gilles Saint-Paul (2011), independent forecasters may also provide projections that influence policies in directions that accord with the forecasters' own preferences.

Table 3.2: Output gap projections made by OECD

Time for projection	1997–2012	
	Obs	Mean
Projection made at $t-1$	378	-1.45
Projection made at $t$	378	-1.29
Projection made at 2014	378	0.33

Finally, in many countries, potential growth and employment have been decreasing for decades. Such trends are just as difficult to predict as they are to observe and they can easily be misinterpreted as temporary downturns. By retrospectively estimating real-time output gaps using different time series filters, Orphanides and van Norden (2002) show how such structural changes give rise to negatively biased output gaps for the United States.

Table 3.2 summarises the output gap projections that the OECD has published in the December editions of *Economic Outlook*. The revised output gap projections for 1997–2012 show a mean value of 0.33, indicating that output has, on average, been slightly above its potential during this period. The projections for the same years published in real-time tell a different story, with the output gap averaging  $-1.45$  ( $t - 1$ ) or  $-1.29$  ( $t$ ) per cent of potential GDP. That is a difference of two percentage points!<sup>39</sup>

While revisions of the output gap are typically caused by revisions of actual rather than potential output (Koske and Pain 2008), this does not necessarily mean that pessimistic assessments of actual output are behind this bias. On the contrary, it is commonly assumed that forecasts are optimistic rather than pessimistic. It is not possible to deconstruct the output gap revisions into revisions of actual and potential GDP. While GDP revisions during the past 15 years have been much larger than required to explain this bias – in this essay’s sample, the real-time estimations of GDP are on average 4 percentage points lower than their revised counterparts – such revisions have more to do with changes in classification rules and other definitions than with actual misjudgements of the level of economic activity. Examining revisions of equilibrium unemployment (NAIRU) and forecasts of accumulated growth, the overall impression is that both optimism about potential output and pessimism about actual output contribute to the output gap bias.<sup>40</sup>

<sup>39</sup>Projection bias is also confirmed by statistical tests. Similarly to the conclusions drawn by Koske and Pain (2008), a Wald test separately rejects the joint hypothesis that the real-time estimates (made at  $t-1$ ) are efficient and unbiased predictors of revised estimations (made in 2014) for most countries in the sample.

<sup>40</sup>In this sample, both the NAIRU and five-year GDP growth ( $t + 1$  compared to  $t - 4$ ) have on average been revised upwards by 0.8 percentage points.



The main sample used in this essay is determined by the availability of real-time projections of output gaps. The OECD has published such estimates biannually since 1996, covering between 20 and 31 of its member countries. With some exceptions caused by a lack of other data, these parameters determine the time-period and countries analysed. Following Barro (1979), Roubini and Sachs (1989) and others, my preferred choice of dependent variable is the annual change in the net debt to GDP ratio.<sup>41</sup> To control for unexpected debt servicing costs and debt deflation, I include the annual change in inflation and net interest payments as explanatory variables. Extensive research on so-called electoral business cycles has found that incumbent parties manipulate fiscal policy to increase their chances of re-election (Franzese 2002). To control for such effects, I include one dummy for election years and one dummy for years that succeed election years. To allow for partisan effects, I also include a dummy variable for whether the chief executive belongs to a left-wing party. Because it is possible that the ideological orientation affects the degree of Keynesian policy (Allan and Scruggs 2004), I also include an interaction between the left-wing dummy and the real-time projection. Remaining variables are the index of fiscal transparency described earlier, data on coalition and minority governments from the Database on Political Institutions (DPI), cross-sectional data on majoritarian and presidential systems from Persson and Tabellini (2003) as well as GDP growth and the unemployment rate from the OECD. For a discussion about the choice of variables and a description of data sources, the reader is referred to the supplemental information available online.

## Results

This section presents the results for the different regression models, most of which are variants of Equation 3.4. I begin the section by investigating whether the traditional politico-institutional explanations of fiscal policy can account for the development of debt and deficits during the last two decades. Each model is first estimated on a sample similar to the one

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<sup>41</sup>There are several reasons to use the change in debt instead of a more direct measure of the budget balance. First, it properly treats debt depreciation due to inflation as debt repayment. Second, the change in debt is easier to compare between countries. While the optimal structural budget balance depends on GDP growth and debt levels, among other things, many economists have argued that a stable debt constitutes the best response to a debt shock (Schmitt-Grohé and Uribe 2004; Wren-Lewis 2010). Third, the debt level is less susceptible to political manipulation through creative accounting (von Hagen and Wolff 2006). My robustness tests also show that the results hold when the change in debt is replaced by the primary balance, although the size of the effect is reduced.

used when the explanation first appeared in the literature and then on the sample used in this essay. I then proceed to the main results, where I analyse how biased real-time perceptions have affected fiscal policy. Before concluding, the robustness of the results are examined through a large set of alternative model specification.

Table 3.3 summarises the regression results for the politico-institutional models. The first two models consist of the variables that were used by Roubini and Sachs (1989) and Edin and Ohlsson (1991). Political fragmentation is coded as two dummy variables, one for coalition governments and one for minority governments, as Edin and Ohlsson suggested. The control variables are the lagged dependent variable, a dummy for Japan and the change in the unemployment rate, the debt servicing cost and the GDP growth. However, the data sources are different from theirs and the model is therefore not an exact replication. The model in the first column is estimated on a sample which is restricted to the observations used by Edin and Ohlsson (1991) and Roubini and Sachs (1989)<sup>42</sup>. Both coalition and minority governments are associated with larger deficits, but it is only minority governments that have an effect that is large enough to be statistically significant. This is also what Edin and Ohlsson (1991) found. However, when the sample is substituted with data for 1997–2012, the effect of both coalition and minority governments changes sign.

The third and fourth columns show the budgetary effects of constitutional differences. As far as possible, I use the same variable definitions as Persson and Tabellini (2004), which means that the dependent variable in these two regressions is the central government's budget deficit, as per cent of GDP. The independent variables are the form of government, the electoral system, an index of civil and political rights from Freedom house, the natural log of the population size, the amount of trade as share of GDP and a dummy for whether the country is a federation or not.<sup>43</sup> The third column uses the same cross-sectional dataset as Persson and Tabellini, which they created by averaging yearly outcomes over the 1990–1998 period, with one exception. To make the different models comparable, I only include countries which are members of the OECD. The results show that both majoritarian and presidential systems are associated with better fiscal discipline, but it is only the effect of the electoral system that is statistically significant. Countries with majoritarian electoral systems are estimated to have a 3 percentage points smaller deficit, which is almost identical to the estimate in Persson and Tabellini (2004). The fourth column applies the

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<sup>42</sup>This restriction is based on their data on political fragmentation. I am unable to remove observations for which they had missing data on other variables.

<sup>43</sup>Because I only include OECD countries, I have to exclude variables with little variation within the OECD, like the dummy variables for continents and colonial origin.

Table 3.3: Traditional explanations and newer samples

	(1)	(2)	(3)	(4)	(5)	(6)
Lagged net debt	0.58*** (0.08)	0.17* (0.10)			0.31** (0.12)	0.18 (0.11)
$\Delta$ Unemployment rate	0.56* (0.26)	1.83*** (0.20)				
Unemployment rate					0.26*** (0.08)	0.25 (0.28)
$\Delta$ Debt service	0.01*** (0.00)	0.00 (0.00)				
$\Delta$ GDP growth <sub>t</sub>	-0.03 (0.08)	-0.10 (0.08)				
GDP growth <sub>t</sub>					-0.34** (0.14)	-0.96*** (0.10)
Japan	1.38** (0.55)	5.40*** (0.94)				
Coalition government <sub>t</sub>	0.38 (0.53)	-0.95 (0.73)				
Minority government <sub>t</sub>	1.71* (0.95)	-2.36** (0.91)				
Presidential			-1.07 (2.25)	2.00 (2.58)		
Majoritarian			-3.47** (1.58)	0.71 (1.53)		
Freedom house			3.13 (4.24)	10.20** (3.66)		
Log of population			0.24 (0.46)	0.26 (0.63)		
Openness			-0.03* (0.01)	0.03 (0.03)		
Federal			-0.20 (2.21)	1.55 (1.69)		
Fiscal transparency					-0.35*** (0.12)	0.08 (0.25)
Election <sub>t</sub>					-0.03 (0.38)	0.45 (0.87)
Election <sub>t-1</sub>					-0.23 (0.65)	1.96** (0.80)
Constant	-0.19 (0.34)	0.96* (0.54)	2.21 (4.71)	-14.51* (7.21)	3.00*** (0.73)	-0.17 (1.35)
Sample	RS	Mine	PT	Mine	AL	Mine
Year dummies	No	No	-	-	No	No
Country dummies	No	No	-	-	No	No
Observations	153	366	23	21	258	299
Adjusted R <sup>2</sup>	0.480	0.216	0.182	0.222	0.175	0.226

Country-clustered robust standard errors in parentheses. The coefficients for revised output gaps vary between countries and are not reported in the table. The revised output gaps in this table are from 2011 because they go further back in time. The samples are restricted to country-years which are included in Roubini and Sachs (1989) (column 1), Persson and Tabellini (2003) (column 3), Alt and Lassen (2006a) (column 5) and my later analysis (columns 2, 4 and 6). \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

same model to the time period analysed in this essay. When the data is substituted with averages over the 1997–2012 period, both the constitutional variables changes sign and are no where near statistical significance.

The final two columns show the budgetary effects of elections and fiscal transparency. The fifth column uses the same time period as Alt and Lassen (2006a), while the model shown in the sixth column is estimated on the 1997–2012 period used in the remainder of this essay. Once again, we find the expected effect on the old sample: debt has accumulated slower in countries with transparent budgets. But when the sample is substituted with more recent data, the effect disappears. As it seems, neither the traditional measures of political fragmentation or fiscal transparency can account for the cross-national differences in fiscal performance over the last two decades. The estimated effect of elections is only significant in the latter sample and for the years following elections, which could reflect that promises made during the election campaign are often implemented in the budget for the succeeding year.

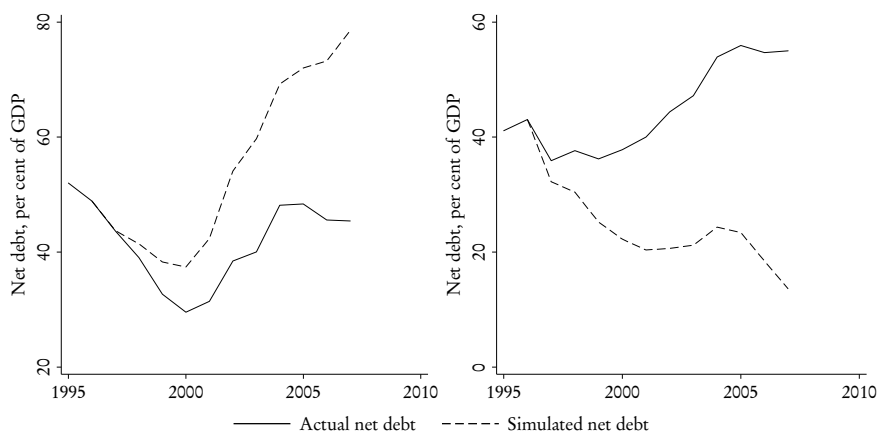
We now proceed to the main results. Table 3.4 presents regression results for the models with economic perceptions. Column 1 and 2 broadly correspond to the equations with the same numbers (with GDP growth and the unemployment rate added as controls). The first column represents a model with revised estimates of GDP growth and the output gap. Because GDP growth and the unemployment rate has been centered around their means, the constant can be interpreted as the predicted debt change during normal economic circumstances, i.e., when output is at potential and both growth and unemployment are at their average levels. Note that because of space restrictions, the country-specific coefficients for the output gap are not shown in the table. The second column shows what happens when real-time perceptions are added to the model. Two key observations are worth noting. First, the real-time projections of the output gap have a large and significant effect on changes in debt. When the gap is expected to be negative, policy makers respond with fiscal stimulus, and the debt grows (or decreases more slowly), and vice versa. The estimated effect is large, indicating a fiscal response of 0.92 per cent of GDP for each 1 per cent expected deviation of output from potential GDP. Second, the value of the constant compared to its value in column 1 shows how the change in debt during 'normal' economic circumstances is affected by economic perceptions. Because policy makers respond to perceived downturns with tax cuts or increased expenditures, and output gap projections are negatively biased, debt is higher than it would have been if economic projections were unbiased. The estimated average effect on the annual change in debt is as large as 1.5 per cent of GDP, as illustrated by the different constants in columns 1 and 2.

Table 3.4: The role of perceptions

	(1)	(2)	(3)	(4)	(5)
$\text{Gap}_t^{t-1}$		-0.92*** (0.23)	-0.94** (0.35)	-1.10** (0.42)	
$\text{Gap}_t^t$					-1.01** (0.48)
Left-wing $\times$ $\text{Gap}_t^{t-1}$				0.27 (0.38)	
Left-wing $\times$ $\text{Gap}_t^t$					0.54 (0.52)
GDP growth <sub>t</sub>	-0.91*** (0.20)	-0.84*** (0.23)	-0.52 (0.63)	-0.55 (0.60)	-0.39 (0.50)
Unemployment rate	0.25 (0.19)	0.08 (0.15)	0.29 (0.28)	0.33 (0.28)	0.54 (0.42)
Election <sub>t</sub>			-0.10 (0.96)	-0.07 (0.97)	0.13 (1.01)
Election <sub>t-1</sub>			0.29 (0.69)	0.31 (0.69)	0.50 (0.63)
$\Delta$ Inflation <sub>t</sub>			0.59* (0.31)	0.59* (0.32)	0.42 (0.29)
$\Delta$ Int.payments <sub>t</sub>			-2.14 (1.64)	-2.31 (1.76)	-2.01 (2.26)
$\Delta$ Debt <sub>t-1</sub>			-0.12 (0.07)	-0.12* (0.07)	-0.10 (0.07)
Left-wing			-0.32 (0.78)	0.00 (.)	0.00 (.)
Coalition			-0.27 (1.81)	-0.42 (1.76)	-1.11 (1.96)
Minority			-0.14 (1.06)	-0.14 (1.07)	-0.21 (1.12)
Constant	0.21 (0.59)	-1.27 (0.76)	-2.69 (2.56)	-2.58 (2.44)	-2.12 (1.71)
Year dummies	No	No	Yes	Yes	Yes
Country dummies	No	No	Yes	Yes	Yes
Observations	378	378	332	332	329
Adjusted R <sup>2</sup>	0.271	0.318	0.553	0.554	0.545

Country-clustered robust standard errors in parentheses. The coefficients for revised output gaps vary between countries and are not reported in the table. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The third column adds a first-order lag of the dependent variable, time and country fixed effects, election dummies, three dummies for left-wing executives, coalition governments and minority governments as well as controls for unexpected inflation and interest payments. The estimate of  $\phi$  remains virtually unchanged at -0.94, which is a surprisingly robust result and hopefully an indication that omitted variables are not a major concern. The estimated effects of both coalition and minority governments have signs opposite those that have traditionally been proposed, but none of



The US with Irish forecast errors (left) and Portugal with unbiased forecasts (right).

Figure 3.3: Debt projections

them are statistically significant. The fourth column builds on the model in column 3 with the addition of an interaction term between the realtime projection and the executive's ideological orientation. The coefficient for the interaction effect is small and not significant, indicating that left-wing and right-wing governments have reacted to the perceived economic situation in a similar way. This does not necessarily mean that they have had similar ambitions for Keynesian activism, because the response to realtime projections is affected by both counter-cyclical ambitions and reactions to the estimated structural balance. The estimated effect of perceptions has increased a little bit compared to column 3, but that only reflects the change in interpretation which follows from the addition of the interaction variable.

Finally, the last column addresses a possible endogeneity problem. Another explanation of these results could be that fiscal policy has been more expansive than what OECD anticipated, which in these cases would have raised output above the projected levels and caused a spurious correlation between the budget balance and the output gap revisions similar to the one described above. To rule out the possibility that it was unexpected fiscal policy that caused the revisions of the output gap, I replace the realtime projections made a year in advance with the corresponding estimations that were made at the end of the fiscal year. These estimations should include information about virtually all fiscal policy that was implemented during the year and should therefore be less susceptible for the kind of reverse causation outlined above. Fortunately, using a later projection only marginally affects the size of  $\phi$  (it changes from  $-1.10$  to  $-1.01$ ).

So, how significant are these findings for fiscal performance? Figure

3.3 presents two simulations of the trajectories of debt in the United States and Portugal if perceptions had been different. The American situation during this period is typical of OECD countries. The second half of the 1990s was characterised by fiscal consolidation that came to a halt with the bursting of the IT-bubble. Real-time projections of the output gap were, on average, about one per cent of GDP lower than the most recent estimations indicate. Portugal and Ireland are two of the countries where real-time projections of the output gap have shown the largest bias relative to revised assessments. Unlike in Ireland, however, debt in Portugal was soaring at an alarming pace well before the crisis struck. As such, Portugal is a more illustrative case.

The left graph shows the American net debt together with a projection of how it would have developed had forecast errors of the output gap been the same as in Ireland.<sup>44</sup> As shown, the predicted fiscal position would have been distinctly different. The fiscal consolidation of the Clinton years would have been entirely reversed, and at the advent of the fiscal crisis, the US debt would already have been much larger than at its peak level during the 1990s. This would, in turn, have limited the room for fiscal manoeuvre during the current economic downturn. The right graph shows debt levels in Portugal together with predictions of what they would have been had perceptions been in line with actual outcomes. If the estimations are correct, the debt would have been smaller in 2007 than it was a decade earlier instead of increasing by 20 per cent of GDP. Needless to say, the perceptions that faced policy makers in these two countries were critical to their different fiscal performances.

### *Robustness*

This section addresses four minor concerns. First, what if the results are sensitive to the sample used? Fortunately, the baseline results appear to be relatively robust to the removal of observations. Excluding the countries one by one shows that the effect remains statistically significant at the 95 per cent level, with one exception. If Greece is removed from the sample, the estimate of  $\phi$  drops to  $-0.76$  and the effect is only statistically significant at the 90 per cent level. The results are not sensitive to the removal of any single observation.

Second, would a different measure of the business cycle yield different results? The OECD estimations of the output gap are less susceptible to political manipulation than official government assessments. Despite

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<sup>44</sup>The projection simply adjusts the actual debt development with the difference in forecast errors compared with Ireland, multiplied by the estimate of  $\phi$  from column 4 in Table 3.4. In other words, it assumes that the policy response to the estimated output gap is both linear and unaffected by the debt level.

Table 3.5: Different robustness tests

	(1)	(2)	(3)	(4)
Gap <sub>t</sub> <sup>t-1</sup>	-0.94** (0.35)		0.12** (0.05)	-0.93*** (0.30)
Gap <sub>t</sub> <sup>t-1</sup> (HP-filter)		-1.68*** (0.57)		
GDP growth <sub>t</sub>	-0.52 (0.63)	-0.31 (0.59)	-0.10 (0.09)	-0.52 (0.55)
Election <sub>t</sub>	-0.10 (0.96)	0.18 (0.93)	-0.21 (0.19)	-0.05 (0.84)
Election <sub>t-1</sub>	0.29 (0.69)	0.45 (0.60)	0.03 (0.17)	0.30 (0.60)
ΔInflation <sub>t</sub>	0.59* (0.31)	0.48 (0.30)	0.08 (0.08)	0.60** (0.27)
ΔInt.payments <sub>t</sub>	-2.14 (1.64)	-2.27 (1.81)	0.25 (0.22)	-2.06 (1.47)
ΔDebt <sub>t-1</sub>	-0.12 (0.07)	-0.10 (0.07)		-0.12* (0.07)
Unemployment rate	0.29 (0.28)	0.45 (0.32)	-0.07 (0.09)	0.31 (0.26)
Left-wing	-0.32 (0.78)	-0.49 (0.80)	0.22 (0.27)	-0.37 (0.67)
Coalition	-0.27 (1.81)	-0.45 (1.91)	-0.32 (0.54)	-0.47 (1.48)
Minority	-0.14 (1.06)	-0.27 (1.00)	-0.49* (0.27)	-0.18 (0.91)
Primary balance <sub>t-1</sub>			0.69*** (0.03)	
Constant	-2.69 (2.56)	-1.36 (2.47)	1.69*** (0.54)	2.56 (3.46)
Observations	332	332	332	301

Country-clustered robust standard errors in parentheses. The coefficients for revised output gaps vary between countries and are not reported in the table. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

this, however, there remains a risk that the OECD projections could be influenced by national governments. If so, governments might manipulate assessments in such a way that fiscal policies appear to be better adapted to economic conditions. The estimates of  $\phi$  could then reflect reverse causality – changes in projections motivated by changes in fiscal policy instead of the policy response discussed in this essay. To address such concerns, I have experimented with replacing the output gap estimations made by the OECD with a simple Hodrick-Prescott filter<sup>45</sup>, which was

<sup>45</sup>The HP-filter is probably the most commonly used smoothing method in the macroeconomic and real business cycle literature. It is a simple algorithm that deconstructs a single time-series into one trend component and one cyclical component.



applied to annual real-time projections of GDP published by the OECD. The first column in Table 3.5 is identical to the third column in Table 3.4 and serves as a point of reference to which the results in the other columns can be compared. As shown in the second column, the coefficient for the output gap generated with a HP-filter is much larger and statistically significant at the 99 per cent level. The reason for the size difference is that the HP-filter generated much less volatile output gaps.

Third, I have argued extensively for the change in net debt as my dependent variable, but does this choice affect my results? In the third column I have replaced the dependent variable with the underlying primary balance, which is a measure of the budget balance – excluding one-time expenditures and the net interest payments on debt – that has been adjusted for the business cycle. The effect remains statistically significant, but is now smaller. A permanent decrease in the real-time gap projection with 1 per cent of potential GDP is estimated to worsen the annual budget balance with 0.4 ( $0.12/(1-0.69)$ ) per cent of GDP.

Last, and as earlier noted, including fixed effects in a model with a lagged dependent variable makes the OLS estimator biased. The fourth column of Table 3.5 shows the model estimated with the consistent GMM estimator of Arellano and Bond (1991).<sup>46</sup> The regression coefficient for the real-time output gap remains significant and is similar in size to previous estimates.

## Conclusions

When policy makers believe that the country is in an economic downturn, they pursue more expansionary policies to stimulate demand and return output to potential. Negative estimations of the output gap will also cause the structural budget balance calculations to indicate that the budget balance will improve as soon as the economy returns to normal. Similarly, governments respond to economic upturns by raising taxes or reducing expenditures. So far, so good.

Unfortunately, the perceptions on which governments have based their decisions have systematically differed from actual economic outcomes. Policy makers have repeatedly been told that their countries are in the midst of economic downturns, assessments that have often turned out to be false. Consequently, fiscal policy has been much more expansive than it would have been had perceptions been unbiased. This essay does not determine whether fiscal policy would have been well balanced if perceptions were unbiased; it only provides an estimation of how different

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<sup>46</sup>All available instruments are used. A Sargan test does not reject the null hypothesis that the overidentifying restrictions are valid.

such policies would have been. According to the estimations, the average effects of biased perceptions on annual budget balances have been in the range of 1–2 per cent of GDP.

One could object that policy makers should have learned by now that projections are biased and that they should have adjusted fiscal policy accordingly. Such an objection could question both the results found in this essay as well as my interpretation of them. What if governments anticipated the projection errors and still accumulated so large debts? However, I think that would be to demand too much from the politicians. I would expect the experts to react faster than the policy makers, and there are many reasons to doubt that the former have adapted to previous forecast errors. First, it does not appear as if the bias has decreased over time. On the contrary, the projections during the 1990's were on average revised upwards with 1.1 percentage points, compared to 1.9 percentage points for the period 2000–2012. Second, when the EU, the OECD and the IMF have given policy advice to member countries, they have – as far as I know – not acknowledged the risk that their calculations are biased. As argued in the introduction, they did not criticize fiscal policy until they revised their economic projections. Third, similar projection errors probably brought the Federal Reserve to excessive activism both at the brink of the Great Depression (Orphanides 2003) and during the Great Inflation of the 1970s (Orphanides 2002).

There are reasons to believe that this finding is not limited to the period studied in this essay but that the same mechanism has been in effect during earlier periods of debt accumulation. Let us first establish that two conditions must be fulfilled for these effects to occur. The first condition is that governments must react to perceived economic downturns with expansionary fiscal policy. With the monetaristic 1980s as a possible exception, this has arguably been the case in most of the postwar period. In addition, fiscal policy need not be Keynesian. Negatively biased assessments of the output gap will still affect fiscal policy through overestimates of the structural budget balance.

The second condition is that perceptions of the business cycle must be negatively biased. This condition is more difficult to examine, because comparative data is not available before the 1990s, but there are three arguments for why I believe this to be the case. First, the years between 1970 and the 1990s was a period of rising equilibrium unemployment and a substantial decline in potential growth. Unless this development was correctly interpreted as a structural change it would have caused assessments of the business cycle to be overly negative. This is also what Orphanides and van Norden (2002) find when they use a large set of detrending methods to retrospectively estimate real-time projections of

the output gap for the United States between 1966 and 1997. Their real-time projections were consistently revised upwards, just like the data used in this essay. Second, although the regular estimation of output gaps is a more recent development, the OECD has presented business cycle analyses in its Economic Outlook since 1967. A thorough examination of the December editions published before 1996 shows that only once has the OECD identified an economic upturn (the last years of the 1980s). With few exceptions, the world economy is described as being in the midst of – or recovering from – an economic downturn. In contrast, the OECD today identifies three distinct upturns during the same time period. Third, it is easy to gather anecdotes of how the perceptions of the economy has influenced policy during previous crises. For example, Roubini and Sachs (1989) describe how the fiscal consolidation was delayed following the shocks of 1973 and 1979 because analysts wrongly expected the growth slowdown and the rise in unemployment to reverse.

To summarise, there are good reasons to believe that both of the necessary conditions were fulfilled during the decades preceding the time-period examined in this essay. If true, biased perceptions contributed to the growth of public debt during the 1970s and 1980s.

In one sense, this is a positive message. Perhaps the proposed tension between democratic representation and fiscal performance is exaggerated and politics is working better than some authors have claimed (Alesina 1988; Persson and Tabellini 2003)? If not for biased perceptions, public finances would have been in much better shape. It could also be that things have changed. Past experience with debt crises and fiscal austerity might have made voters more aware of budget constraints and altered the economic-political discourse.<sup>47</sup> Earlier research has also made essential contributions by pointing to the problem and proposing a plethora of solutions. During recent decades, in response to this research, we have witnessed pervasive reforms of budgetary rules and other fiscal institutions aimed at alleviating the common-pool problems of politics and consolidating public finances.

On the other hand, the results also point to limitations on what can be achieved by further advances in this direction. Because the policies advocated by the EU and the IMF were only marginally different from those carried out by governments in Ireland and similarly situated countries, it appears that not even a complete delegation of fiscal policy to independent experts would guarantee a sustainable fiscal policy. This is an argument in favour of general fiscal prudence, especially when debt levels are above average. It also highlights the problems that arise when fiscal policy is too

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<sup>47</sup>In fact, it is difficult to find evidence that governments have ever been punished for fiscal consolidation (Alesina et al. 2012).

dependent on forward-looking budgetary rules and unreliable estimates of structural balances, which is the case with the European Stability and Growth Pact.

Compared with what has been accomplished with respect to monetary policy, which is primarily governed by independent central banks, there is much to be done with real-time data in the analysis of fiscal policy. This is symptomatic of research within the political economy field. The notion of political failure has become the self-evident answer to all issues regarding fiscal performance, effectively impeding the search for complementary explanations. The findings of this essay highlight several issues to address.

First, the failure of the traditional politico-institutional explanations to account for fiscal policies pursued in recent years requires more attention. While the common-pool theory and its variants are perfectly compatible with the idea that fiscal policy is strongly affected by economic perceptions, it is probably not a coincidence that it is during periods of (relative) fiscal discipline that measures of political fragmentation lose their explanatory power. Can it be that political fragmentation undermines fiscal discipline during more favourable conditions, but helps governments to escape electoral punishment during times of fiscal consolidation? The dynamics surrounding fiscal discipline, on the one hand, and debt accumulation and fiscal consolidation, on the other, should be further researched.

Second, the relationship between economic perceptions and official government forecasts is an important area of future research. Several recent studies have shown that domestic forecasts are biased relative to actual outcomes and that this bias negatively affects fiscal policy. Such studies conclude that forecasts are susceptible to manipulation and therefore should be made by independent agencies. However, similar bias can be found in forecasts made by the OECD. Distinguishing between political manipulation and biased perceptions, where the latter are shared by independent experts, would advance this field further. This includes an examination of how governments treat competing forecasts from different sources or that have different policy implications.