Can Public Sector Wage Bills Be Reduced?[1]

P. Cahuc[2] and S. Carcillo[3]

July, 2, 2011

Very preliminary draft

Abstract:

This paper analyzes the relation between public wage bills and public deficits in the OECD countries from 1995 to 2009. The paper shows that fiscal drift episodes, characterized by simultaneous increases in the GDP shares of public wage bills and budget deficits, are more frequent during booms and election years, but not during recessions, except for the 2009 exceptionally strong recession. The emergence of fiscal drift episodes during booms and election years is less frequent in countries with more transparent government and with presidential regime.

1. Introduction

Many OECD countries currently face important budget deficits and need fiscal adjustment. Public wage bills represent a large share of public expenditure in many countries (about 55 percent on average in 2009) and for this reason cannot be easily excluded from ambitious fiscal adjustments. Governments that make fiscal adjustments ought to have a hold on the level of their public wage bills (Alesina and Perotti, 1995). This paper analyzes the relations between public wage bills and public deficits. This analysis sheds light on the features of the economy and of the government that facilitate or hinder adjustments of public wage bills when governments need to reduce their public deficit.

More precisely, we explore how governments adjust public wage bills and public deficits when shocks hit the economy. We analyze the consequences of GDP shocks and elections. We examine how the interaction between these shocks and several features of public institutions such as their

[1] This paper is commissioned for the NBER conference on "Fiscal Policy after the Financial Crisis" to be held at IGIER-Bocconi University in Milan (Italy) in December 2011. This version is presented at a pre-conference held at the NBER 2011 Summer Institute on July 14-15. The authors would like to thank Ariane Salem for excellent research assistance. The opinions expressed and arguments employed here are the responsibility of the authors and do not necessarily reflect those of their corresponding institutions.

[2] Ecole Polytechnique, CREST, IZA and CEPR. Email : pierre.cahuc@polytechnique.edu

[3] OECD, Sciences Po Paris, and IZA. Email: stephane.carcillo@oecd.org

transparency,[4] the political regime (parliamentary versus presidential)[5] and the electoral rule (majoritarian versus proportional).[6]

We start out by describing the relations between public deficits and public wage bills. It turns out that there is no systematic *cross-country* relation between the share of public wage bills in GDP and the level of public deficits. There are very large cross-country differences in the share of public wage bills in terms of GDP, which ranges from 6.3 percent of GDP (Japan) to 17.5 percent of GDP (Denmark) over the 1990-2009 period. But countries with larger wage bills do not have necessarily larger public deficits. However, there is a strong positive *within* country correlation between public wage bills and public deficits, even when these two variables are averaged over five-year periods. This indicates that public deficits tend to increase in countries where public wage bills increase faster than GDP.

In order to describe more precisely the situations where there is lack of control of public wage bills, we define episodes of what we call "fiscal drift", where there are simultaneous increases in the share of public wage bills in GDP and in public deficits. We interpret the occurrence of such episodes as the sign of a lack of control of public wage bills and public expenditure.

With this definition in mind, we analyze in turn the probability that fiscal drift episodes appear. In doing so, we identify when these episodes occur around economic or political cycles, conditional to the degree of transparency of the government, the political regime and the electoral rule.

Strikingly, we find that fiscal drift episodes do not come out more frequently during slumps, as could be expected, but during booms. This suggests that fiscal drift episodes are mostly induced by a perverse functioning of the political system. The fact that fiscal drift episodes are more frequent during election years reinforces the relevance of this interpretation. The analysis of the interactions

[4] Recent papers have connected economic policy with the transparency of governments. Alt and Lassen (2006) and Shi and Svensson (2006) show that electoral cycles in fiscal balances are more pronounced in countries with lower transparency. Gavazza and Lizzeri (2009) show that imperfect observability generates an incentive for politicians to offer excessive transfers partly financed through public deficits. Alesina, Campante and Tabellini (2008) and Lane (2003) analyze the cyclical behavior of fiscal policy in OECD countries. Lane stresses that political economy factors play an important role in determining the degree of cyclicality in government spending across OECD countries, especially for wage government consumption. Alesina, Campante and Tabellini (2008) argue that more corrupt countries display more procyclical fiscal policies because when more resources are available (i.e., in booms), the common-pool problem is more severe, and the fight over common resources intensifies, leading to budget deficits, this effect being stronger in more corrupt countries.

[5] Persson (2002) finds that, empirically, presidential regimes are associated with smaller and less persistent responses of spending to income shocks, a stronger post-election cycle in aggregate spending and revenue, but a weaker cycle in social transfers.

[6] Persson and Tabellini (2000, Ch. 9) argue that electoral cycles, showing up in spending or taxes, should be weaker under proportional representation compared to majority rules, because the incumbents' career concerns are stronger with individual accountability stemming from majority rules and because these concerns are at their strongest just before elections.

between shocks and institutional features of governments allows us to shed more light on this phenomenon. We find that fiscal drift associated with booms are less frequent in more transparent countries and when the political regime is presidential.

The paper is organized as follows. Section 2 presents the relation between public deficits and public wage bills in OECD countries over the last 15 years. Section 3 is devoted to the description of fiscal drift episodes. In section 4, we analyze the how the transparency of public institutions influences on the ability of the government to adjust public wage bills when fiscal adjustments are needed.

2. Public wage bills and public deficits

2.1. Data

Public wage bills

The definition of public wage bills hinges on the definition of the scope of the public sector. The public sector can comprise only general government employment, or general government and public corporations employment (legal entities that are owned or controlled by the government and produce most of their goods and services for sale in the market at economically significant prices).

There are multiple national sources of data collection, and very few cross-country comparable data on public employment and public wage bills. Unfortunately, there is very limited cross country information on public employment.[7] There is more information on public wage bills, thanks to the rules of accountability of general government expenditures. Public wage bills include the total compensation of employees by the general government sector, which comprises all levels of government (central, state, local and social security) and includes ministries, agencies and non-profit institutions controlled by government. According to this definition, public wage bills do not include the compensation of employees in public corporations.

Measures of public payroll as a share of GDP come from annual national accounts. The UN system of national accounts (SNA) is a set of internationally agreed recommendations to collect

[7] The OECD has recently released homogenous data on public employment now available for 1995, 2000, 2005 and 2008 (Government at Glance) based on questionnaires that improve the comparability across country. The International Labor Organization also provides, in coordination with the OECD, such information extracted from a combination of different sources (administrative data or surveys) for a varying number of years depending on the country.

data with the latest operational revision dating from 1993. On this basis, homogeneous data for OECD countries are available on the period 1995-2009.[8]

Public deficit

General government national accounts usually report net-lending/net-borrowing, which represents the amount the government has available to lend or must borrow to finance its non-financial operations. This figure comprises the interest payable for the service of the debt. Net lending data comes from the OECD annual SNA database. Data are available for most countries since 1980.

2.2. Cross-country correlations between public wage bills and public deficits

Figure 1 shows that there are large cross country differences in the share of public wage bill in GDP over the period 1995-2009. The average share of public wage bill in GDP goes from 6.4 percent in Japan to 17.4 in Denmark. Public deficits are also very different across countries. Hungary is in the worst situation, with an average deficit equal to 6 percent of GDP. Over the same period, Norway had a positive net lending, equal to 11 percent of GDP.

Figure 1 shows that there is no cross-country correlation between the share of public wage bill in GDP and public deficits, even though public wage bill represents a large share of public expenditure. Scandinavian countries have the largest public wage bills associated with the largest positive net lending. At the opposite, Japan, the Czech Republic and the Slovak Republic have the smallest public wage bills but the largest public deficits. Overall, Figure 1 indicates that it is possible to have very large public sectors and sustainable public finances but also very small public sectors and unsustainable public finances.

2.3. Within-country correlations between public wage bills and public deficits

Figure 2 shows that OECD countries have experienced very different changes over time in public wage bills and public deficits since the mid nineties. There is no common general tendency across OECD countries. There is a negative trend in Austria, France, Germany, Israel, Luxembourg, Slovak Republic and Sweden. The trend is positive in Belgium, Greece, Ireland, United-Kingdom and United-States. Public wage bills fluctuate without showing any trend in other countries. There

[8] There are homogeneous data for all countries since 1995 for most OECD countries, and some data from 1970 to 1995 (few countries with observations as old as 1970, half of the countries with observations as old as 1980).

is also a strong increase in the share of wage bill in GDP in 2009 in most countries because the recession induced large drops in GDP in many countries.

Although there is no cross country correlation between public wage bills and public deficits, it turns out that there is a strong correlation between these two variables over time within countries. Table 1 shows the within country correlation between net public lending and public wage bills when these two variables are averaged over five year periods (i.e. 1995-1999, 2000-2004, 2005-2009). It turns out that there is a significant and sizeable correlation between these two variables, even when one controls for GDP growth, the share of population over 65 year old and below 15 year old. One percentage point increase in the share of public wage bill in GDP is associated with 1.5 percentage point decrease in net public lending. This indicates that changes in public wage bills explain about two third of the changes in net public lending.

This correlation suggests that countries where the public wage bill GDP share has been increasing since the mid nineties have also experienced worsening public deficits. In the next section, we focus more precisely on the episodes of worsening public deficits and increases in public wage bill GDP shares in order to shed light on the determinants of fiscal drifts induced by the inability to adjust public wage bills.

3. Episodes of "fiscal drift" induced by public wage bill drift

Even though higher deficits tend to be associated with lower net lending positions within countries, the fact that some countries with high levels of public employment do no experience large and recurrent deficits (e.g. Denmark or Sweden) raises the question about the ability to *adjust* the size of administration when it becomes necessary. To study this type of adjustment we concentrate on "bad" episodes where both deficits and wage spending increase.

3.1. Definition of fiscal drift episodes

A fiscal drift episode induced by public wage bill drift is a situation where there are simultaneous increases in the GDP share of public wage bill and in the GDP share of public deficit. Obviously, by definition, there is necessarily a public deficit (i.e. a negative public net lending) during such fiscal drift episodes. We consider two different definitions of fiscal drift.

There is a "short fiscal drift episode" if there are simultaneous increases in the GDP shares of public wage bill and public deficit during at least one year. About one third (105 over 317) of country/year observations with public deficits correspond to fiscal drift episodes available for the OECD countries over the period 1995-2009.

The second definition is more restrictive: "long fiscal drift episodes" occur if there are simultaneous increases in the GDP shares of public wage bill and public deficit during at least two years. Such fiscal drift episodes occur for 60 country/year observations.

3.2. Description of fiscal drift episodes

Table 2 displays the years of fiscal drift episodes for every country. It turns out that short fiscal drift episodes occurred in almost all countries. There are only 2 exceptions: Korea and Norway. Most countries experienced more than one short fiscal drift episodes. The highest number of short fiscal drift episodes, equal to 6, is observed in the United States, where all fiscal drift episodes appeared in the 2000s. Following countries are Belgium, Italy, Slovak Republic and Slovenia, where 5 short fiscal drift episodes are observed.

Deficits are significantly much higher during short fiscal drift episodes. On average, public net lending amounts to -4.5 percent of GDP during short fiscal drift episodes while it averages to -0.5 percent of GDP excluding these episodes.[9] Not surprisingly, the GDP share of public wage bill also increases much more during fiscal drift episodes (0.46 percentage point of GDP) than outside these episodes where this share actually decreases (-0.12 percentage point of GDP).

Long fiscal drift episodes are observed more scarcely. Only 15 countries among the 32 OECD countries for which data are available experienced long fiscal drift episodes. On average, public deficits and changes in public wage bills are not statistically different during long and short fiscal drift episodes.

4. Determinants of fiscal drifts and fiscal tights

We are now looking at the determinants of fiscal drift episodes, which focus on the expansion of public employment in situations of fiscal deficit. We begin to define some shocks, which may

[9] These figures are equal to -3.5 percent and -0.45 percent respectively if 2009 is excluded.

foster changes in public wage bills and public deficits and describe their potential interactions with some institutional parameters. Then we present the econometric method and the empirical results.

4.1. Shocks and institutions

We consider 3 different types of shock that can affect the probability of occurrence of fiscal drifts: positive GDP shocks, negative GDP shocks and elections.

The impact of positive shocks on GDP on the occurrence of fiscal drift episodes is *a priori* ambiguous. On the one hand, increases in GDP mechanically reduce the GDP shares of public wage bills and budget deficits**.** But on the other hand, as stressed by Alesina et al. (2008), in weakly transparent and strongly corrupted countries, GDP increases can intensify the fight over common resources, leading to larger budget deficits and larger public wage bills. Accordingly, the probability to observe fiscal drift episodes should be higher during booms when governments are more opaque and more corrupt. This probability should also be lower in presidential regimes, where there is overall less possibility of discretionary increases in public expenditure.

Fiscal drift episodes are more likely to come out when there are negative shocks on GDP, which mechanically increase public deficits and the share of public sector wage bills in GDP. The impact of GDP shocks on fiscal drift episodes may depend on the efficiency of the government for two at least reasons. In the first place, in a situation of negative GDP shock, more transparent governments should have more incentives to adjust public wage bills in order to avoid soaring public deficits: when the actions of the government are transparent, voters are well informed about the use of public money, the effectiveness of spending and the long-term consequences of deficits. In the second place, more transparent governments should also be able to react more quickly: it is easier to cut spending when it is used in a transparent way than to cut rents that are distributed to secure future votes. Political institutions might also play a role as suggested by Persson and Tabellini (2000). For instance, countries with parliamentary regimes and proportional electoral systems tend to experience counter-cyclical changes in public spending and deficits, with a sort of ratchet effect (spending and deficits increase in cases of negative GDP shock but do not decrease in the same proportion in cases of positive GDP shock).

The occurrence of fiscal drift episodes can also be influenced by elections. During election years, candidates have incentives to increase public wage bills, possibly at the expense of worsening budget deficits. This type of behavior is likely to be amplified by corruption and lack of

transparency (Shi and Svensson, 2006, Alesina et al. 2008). Elections cycles could also institution-dependent. For instance, majoritarian countries should in theory experience larger election cycles because of the individual accountability of incumbents and incentives to spend more just before elections. One would expect countries with presidential regime to spend less than countries with parliamentary regimes during election years since checks and balances are stricter in presidential regimes

4.2. Econometric method

In what follows, we evaluate to what extent the emergence of fiscal drift episodes is influenced by the features of public institutions when there are shocks on GDP and elections. To answer this question, we estimate the following model:

$$y_{i,t} = a_1\, y_{i,t-1} + a_2\, shock_{i,t} + a_3\ shock_{i,t} * instit_i + a_4\ x_{i,t} + \ a_5\ D_{2009} + \mu_i + \varepsilon_{i,t} \qquad (1)$$

where $y_{i,t}$ is equal to 1 if there is a fiscal drift episode in country *i* at date *t,* and zero otherwise. $shock_{i,t}$ stands for a vector of shocks in country *i* at date *t*, that includes positive output gaps, negative output gaps and election years. The output gap is computed using the Hodrick-Prescott filter. We distinguish two different variables for the output gap to the extent that positive and negative output gaps may have different effects on the occurrence of fiscal drift episodes. The variable "positive output gap" is equal to the output gap when it is positive and to zero otherwise. The variable "negative output gap" is defined similarly (in absolute terms). $instit_i$ stands for a vector of institutional characteristics of country *i,* which includes the degree of transparency, the political regime (presidential versus parliamentary) and the election rule (proportional versus majoritarian). $x_{i,t}$ is a vector of control variables that comprises the share of the population over 65 and the share of population below 15. D_{2009} is a dummy for the recession year 2009. μ_i is a country fixed effect and $\varepsilon_{i,t}$ is a residual term.

We consider different versions of equation (1) including alternative measures of the features of public institutions and definitions of the fiscal drift. This equation raises several issues that call for specific treatments:

- First, the presence of the lagged independent variable $y_{i,t-1}$ is justified by the fact that fiscal stances are typically persistent over time; however, in this dynamic setting the OLS estimated are systematically biased (the residuals are auto-correlated) and do not converge unless we use a large number of time observations, which is not our case. Some techniques such as the Arellano-Bond method allow us to account for this autocorrelation issue.
- Second, the $shock_{i,t}$ variable might be endogenous; in the case of the output gap, it is clear that the intensity of the shock on public finance can be reduced in the short-run by large deficits and higher public employment compensation spending. Thus, this shock needs to be instrumented with variables that are not influenced by the fiscal stance or by the change in public employment spending. We consider two different instruments for the output gap for country *i* at date *t*. First, the past values of output gaps of country *i*. Second, the contemporaneous output gaps of all countries except country *i*.
- Third, the vector of institutional characteristics $instit_i$ is assumed to be constant over time. Actually, electoral rules and political systems do not change over time in most countries. The measures of transparency display some changes over time. However, transparency might be potentially endogenous; for instance if transparency is measured as the perception of corruption of public officers by voters, this perception might be influenced over time by the economic situation, which in turn can be influenced by the fiscal stance; also, acts of corruption might be more frequently observed at some times than others, such as general elections. For that reason, we interact the shock with the *average* value of the measure of transparency over the period. This is also justified by the fact that there is little change over time in the measures of transparency over the relatively short period of time covered by our data.

Our benchmark specification considers the first definition of fiscal drift episodes, which corresponds to years where there are simultaneously an increase in general government payroll and a decrease in public net lending in a situation of public deficit. The transparency of the government is measured with the corruption perception index of Transparency International, which takes on values from 0 to 10, a higher score corresponding to more transparent governments. In what follows, we use this variable centered on its average value over all the period 1995-2009 for all countries.

4.3. Empirical results

4.3.1. Shocks

Table 3 shows that the occurrence of *short* fiscal drift episodes is more likely when there are elections years and during economic booms. Strikingly, fiscal drift episodes are not more frequent when there are recessions, set aside the effect of the year 2009. This result shows up for different specifications of equation (1), which account for the autocorrelation of residuals and for the endogeneity of GDP shocks. Table 4 shows that the same result holds true for *long* fiscal drift episodes regarding positive output gaps, but not for elections. This clearly stems for the fact that general elections are rarely held two years in a row. Table 5 shows that this pattern is specific to wage spending compared to non-wage spending. Indeed, when we analyze similar episodes of fiscal drift but this time featuring a simultaneous increase of *non-wage* spending and deficits, fiscal drifts seem to be also associated with economic downturns, not only economic booms. This can be explained by the fact that most non-wage spending is made of transfers which are often counter-cyclical (e.g. income replacement benefits)

Tables 3 to 5 indicate that periods of simultaneous increases in public wage bills and in public budget deficits are not induced by adverse economic events. It seems that it is rather loose management of governments during economic booms as well as during periods of elections that fosters fiscal drifts. From this point of view, it is interesting to go further by looking at the influence of the features of public institutions.

4.3.2. The interaction between shocks and institutions

Table 6, presents the results when equation (1) is estimated using *short* fiscal drift episode as dependent variable, and table 7 using *long* fiscal drift episodes, using the Transparency International index as a measure of transparency. Column 1 in both tables estimates this equation using country fixed effects. This column shows, again, that there is an overall positive and significant correlation between the contemporaneous positive output gap (for a country of average transparency) [10] and the occurrence of fiscal drift episodes. The relationship is stronger for long episodes (at the 1 percent level). The crossed effect of the positive output gap and the degree of transparency is negative and significant at the 1% level for long episodes only. This means that the emergence of fiscal drift episodes of at least 2 years is less sensitive to the output gap in countries where governments are more transparent. This result indicates that more transparent governments are on

10 The institutional variables are centered on their means, so that the coefficients of the output gap hold for an "average" country in terms of institutional features.

average less prone to increase public deficits and public wage bills when the economy grows faster. For countries with the lowest degree of transparency, the relationship between the output gap and fiscal drift episodes becomes even positive.[11] The effect of transparency is sizeable due to large observed differences in this variable across countries: Mexico, which features the lowest average level of transparency, gets a low score of 3.4, whereas Denmark gets a top score equal to 9.3. This means that a larger output gap has a significant and negative impact on the probability of experiencing a fiscal drift in very transparent countries, while it has a significant positive impact of experiencing a fiscal drift in non transparent countries. Interestingly, the impact of output gaps - negative or positive - is not influenced by the political regime or by the type of election rule.

Election years are positively correlated with the occurrence of fiscal drifts, especially for short fiscal drifts: the coefficient is large and significant at the 1% level. Interestingly, this relationship does not seem to prevail for presidential regimes (or, to a lesser extent, in majoritarian countries for short episodes only): the crossed-effects between elections and the corresponding dummy is large, negative, and significant. This supports the intuition that the checks and balances typical of presidential regimes prevent fiscal drift in election years. Also, in more transparent countries, election years are less often associated with fiscal drift notably of long ones (but the size of the crossed effect is much smaller than that of the political regime)

Column 2 in Tables 6 and 7 presents the results when equation (1) is estimated with the Arellano and Bond method to account for autocorrelation of residuals due to the presence of the lagged dependent variable. The results turn out to be close to those obtained with the fixed effect method for short episodes: the interaction term between the output gap and the degree of transparency is now significant at the 1 percent level, while the positive output gap shock alone has a stronger effect (but larger standard deviation). The positive impact of elections and the negative crossed effect impact with presidential regimes are still significant and sizeable, for short and long episodes. As before, transparency influences negatively the role of elections on long fiscal drifts In column 3 we use the same method but we specify that variables derived from the output gap might be endogenous (and so are instrumented by their lagged values and lagged differences accordingly). Results turn out to be very similar. In column 4, we use the Arellano and Bond method again but this time we replace the output gap for each country by an average of the output gap of all other countries over the period to avoid endogeneity bias; the impact of transparency crossed with positive output gaps or elections is still significant, as well as the impact of presidential regimes crossed with election years, for both short and long episodes. Column 5 shows the results using the

11 For this country, the value of the transparency index is negative and the sign of the estimated coefficient of the crossed effect is also negative, while the sign of the estimated coefficient of the positive output gap variable is positive.

same type of instruments as in the Arellano-Bond method but where we instrument this time the output gap of each country with output gap of all other countries, and the endogenous dependant variable by its lagged and lagged in-difference values. Fiscal drifts are still positively correlated with positive output gaps and election years but the crossed effect of institutions seems weaker with this type of estimation, both for short and long episodes.

4.3.3.Robustness

A first test of the robustness of previous results is to change the measure of institutions. This issue is especially arising for transparency (the dummies for presidential regimes and majoritarian countries are quite straightforward and less subject to discussion). Tables 8 and 9 are similar to tables 6 and 7 except that they use the World Bank measure of corruption instead of that of Transparency International. Again, the crossed effect between the output gap and corruption is significantly positive and even larger in size than with the previous measure when using the Arellano-Bond method of estimation; positive output gap alone is still, on average, significantly correlated with the occurrence of fiscal drift, especially for long episodes. The impact of election years crossed with institutions remains unchanged.

In tables 10 and 11, we estimate equation (1) assuming that transparency is now provided by the freedom of press (from Freedom House) instead of perceptions of the exercise of public power for private gain (i.e. the typical definition used to build corruption indexes). Here, like for the two previous measures, a higher index means higher transparency so the results can be interpreted in the same way. The crossed effects of the output gap and elections with freedom of the press is still negative but much smaller than for the two other measures of transparency and often not significant except when the output gap of countries is proxied by the average output gap of other countries. The crossed effect of presidential regimes and elections is still very significant and negative.

Another test of robustness is to change the definition of shocks. First, election years can be identified in different ways: for instance, when an election is held in the first quarter of a given year it might be interesting to focus on the year just before the election rather than on the year of the election; second, an index for pre-election years and another for post-election years could help better identify the presence of budget cycles. We tested these alternative definitions and none changed significantly the overall impact previously identified of elections on fiscal drifts and the absence of fiscal drift in presidential regimes the year or elections or the year just before (we do not show the tables here) .

A last test of robustness is to change the intensity of output shocks. Tables 12 to 15 reproduce tables 3, 4, 6 and 7 but considering this time output gap variations of at least 1% in absolute value (which make up approximately one third of all observed changes in output gaps). Tables 12 and 13 show that results are very stable: short and long fiscal drifts are still positively and significantly correlated with positive output gaps (and not negative ones), while elections years are positively correlated with short fiscal drifts (but again not long ones). Tables 14 and 15 show that the crossed-effect of transparency with positive output gaps on the occurrence of fiscal drifts is still negative and significant, even when the economy experiences large shocks. Results regarding elections years and crossed-effects with the type of regime or the type of election rule are broadly unchanged.

5. Conclusion

This paper shows that there is a strong relation between worsening public finances and increases in public wage bills. However, this relation does not mean that large public wage bills are systematically conducive to worsening public finances. Actually, countries with the highest GDP shares of public wage bill also have the highest public net lending. This means that large public sectors have been compatible with sustainable public budgets in the OECD countries over the last 15 years. Our paper clearly shows that countries unable to adjust their public wage bills to make them compatible with sustainable public budgets are not those which are especially hit by negative economic shocks. Their main handicap is a lack of transparency and a lack of checks and balances on the political power of elected politicians. And in these countries, in the absence of institutional reform, the fiscal stance might deteriorate even further in upcoming economic booms because of public employment.

References

Alesina A., and Perotti, R., 1995, "Fiscal Expansions and Fiscal Adjustments in OECD Countries", *Economic Policy*, Vol. 10, No. 21 (Oct., 1995), pp. 205-248

Alesina, A., Campante, F., Tabellini, G., 2008, "Why is Fiscal Policy So Often Procyclical?" *Journal of the European Economic Association*, 6(5): 1006-1036

Barro, R., 1973, "The Control of Politicians: An Economic Model". *Public Choice*, 13: 19–42.

Gavazza, A. and Lizzeri, A., 2009, "Transparency and Economic Policy", *Review of Economic Studies*, 76(3): 1023-1048.

Lane, P., 2003, "The Cyclical Behavior of Fiscal Policy: Evidence from the OECD." *Journal of Public Economics*, 87, 1661–1675.

Persson, T. and Tabellini, G., 2000, *Political Econonmics: Explaining Economic Policy*. Cambridge, MA: MIT Press.

Persson, T. and Tabellini, G., 2001. "Political Institutions and Policy Outcomes: What are the Stylized Facts?," *CEPR Discussion Papers* 2872, C.E.P.R.

Persson, T., 2002, "Do Political Institutions Shape Economic Policy?" *Econometrica,* Vol. 70, No. 3, pp. 883-905.

Shi, Min and Jakob Svensson, 2006, "Political budget cycles: Do they differ across countries and why?" *Journal of Public Economics*, 90(8-9), pp. 1367-1389.

Figures

Figure 1 : Average public wage bill and net lending in OECD countries over the period 1995-2009. Source: OECD

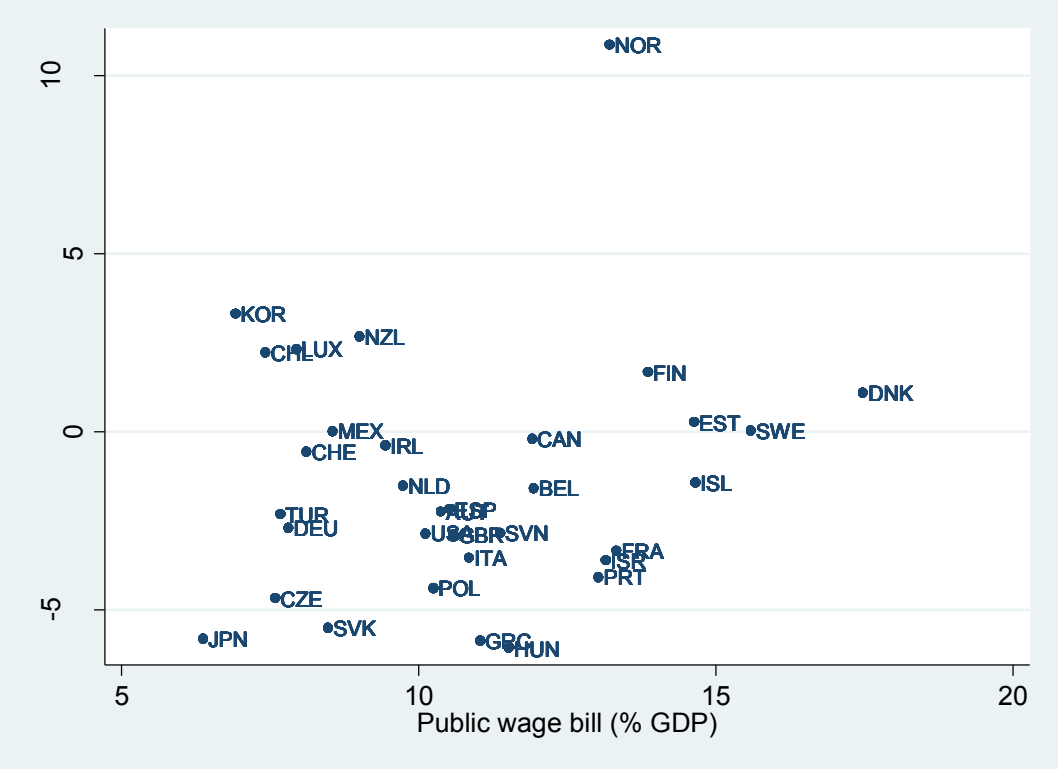
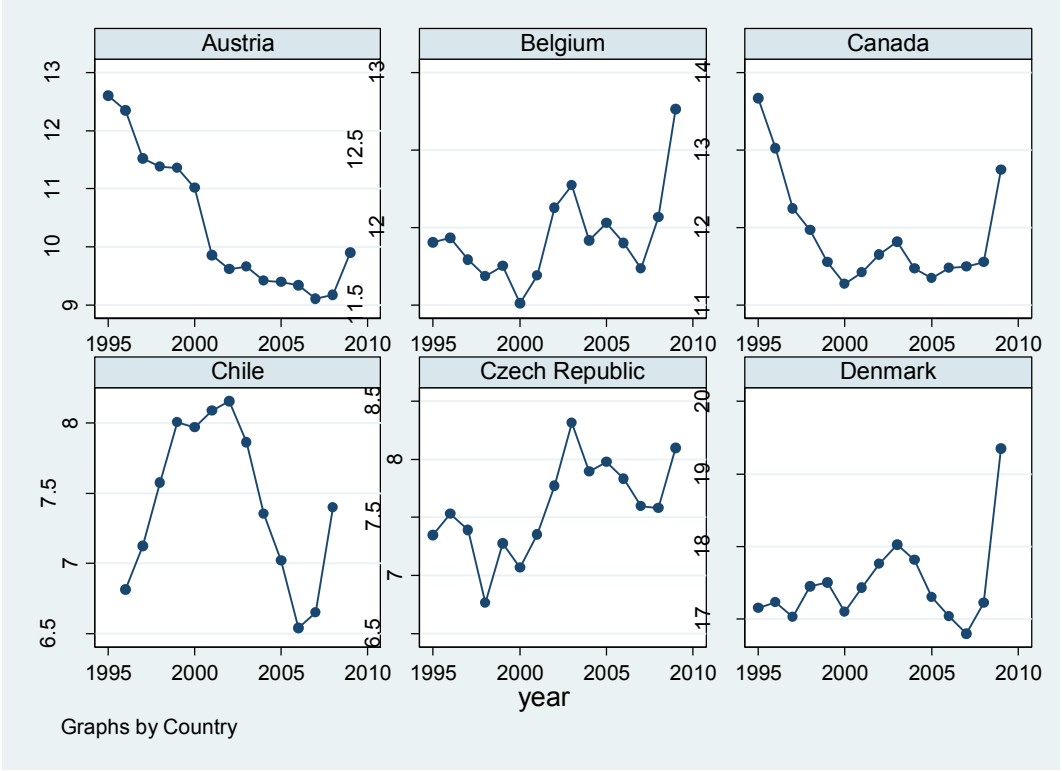
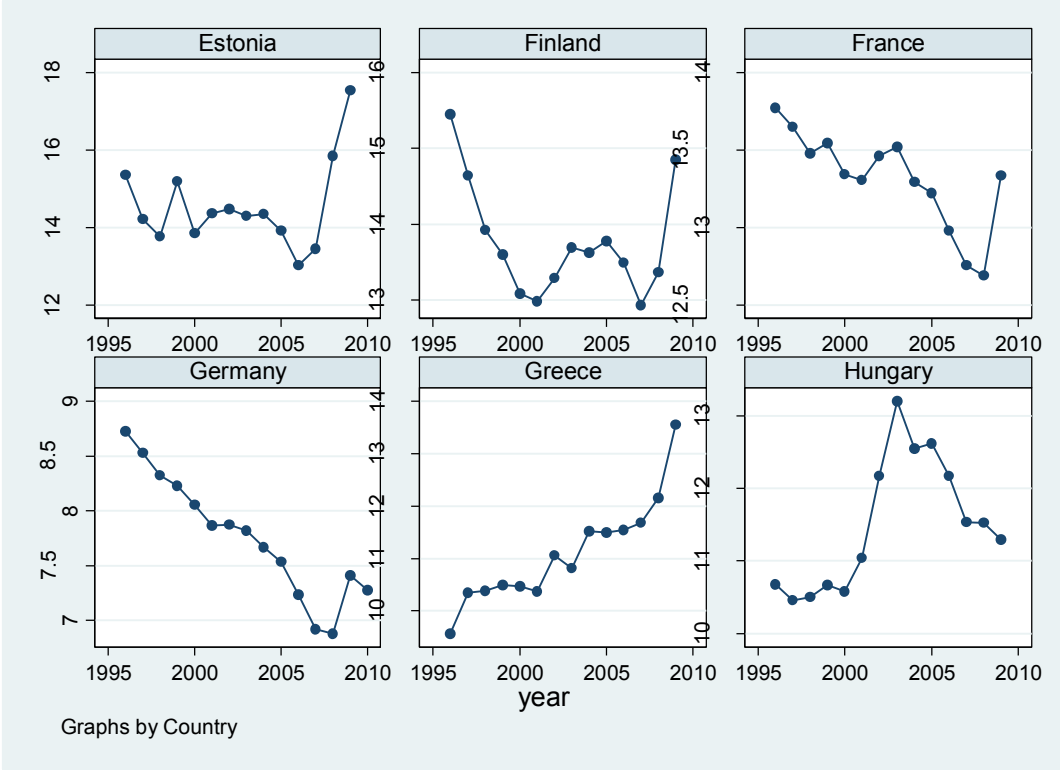
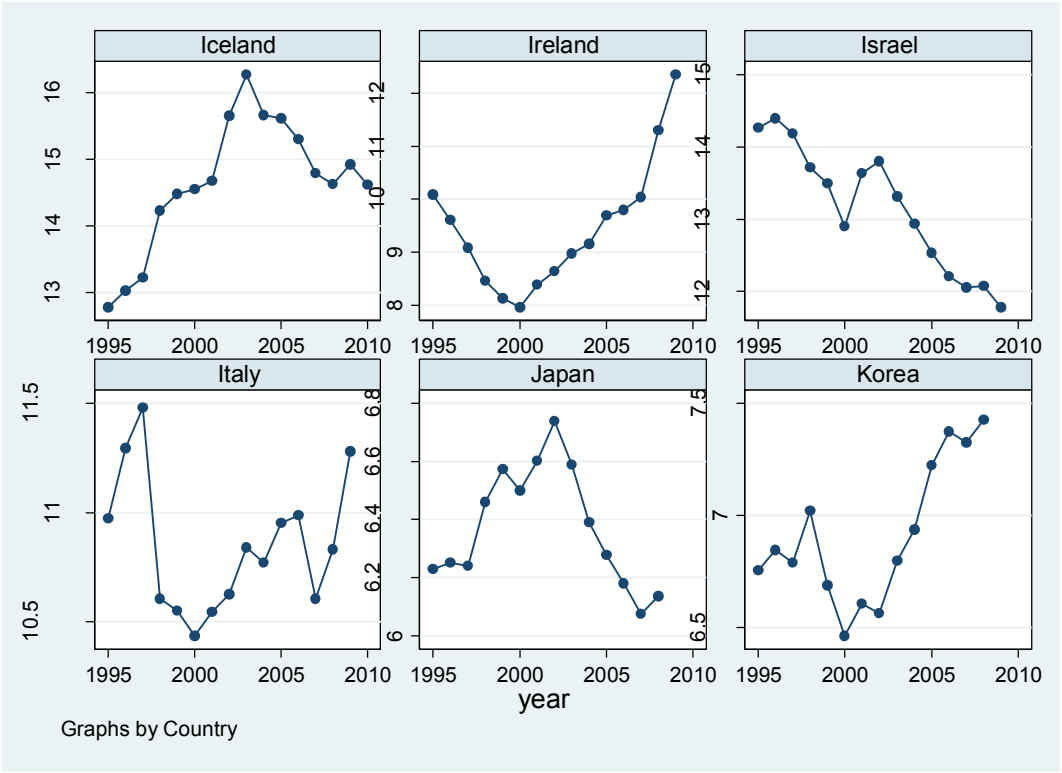
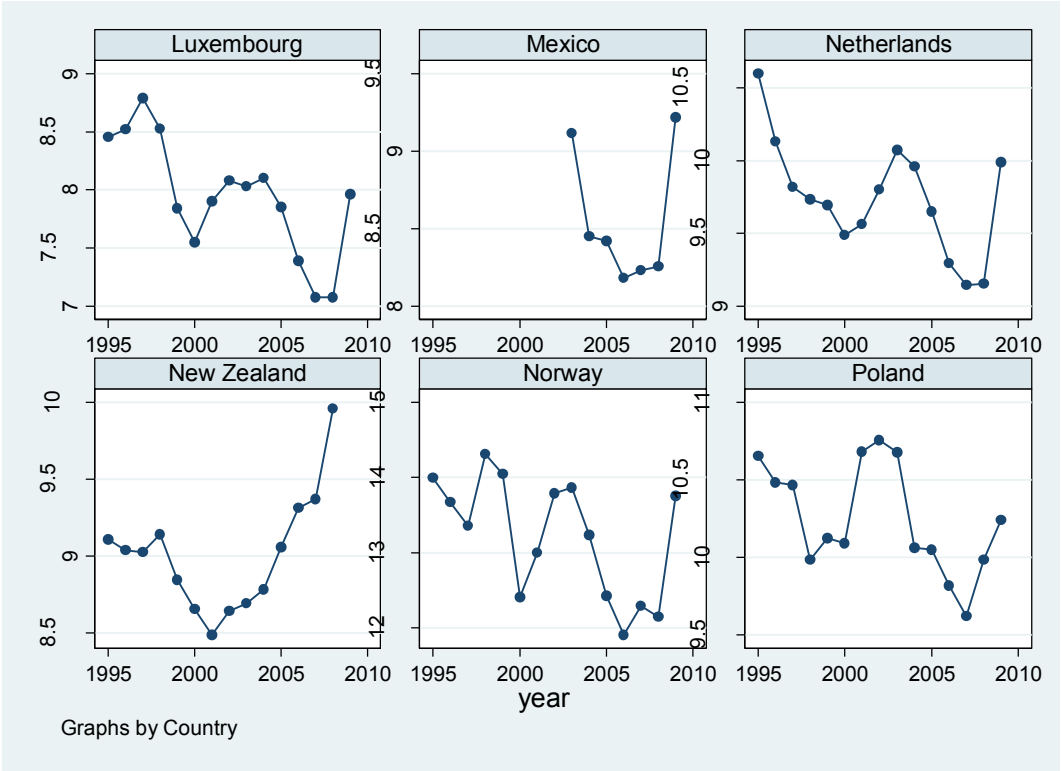


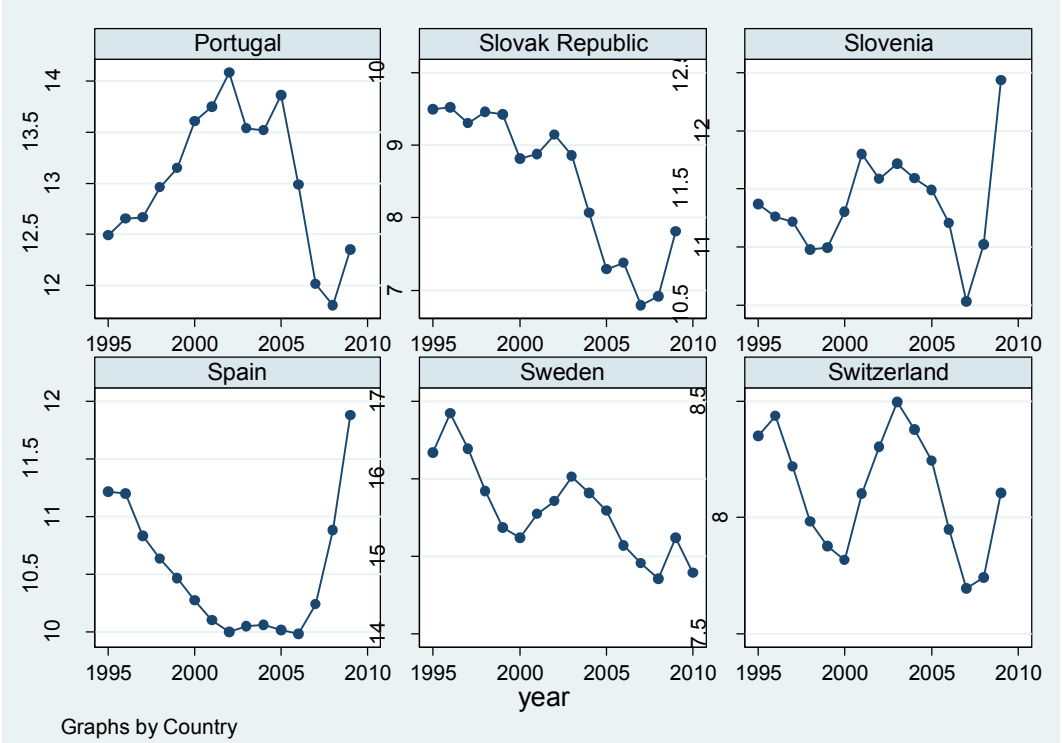
Figure 2: Public wage bills in OECD countries over the period 1995-2009. Source: OECD

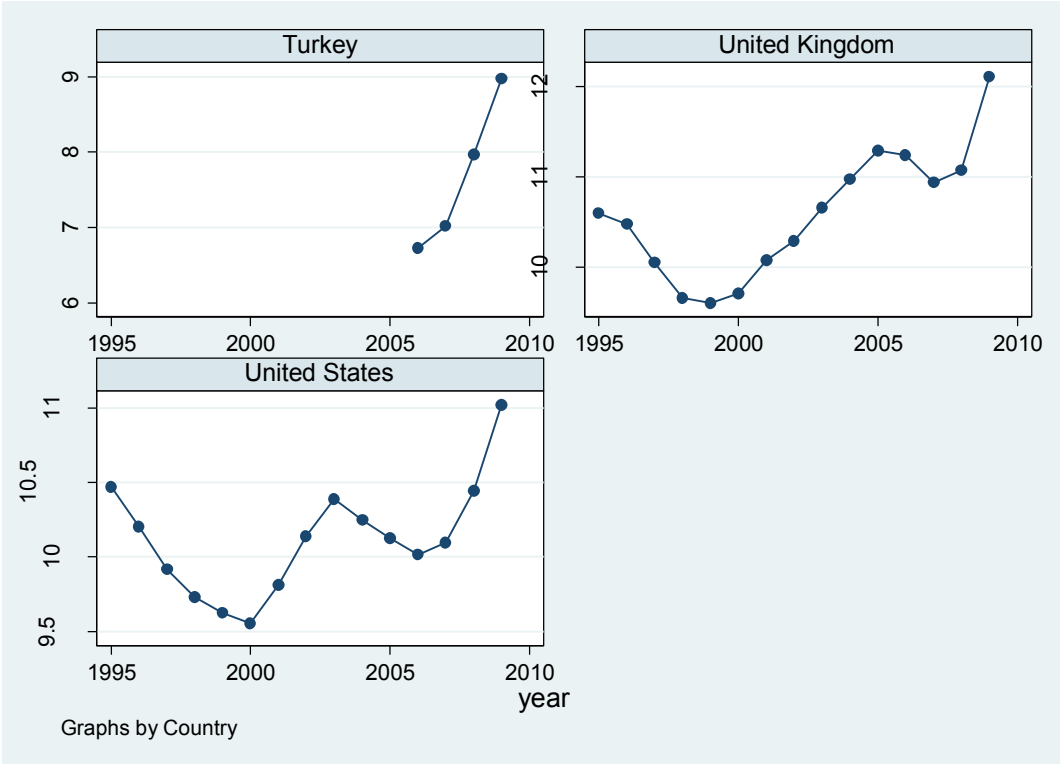





Iceland
Ireland
Israel
Italy
Japan
Korea
year
Graphs by Country


Luxembourg
Mexico
Netherlands
New Zealand
Norway
Poland
year
Graphs by Country


Portugal
Slovak Republic
Slovenia
Spain
Sweden
Switzerland
year
Graphs by Country


Turkey
United Kingdom
United States
year
Graphs by Country

Tables

Table 1: Within country correlation between public net lending and public wage bill

	Net lending	Net lending	Net lending
Public wage bill	-1.581***	-1.598**	-1.494**
	(0.546)	(0.589)	(0.655)
GDP growth		-0.053	0.057
		(0.222)	(0.278)
Pop over 65			0.398
			(0.320)
Pop below 15			0.041
			(0.237)
Constant	28.731***	29.117***	12.106
	(9.549)	(10.486)	(9.973)
Country effects (5-year_avg.)	Yes	Yes	Yes
R^2	0.900	0.900	0.907
Adj. R^2	0.846	0.843	0.848
Obs.	84	84	84

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis.
OLS with country fixed effects. Period 1995-2009. Variables are averaged over five year periods: 1995-1999, 2000-2004, 2005-2009.

Table 2: Fiscal drift episodes. There is a fiscal drift episode if there are simultaneous increases in the GPD shares of public budget deficits and public wage bills.

	One year fiscal drift	Two year fiscal drift
Austria	1995, 2003, 2009	
Belgium	2002, 2003, 2005, 2008, 2009	2002, 2003, 2008, 2009
Canada	2002, 2008, 2009	2008, 2009
Chile	1999, 2001	
Czech Republic	2001, 2002, 2005, 2009	2001, 2002
Denmark	2003, 2009	
Estonia	1999, 2008	
Finland	2009	
France	1995, 2002, 2003, 2009	2002, 2003
Germany	2002, 2009	
Greece	2002, 2004, 2007, 2008, 2009	2007, 2008, 2009
Hungary	1998, 2001, 2002, 2005	2001, 2002
Iceland	2001, 2002, 2003	
Ireland	2002, 2008, 2009	2008, 2009
Israel	1996, 2001, 2002, 2008	2001, 2002
Italy	2001, 2003, 2005, 2008, 2009	2008, 2009
Japan	1995, 1996, 1998, 2002	1995, 1996
Korea		
Luxembourg	2004, 2009	
Mexico	2008, 2009	2008, 2009
Netherlands	2001, 2002, 2003, 2009	2001, 2002, 2003
New Zealand	1998	
Norway		
Poland	2001, 2008, 2009	2008, 2009
Portugal	1998, 2000, 2005, 2009	
Slovak Republic	1996, 2002, 2006, 2008, 2009	
Slovenia	1999, 2001, 2003, 2008, 2009	
Spain	2004, 2008, 2009	2008, 2009
Sweden	2002, 2009	
Switzerland	2001, 2002, 2003	2001, 2002, 2003
United Kingdom	2002, 2003, 2008, 2009	2002, 2003
United States	2001, 2002, 2003, 2007, 2008, 2009	2001, 2002, 2003, 2007, 2008, 2009

Table 3 : Correlation between *short* fiscal drifts and shocks

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1	0.099	0.112*	0.080	0.126*	-0.067
	(0.060)	(0.060)	(0.053)	(0.069)	(0.292)
output_neg	0.029	0.031	0.034*		0.093
	(0.019)	(0.020)	(0.018)		(0.061)
output_pos	0.031*	0.038**	0.034**		0.070*
	(0.015)	(0.016)	(0.015)		(0.041)
elec	0.103**	0.087**	0.097**	0.096**	0.117***
	(0.046)	(0.041)	(0.042)	(0.043)	(0.042)
pop_below_15	-0.039	-0.048	-0.044	-0.018	-0.022
	(0.032)	(0.036)	(0.031)	(0.044)	(0.038)
pop_over_65	-0.045	-0.053	-0.054	-0.060	-0.054
	(0.043)	(0.049)	(0.047)	(0.044)	(0.038)
d_2009	0.540***	0.529***	0.527***	0.556***	0.479***
	(0.095)	(0.100)	(0.091)	(0.122)	(0.143)
output_ext_neg				0.030	
				(0.043)	
output_ext_pos				0.052	
				(0.034)	
_cons	1.451	1.733	1.673	1.277	1.208
	(1.150)	(1.293)	(1.177)	(1.338)	(1.153)
R^2	0.172				
Adj. R^2	0.157				
Obs.	387	375	375	354	362

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.

(1) OLS with country fixed effects.

(2) Arellano-Bond method;

(3) Arellano-Bond method where the output gap is instrumented its by lagged values;

(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.

(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 4: Correlation between *long* fiscal drifts and shocks

	(1)	(2)	(3)	(4)	(5)
L.cons_fiscal_drift1	0.591***	0.556***	0.559***	0.599***	0.297***
	(0.032)	(0.042)	(0.040)	(0.032)	(0.111)
output_neg	-0.004	-0.001	-0.005		0.043
	(0.008)	(0.012)	(0.009)		(0.038)
output_pos	0.037***	0.029**	0.032**		0.103***
	(0.013)	(0.015)	(0.012)		(0.030)
elec	0.003	0.010	0.004	0.011	0.020
	(0.034)	(0.036)	(0.033)	(0.036)	(0.031)
pop_below_15	-0.031	-0.070***	-0.031	-0.045**	-0.010
	(0.019)	(0.021)	(0.022)	(0.023)	(0.026)
pop_over_65	-0.023	-0.058***	-0.030	-0.051***	-0.044*
	(0.021)	(0.016)	(0.023)	(0.016)	(0.026)
d_2009	0.126***	0.007	0.108***	0.113*	0.192*
	(0.040)	(0.054)	(0.039)	(0.059)	(0.104)
output_ext_neg				-0.020	
				(0.024)	
output_ext_pos				0.060**	
				(0.030)	
Constant	0.927	2.148***	1.038	1.587***	0.788
	(0.618)	(0.582)	(0.691)	(0.567)	(0.760)
R^2	0.350				
Adj. R^2	0.338				
Obs.	387	375	375	354	362

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.

(1) OLS with country fixed effects.

(2) Arellano-Bond method;

(3) Arellano-Bond method where the output gap is instrumented its by lagged values;

(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.

(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 5: Correlation between short fiscal drifts (using non wage spending) and shocks

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1_nw	0.049	0.036	0.036	0.055	0.395
	(0.059)	(0.058)	(0.051)	(0.067)	(0.288)
output_neg	0.046**	0.044**	0.051**		0.129*
	(0.021)	(0.020)	(0.020)		(0.070)
output_pos	0.034*	0.037**	0.037**		0.153***
	(0.018)	(0.019)	(0.018)		(0.045)
elec	0.100*	0.092*	0.088*	0.106**	0.111**
	(0.055)	(0.049)	(0.051)	(0.053)	(0.047)
pop_below_15	-0.037	-0.062**	-0.037	-0.005	0.016
	(0.027)	(0.030)	(0.026)	(0.030)	(0.040)
pop_over_65	-0.044	-0.071*	-0.042	-0.097***	-0.038
	(0.039)	(0.041)	(0.042)	(0.032)	(0.040)
d_2009	0.526***	0.566***	0.526***	0.471***	0.355**
	(0.105)	(0.102)	(0.101)	(0.124)	(0.157)
output_ext_neg				0.121***	
				(0.041)	
output_ext_pos				0.120***	
				(0.036)	
Constant	1.423	2.283**	1.402	1.533	0.162
	(0.998)	(1.100)	(1.035)	(0.941)	(1.183)
R^2	0.154				
Adj. R^2	0.139				
Obs.	384	373	373	352	361

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 6: Correlation between *short* fiscal drifts and shocks interacted with institutions (using the Transparency International index for transparency)

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1	0.057	-0.039	-0.083	-0.025	0.238
	(0.088)	(0.091)	(0.086)	(0.085)	(0.232)
output_neg	0.058*	0.061	0.064*		0.250*
	(0.031)	(0.038)	(0.037)		(0.135)
output_pos	0.046**	0.070*	0.071**		0.239**
	(0.021)	(0.037)	(0.034)		(0.120)
output_ti_neg	0.006	0.004	0.005		-0.050
	(0.022)	(0.021)	(0.021)		(0.047)
output_ti_pos	-0.014	-0.031***	-0.019**		-0.038
	(0.008)	(0.009)	(0.008)		(0.029)
output_presid_neg	-0.115	0.023	0.024		-0.740
	(0.131)	(0.159)	(0.159)		(0.783)
output_presid_pos	0.010	0.153	0.185		-0.262
	(0.098)	(0.131)	(0.126)		(0.444)
output_major_neg	0.144	0.126	0.145*		0.662*
	(0.086)	(0.093)	(0.086)		(0.349)
output_major_pos	0.071	0.042	0.046		0.469**
	(0.056)	(0.048)	(0.053)		(0.232)
elec	0.173***	0.190***	0.215***	0.190***	0.258**
	(0.047)	(0.056)	(0.055)	(0.052)	(0.106)
elec_presid	-0.344***	-0.359**	-0.299**	-0.363***	-0.472*
	(0.107)	(0.155)	(0.142)	(0.103)	(0.284)
elec_ti_cpi	-0.042*	-0.047	-0.031	-0.061***	-0.114*
	(0.022)	(0.031)	(0.027)	(0.022)	(0.064)
elec_major	-0.191*	-0.194*	-0.238**	-0.196**	-0.116
	(0.096)	(0.105)	(0.105)	(0.091)	(0.200)
pop_below_15	-0.054	0.187*	0.167	0.311**	-0.065
	(0.045)	(0.099)	(0.103)	(0.126)	(0.250)
pop_over_65	-0.083	-0.077	-0.073	-0.158**	-0.212
	(0.056)	(0.072)	(0.071)	(0.079)	(0.186)
d_2009	.				.
	.				.
output_ext_neg				0.039	

				(0.045)	
output_ext_pos				0.138***	
				(0.041)	
output_ext_ti_neg				-0.048	
				(0.032)	
output_ext_ti_pos				-0.041***	
				(0.015)	
output_ext_presid_neg				-0.040	
				(0.140)	
output_ext_presid_pos				0.205**	
				(0.100)	
output_ext_major_neg				-0.045	
				(0.109)	
output_ext_major_pos				-0.003	
				(0.083)	
Constant	2.258	-2.165	-1.863	-3.234	3.940
	(1.483)	(2.261)	(2.457)	(3.072)	(5.825)
R^2	0.152				
Adj. R^2	0.101				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 7: Correlation between *long* fiscal drifts and shocks interacted with institutions (using the Transparency International index for transparency)

	(1)	(2)	(3)	(4)	(5)
L.cons_fiscal_drift1	0.541***	0.500***	0.494***	0.526***	0.247
	(0.059)	(0.091)	(0.080)	(0.085)	(0.197)
output_neg	0.012	0.026	0.019		0.102
	(0.013)	(0.021)	(0.019)		(0.085)
output_pos	0.059***	0.067**	0.076***		0.139**
	(0.016)	(0.027)	(0.024)		(0.066)
output_ti_neg	-0.004	-0.010	-0.005		-0.006
	(0.007)	(0.007)	(0.008)		(0.028)
output_ti_pos	-0.024***	-0.011	-0.026***		-0.025
	(0.007)	(0.010)	(0.009)		(0.017)
output_presid_neg	0.010	0.106	0.087		0.118
	(0.055)	(0.098)	(0.086)		(0.458)
output_presid_pos	0.023	0.186	0.130		0.125
	(0.091)	(0.130)	(0.110)		(0.262)
output_major_neg	-0.001	-0.007	-0.008		0.383
	(0.038)	(0.047)	(0.046)		(0.240)
output_major_pos	0.042	0.051	0.015		0.285*
	(0.046)	(0.041)	(0.046)		(0.152)
elec	0.069**	0.094***	0.100***	0.095***	0.045
	(0.030)	(0.035)	(0.037)	(0.033)	(0.060)
elec_presid	-0.363***	-0.385***	-0.408***	-0.409***	-0.356*
	(0.049)	(0.058)	(0.065)	(0.080)	(0.183)
elec_ti_cpi	-0.030**	-0.031**	-0.034**	-0.053***	-0.045
	(0.014)	(0.016)	(0.017)	(0.018)	(0.039)
elec_major	0.024	0.032	0.007	0.037	0.084
	(0.048)	(0.062)	(0.064)	(0.060)	(0.121)
pop_below_15	-0.039*	0.060	0.039	0.152	-0.089
	(0.021)	(0.092)	(0.065)	(0.122)	(0.153)
pop_over_65	-0.027	0.028	0.014	-0.030	-0.140
	(0.021)	(0.056)	(0.040)	(0.051)	(0.119)
d_2009	.				.
	.				.
output_ext_neg				0.019	

				(0.028)	
output_ext_pos				0.132***	
				(0.038)	
output_ext_ti_neg				-0.018	
				(0.020)	
output_ext_ti_pos				-0.022	
				(0.019)	
output_ext_presid_neg				0.054	
				(0.089)	
output_ext_presid_pos				0.151	
				(0.097)	
output_ext_major_neg				-0.060	
				(0.070)	
output_ext_major_pos				0.001	
				(0.087)	
Constant	1.077*	-1.523	-0.959	-2.370	3.530
	(0.597)	(2.214)	(1.601)	(2.748)	(3.760)
R^2	0.383				
Adj. R^2	0.345				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 8: Correlation between *short* fiscal drifts and shocks interacted with institutions (using the World Bank corruption index for transparency)

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1	0.055	-0.043	-0.085	-0.024	0.238
	(0.088)	(0.091)	(0.087)	(0.086)	(0.231)
output_neg	0.057*	0.059	0.063*		0.254*
	(0.031)	(0.039)	(0.038)		(0.134)
output_pos	0.046**	0.070*	0.070**		0.243**
	(0.021)	(0.037)	(0.034)		(0.122)
output_wbgi_neg	0.020	0.015	0.018		-0.137
	(0.057)	(0.056)	(0.054)		(0.122)
output_wbgi_pos	-0.034	-0.075***	-0.044**		-0.101
	(0.022)	(0.022)	(0.020)		(0.074)
output_presid_neg	-0.111	0.028	0.029		-0.764
	(0.132)	(0.158)	(0.158)		(0.798)
output_presid_pos	0.011	0.149	0.186		-0.276
	(0.099)	(0.132)	(0.128)		(0.452)
output_major_neg	0.146	0.127	0.146*		0.656*
	(0.087)	(0.094)	(0.087)		(0.352)
output_major_pos	0.070	0.038	0.043		0.466**
	(0.056)	(0.049)	(0.053)		(0.235)
elec	0.175***	0.193***	0.217***	0.195***	0.271**
	(0.048)	(0.056)	(0.055)	(0.052)	(0.109)
elec_presid	-0.336***	-0.353**	-0.295**	-0.368***	-0.471*
	(0.108)	(0.157)	(0.143)	(0.109)	(0.285)
elec_wbgi_cce	-0.096*	-0.108	-0.072	-0.160***	-0.301*
	(0.054)	(0.077)	(0.067)	(0.058)	(0.167)
elec_major	-0.198**	-0.200*	-0.241**	-0.206**	-0.126
	(0.096)	(0.106)	(0.105)	(0.091)	(0.200)
pop_below_15	-0.053	0.187*	0.168	0.313**	-0.064
	(0.045)	(0.099)	(0.103)	(0.124)	(0.253)
pop_over_65	-0.081	-0.078	-0.072	-0.163**	-0.212
	(0.056)	(0.073)	(0.072)	(0.077)	(0.188)
d_2009	.				.
	.				.
output_ext_neg				0.044	

				(0.046)	
output_ext_pos				0.143***	
				(0.040)	
output_ext_wbgi_neg				-0.114	
				(0.081)	
output_ext_wbgi_pos				-0.107***	
				(0.037)	
output_ext_presid_neg				-0.020	
				(0.142)	
output_ext_presid_pos				0.212**	
				(0.098)	
output_ext_major_neg				-0.056	
				(0.108)	
output_ext_major_pos				-0.011	
				(0.081)	
Constant	2.218	-2.138	-1.901	-3.214	3.895
	(1.493)	(2.277)	(2.469)	(3.032)	(5.874)
R^2	0.150				
Adj. R^2	0.099				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 9: Correlation between *long* fiscal drifts and shocks interacted with institutions (using the World Bank corruption index for transparency)

	(1)	(2)	(3)	(4)	(5)
L.cons_fiscal_drift1	0.540***	0.500***	0.492***	0.527***	0.250
	(0.060)	(0.091)	(0.080)	(0.086)	(0.197)
output_neg	0.012	0.027	0.018		0.093
	(0.013)	(0.021)	(0.019)		(0.083)
output_pos	0.059***	0.068**	0.075***		0.134**
	(0.016)	(0.027)	(0.024)		(0.066)
output_wbgi_neg	-0.008	-0.025	-0.010		-0.020
	(0.020)	(0.020)	(0.021)		(0.072)
output_wbgi_pos	-0.057***	-0.020	-0.061**		-0.066
	(0.019)	(0.028)	(0.024)		(0.043)
output_presid_neg	0.012	0.110	0.092		0.028
	(0.055)	(0.098)	(0.086)		(0.463)
output_presid_pos	0.024	0.193	0.132		0.082
	(0.092)	(0.130)	(0.112)		(0.265)
output_major_neg	-0.001	-0.008	-0.010		0.382
	(0.038)	(0.047)	(0.046)		(0.239)
output_major_pos	0.039	0.051	0.011		0.282*
	(0.047)	(0.042)	(0.048)		(0.152)
elec	0.071**	0.096***	0.102***	0.101***	0.053
	(0.031)	(0.035)	(0.037)	(0.032)	(0.061)
elec_presid	-0.362***	-0.387***	-0.408***	-0.425***	-0.339*
	(0.050)	(0.058)	(0.066)	(0.070)	(0.181)
elec_wbgi_cce	-0.072**	-0.078**	-0.082**	-0.146***	-0.123
	(0.035)	(0.037)	(0.041)	(0.042)	(0.102)
elec_major	0.021	0.028	0.004	0.026	0.074
	(0.049)	(0.062)	(0.065)	(0.058)	(0.119)
pop_below_15	-0.038*	0.062	0.040	0.157	-0.096
	(0.021)	(0.092)	(0.066)	(0.121)	(0.153)
pop_over_65	-0.025	0.029	0.017	-0.034	-0.138
	(0.022)	(0.056)	(0.041)	(0.050)	(0.119)
d_2009	.				.
	.				.
output_ext_neg				0.023	

				(0.028)	
output_ext_pos				0.137***	
				(0.037)	
output_ext_wbgi_neg				-0.058	
				(0.049)	
output_ext_wbgi_pos				-0.066	
				(0.045)	
output_ext_presid_neg				0.050	
				(0.085)	
output_ext_presid_pos				0.147	
				(0.096)	
output_ext_major_neg				-0.065	
				(0.071)	
output_ext_major_pos				-0.003	
				(0.087)	
Constant	1.037*	-1.561	-1.004	-2.412	3.629
	(0.609)	(2.214)	(1.621)	(2.717)	(3.756)
R^2	0.380				
Adj. R^2	0.342				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 10: Correlation between *short* fiscal drifts and shocks interacted with institutions (using the Freedom of Press index as a proxy for transparency)

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1	0.061	-0.055	-0.086	-0.026	0.290
	(0.087)	(0.091)	(0.087)	(0.087)	(0.230)
output_neg	0.053*	0.054	0.059		0.281**
	(0.031)	(0.038)	(0.038)		(0.135)
output_pos	0.045**	0.060	0.067*		0.240**
	(0.022)	(0.037)	(0.035)		(0.114)
output_press_neg	-0.000	-0.002	0.000		-0.012
	(0.007)	(0.007)	(0.006)		(0.019)
output_press_pos	-0.003	-0.006**	-0.003		-0.009
	(0.003)	(0.002)	(0.003)		(0.008)
output_presid_neg	-0.113	0.025	0.024		-0.365
	(0.120)	(0.136)	(0.139)		(0.666)
output_presid_pos	0.014	0.148	0.189		-0.109
	(0.104)	(0.135)	(0.135)		(0.403)
output_major_neg	0.157*	0.154	0.163*		0.590
	(0.092)	(0.098)	(0.094)		(0.381)
output_major_pos	0.060	0.026	0.035		0.394
	(0.058)	(0.051)	(0.056)		(0.243)
elec	0.169***	0.181***	0.210***	0.191***	0.243**
	(0.049)	(0.059)	(0.057)	(0.051)	(0.100)
elec_presid	-0.293***	-0.271**	-0.248**	-0.286***	-0.380
	(0.087)	(0.127)	(0.122)	(0.101)	(0.265)
elec_press	-0.007	-0.006	-0.004	-0.015***	-0.025
	(0.004)	(0.006)	(0.005)	(0.004)	(0.017)
elec_major	-0.233**	-0.236**	-0.262**	-0.278***	-0.261
	(0.093)	(0.118)	(0.112)	(0.089)	(0.199)
pop_below_15	-0.050	0.190*	0.170	0.326***	-0.076
	(0.046)	(0.101)	(0.106)	(0.123)	(0.242)
pop_over_65	-0.082	-0.072	-0.071	-0.166**	-0.204
	(0.057)	(0.077)	(0.075)	(0.075)	(0.185)
d_2009	.				.
	.				.
output_ext_neg				0.048	

				(0.046)	
output_ext_pos				0.146***	
				(0.038)	
output_ext_press_neg				-0.011	
				(0.008)	
output_ext_press_pos				-0.012***	
				(0.004)	
output_ext_presid_neg				0.065	
				(0.116)	
output_ext_presid_pos				0.272***	
				(0.091)	
output_ext_major_neg				-0.096	
				(0.093)	
output_ext_major_pos				-0.057	
				(0.080)	
Constant	2.170	-2.270	-1.947	-3.400	3.992
	(1.507)	(2.386)	(2.564)	(2.972)	(5.732)
R^2	0.149				
Adj. R^2	0.098				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 11: Correlation between *long* fiscal drifts and shocks interacted with institutions (using Freedom of Press index as a proxy for transparency)

	(1)	(2)	(3)	(4)	(5)
L.cons_fiscal_drift1	0.542***	0.500***	0.490***	0.516***	0.273
	(0.059)	(0.092)	(0.080)	(0.086)	(0.206)
output_neg	0.010	0.028	0.017		0.127
	(0.013)	(0.020)	(0.018)		(0.093)
output_pos	0.057***	0.066**	0.072***		0.177**
	(0.016)	(0.028)	(0.024)		(0.072)
output_press_neg	-0.006	-0.004	-0.005		-0.008
	(0.004)	(0.005)	(0.005)		(0.012)
output_press_pos	-0.005**	-0.001	-0.005		-0.008
	(0.002)	(0.003)	(0.003)		(0.005)
output_presid_neg	0.012	0.129	0.098		-0.037
	(0.056)	(0.097)	(0.085)		(0.420)
output_presid_pos	0.033	0.217*	0.145		0.063
	(0.100)	(0.129)	(0.124)		(0.252)
output_major_neg	-0.004	-0.020	-0.012		0.415
	(0.037)	(0.046)	(0.044)		(0.274)
output_major_pos	0.023	0.048	-0.003		0.274
	(0.047)	(0.045)	(0.050)		(0.167)
elec	0.064*	0.094***	0.095**	0.106***	0.063
	(0.033)	(0.035)	(0.040)	(0.032)	(0.062)
elec_presid	-0.324***	-0.352***	-0.359***	-0.369***	-0.271
	(0.048)	(0.055)	(0.059)	(0.060)	(0.179)
elec_press	-0.005*	-0.005**	-0.005*	-0.014***	-0.012
	(0.002)	(0.003)	(0.003)	(0.003)	(0.011)
elec_major	-0.001	0.002	-0.019	-0.046	-0.009
	(0.054)	(0.062)	(0.070)	(0.058)	(0.127)
pop_below_15	-0.034	0.061	0.043	0.178	-0.043
	(0.022)	(0.090)	(0.070)	(0.121)	(0.160)
pop_over_65	-0.025	0.031	0.019	-0.029	-0.175
	(0.022)	(0.056)	(0.045)	(0.052)	(0.126)
d_2009	.				.
	.				.
output_ext_neg				0.033	

				(0.026)	
output_ext_pos				0.143***	
				(0.035)	
output_ext_press_neg				-0.009*	
				(0.005)	
output_ext_press_pos				-0.009**	
				(0.004)	
output_ext_presid_neg				0.078	
				(0.080)	
output_ext_presid_pos				0.173*	
				(0.095)	
output_ext_major_neg				-0.095	
				(0.079)	
output_ext_major_pos				-0.035	
				(0.090)	
Constant	0.963	-1.583	-1.085	-2.868	3.183
	(0.618)	(2.172)	(1.759)	(2.725)	(3.931)
R^2	0.371				
Adj. R^2	0.333				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 12: Correlation between *short* fiscal drifts and shocks (considering output gaps of +/- 1% and over)

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1	0.099	0.111*	0.059	0.110	0.004
	(0.058)	(0.059)	(0.055)	(0.068)	(0.276)
output_neg	0.027	0.031	0.031*		0.086
	(0.018)	(0.019)	(0.018)		(0.063)
output_pos	0.030*	0.039**	0.032**		0.044
	(0.015)	(0.016)	(0.014)		(0.038)
elec	0.104**	0.088**	0.098**	0.095**	0.119***
	(0.046)	(0.041)	(0.042)	(0.043)	(0.042)
pop_below_15	-0.039	-0.047	-0.044	-0.030	-0.025
	(0.032)	(0.036)	(0.033)	(0.041)	(0.037)
pop_over_65	-0.045	-0.055	-0.056	-0.054	-0.049
	(0.043)	(0.048)	(0.050)	(0.047)	(0.038)
d_2009	0.538***	0.526***	0.533***	0.519***	0.437***
	(0.099)	(0.103)	(0.103)	(0.132)	(0.151)
output_ext_neg				0.026	
				(0.037)	
output_ext_pos				0.021	
				(0.026)	
Constant	1.464	1.735	1.721	1.438	1.227
	(1.144)	(1.279)	(1.252)	(1.323)	(1.116)
R^2	0.173				
Adj. R^2	0.158				
Obs.	387	375	375	354	362

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.

(1) OLS with country fixed effects.

(2) Arellano-Bond method;

(3) Arellano-Bond method where the output gap is instrumented its by lagged values;

(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.

(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 13: Correlation between *long* fiscal drifts and shocks (considering output gaps of +/- 1% and over)

	(1)	(2)	(3)	(4)	(5)
L.cons_fiscal_drift1	0.589***	0.552***	0.517***	0.601***	0.291**
	(0.032)	(0.042)	(0.041)	(0.032)	(0.113)
output_neg	-0.003	0.003	0.002		0.027
	(0.008)	(0.011)	(0.010)		(0.038)
output_pos	0.038***	0.031**	0.037***		0.077***
	(0.012)	(0.014)	(0.013)		(0.028)
elec	0.003	0.011	0.005	0.008	0.019
	(0.034)	(0.036)	(0.033)	(0.037)	(0.031)
pop_below_15	-0.032	-0.069***	-0.030	-0.069***	-0.017
	(0.019)	(0.021)	(0.025)	(0.022)	(0.025)
pop_over_65	-0.023	-0.058***	-0.042*	-0.045***	-0.044*
	(0.021)	(0.016)	(0.025)	(0.016)	(0.026)
d_2009	0.120***	-0.002	0.094**	0.105	0.195*
	(0.040)	(0.052)	(0.044)	(0.066)	(0.104)
output_ext_neg				-0.044**	
				(0.018)	
output_ext_pos				0.026	
				(0.025)	
Constant	0.936	2.134***	1.180	1.976***	0.950
	(0.622)	(0.576)	(0.775)	(0.572)	(0.747)
R^2	0.351				
Adj. R^2	0.339				
Obs.	387	375	375	354	362

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.

(1) OLS with country fixed effects.

(2) Arellano-Bond method;

(3) Arellano-Bond method where the output gap is instrumented its by lagged values;

(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.

(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 14: Correlation between *short* fiscal drifts and shocks (considering output gaps of +/- 1% and over) interacted with institutions (using the Transparency International index for transparency)

	(1)	(2)	(3)	(4)	(5)
L.fiscal_drift1	0.061	-0.026	-0.073	-0.048	0.218
	(0.086)	(0.090)	(0.086)	(0.087)	(0.216)
output_neg	0.048*	0.045	0.047		0.184
	(0.027)	(0.037)	(0.035)		(0.114)
output_pos	0.044**	0.062*	0.063*		0.172**
	(0.019)	(0.035)	(0.033)		(0.086)
output_ti_neg	0.009	0.007	0.008		-0.055
	(0.019)	(0.021)	(0.020)		(0.044)
output_ti_pos	-0.016*	-0.031***	-0.020**		-0.041*
	(0.008)	(0.009)	(0.008)		(0.025)
output_presid_neg	-0.091	0.002	0.012		-0.740
	(0.118)	(0.165)	(0.166)		(0.529)
output_presid_pos	0.005	0.103	0.144		-0.248
	(0.089)	(0.134)	(0.130)		(0.268)
output_major_neg	0.129*	0.101	0.123		0.563*
	(0.073)	(0.097)	(0.088)		(0.323)
output_major_pos	0.066	0.039	0.037		0.391*
	(0.045)	(0.049)	(0.051)		(0.200)
elec	0.170***	0.192***	0.215***	0.188***	0.239**
	(0.047)	(0.056)	(0.056)	(0.050)	(0.096)
elec_presid	-0.323***	-0.345**	-0.279*	-0.312***	-0.427*
	(0.115)	(0.170)	(0.158)	(0.102)	(0.246)
elec_ti_cpi	-0.042*	-0.049	-0.033	-0.058**	-0.128**
	(0.022)	(0.032)	(0.029)	(0.023)	(0.060)
elec_major	-0.209**	-0.203*	-0.246**	-0.194**	-0.129
	(0.099)	(0.109)	(0.110)	(0.090)	(0.202)
pop_below_15	-0.053	0.166*	0.155	0.302**	-0.194
	(0.045)	(0.100)	(0.104)	(0.126)	(0.214)
pop_over_65	-0.086	-0.093	-0.084	-0.148*	-0.255
	(0.057)	(0.072)	(0.072)	(0.078)	(0.184)

d_2009	.				.
	.				.
output_ext_neg				-0.004	
				(0.040)	
output_ext_pos				0.099***	
				(0.031)	
output_ext_ti_neg				-0.031	
				(0.030)	
output_ext_ti_pos				-0.029**	
				(0.014)	
output_ext_presid_neg				-0.072	
				(0.131)	
output_ext_presid_pos				0.188**	
				(0.089)	
output_ext_major_neg				-0.038	
				(0.099)	
output_ext_major_pos				-0.001	
				(0.067)	
Constant	2.293	-1.522	-1.458	-3.141	6.977
	(1.481)	(2.222)	(2.436)	(3.090)	(5.480)
R^2	0.157				
Adj. R^2	0.106				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .

Table 15: Correlation between *long* fiscal drifts and shocks (considering output gaps of +/- 1% and over) interacted with institutions (Using the Transparency International index for transparency)

	(1)	(2)	(3)	(4)	(5)
L.cons_fiscal_drift1	0.538***	0.509***	0.496***	0.513***	0.322
	(0.058)	(0.087)	(0.077)	(0.086)	(0.197)
output_neg	0.008	0.019	0.014		0.063
	(0.011)	(0.018)	(0.018)		(0.076)
output_pos	0.059***	0.064***	0.073***		0.107**
	(0.014)	(0.024)	(0.022)		(0.050)
output_ti_neg	0.000	-0.005	0.000		-0.012
	(0.007)	(0.007)	(0.008)		(0.027)
output_ti_pos	-0.023***	-0.010	-0.024***		-0.028*
	(0.006)	(0.009)	(0.008)		(0.015)
output_presid_neg	0.034	0.112	0.101		-0.071
	(0.051)	(0.100)	(0.097)		(0.321)
output_presid_pos	0.021	0.148	0.113		0.005
	(0.086)	(0.126)	(0.109)		(0.166)
output_major_neg	-0.009	-0.010	-0.008		0.328
	(0.028)	(0.040)	(0.042)		(0.233)
output_major_pos	0.042	0.051	0.019		0.254*
	(0.039)	(0.037)	(0.042)		(0.138)
elec	0.069**	0.093***	0.101***	0.091***	0.054
	(0.030)	(0.035)	(0.036)	(0.033)	(0.057)
elec_presid	-0.356***	-0.373***	-0.398***	-0.374***	-0.306*
	(0.048)	(0.063)	(0.069)	(0.092)	(0.166)
elec_ti_cpi	-0.029**	-0.032**	-0.034*	-0.050***	-0.059
	(0.014)	(0.016)	(0.017)	(0.019)	(0.038)
elec_major	0.024	0.036	0.012	0.040	0.075
	(0.048)	(0.065)	(0.066)	(0.060)	(0.124)
pop_below_15	-0.041*	0.039	0.030	0.126	-0.172
	(0.021)	(0.090)	(0.065)	(0.123)	(0.138)
pop_over_65	-0.028	0.019	0.016	-0.014	-0.172
	(0.024)	(0.053)	(0.040)	(0.050)	(0.121)
d_2009	.				.

output_ext_neg				-0.026	
				(0.021)	
output_ext_pos				0.084***	
				(0.028)	
output_ext_ti_neg				-0.012	
				(0.015)	
output_ext_ti_pos				-0.012	
				(0.015)	
output_ext_presid_neg				0.013	
				(0.083)	
output_ext_presid_pos				0.132*	
				(0.078)	
output_ext_major_neg				-0.062	
				(0.047)	
output_ext_major_pos				0.012	
				(0.068)	
Constant	1.135*	-1.002	-0.803	-2.055	5.504
	(0.618)	(2.156)	(1.570)	(2.759)	(3.662)
R^2	0.391				
Adj. R^2	0.354				
Obs.	264	164	164	164	136

Note : * p<0.10, ** p<0.05, *** p<0.01. Robust standard errors in parenthesis. Period 1995-2009.
(1) OLS with country fixed effects.
(2) Arellano-Bond method;
(3) Arellano-Bond method where the output gap is instrumented its by lagged values;
(4) Arellano-Bond method where the average output gap all OECD countries but country *i* is substituted for the output gap of country *i*.
(5) Arellano-Bond method where the output gap of country *i* is instrumented by the average output gap all OECD countries but country *i* .