Fiscal Transparency, Elections and Public Employment: Evidence from the OECD

Abstract

There is considerable variation in levels and changes in public employment within and between developed democracies. This article highlights the importance of fiscal transparency in determining changes in public employment. It argues that economic growth increases public employment under low fiscal transparency and that this effect is strongest in years of election. These hypotheses are tested on a panel of 20 OECD-countries from 1995 to 2010. The analyses show substantial evidence in favor of the arguments. Fiscal transparency lowers the positive effect of growth on public employment, a relationship, which is most robust in election years.

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1. Introduction

One of the most striking differences among modern wealthy democracies' public sectors is the difference in the level and the nature of their employment. In 2010 public employment equaled about 11 percent of total employment in Austria while standing at about 33 percent of total employment in Denmark. Not only levels but also changes in public employment vary dramatically among countries of the OECD. From 2001 to 2008 according to data from the International Labour Organization public employment rose by almost 20 percent in Ireland while almost stagnating with an about 1 percent increase in Sweden. In the same period public employment fell by almost 6 percent in Germany. Rapid expansion of public employment might have been one of the causes of the unsustainability of public finances in many developed countries during the 2000s, which became even more evident after the financial crisis of 2008.

Consequently in many OECD-countries cuts and/or freezes in public employment have become part of fiscal consolidations strategies after growing public debt and deficits in the aftermath of the 2008 financial crisis. However even here substantial variation in the use of public employment downsizing as a consolidation tool could be observed between countries (Bach and Stroleny, 2013). As many of the countries with the largest increases in public employment before the financial crisis also had to undertake the most dramatic fiscal consolidations, inability to control growth of the public workforce before the crisis, which then had to be downsized after the crisis, were probably one of the important reasons for the procyclical fiscal policies of these countries before and after the crisis. In accordance with this view Lane (2003) finds evidence that government wage consumption was the single most important channel for procyclical fiscal policies among OECD-countries in the years 1960–1998.

Several both economic and political explanations have been given to explain public employment levels and growth in public employment, ranging from differences in productivity growth in the public and private sector (Baumol, 1967) and the increased demand for public goods and services when per capita income rises, the phenomenon known as *Wagner's Law* (Tanzi and Schuknecht, 2000, p. 15). Others stress the use of public employment as a redistribution tool (Alesina et al., 2000; Alesina et al. 2001; Clark and Milcent, 2011) or as insurance against external shocks and unemployment (Rodrik, 2000; Murrell, 1985). However these explanations, even though they provide at least some explanations for public employment variation, probably cannot account for the vast differences in levels of public employment among countries, especially among the relatively wealthy democracies of the OECD. Furthermore they usually do not explain why changes in public employment within countries differ even among developed economies with the same initial level of public employment.

This article stresses the importance of fiscal institutions and electoral concerns for the effect of economic growth on changes in public employment. It thus integrates the literature on political-economy explanations for changes in public employment with the new and growing literature on the effects of fiscal institutions and the literature on conditional political budget cycles. This article argues that increasing economic growth rates tend to increase public employment as increasing public employment yields relatively more benefit for an incumbent government than other types of public expenditure. Electoral concerns make this effect stronger in years of elections. However fiscal transparency decreases this effect, and expansions of public employment due to growth rate increases happen mainly under less transparent fiscal arrangements. The proposed mechanism is that citizens are better able to observe the opportunity costs of large increases in public employment under more transparent budget regimes. Furthermore more transparent budget institutions and

procedures prevent incumbent governments from treating revenue windfall due to business cycles fluctuations as permanent revenue and thus have a decreasing effect of the translation of revenue windfall into large and often temporary increases in public employment.

This argument is tested on a panel of 20 OECD-countries in the years 1995-2010. The results show strong evidence in favor of the argument that higher growth rates tend to increase public employment but that this effect diminishes and disappears at higher level of fiscal transparency. Increased growth under high levels of fiscal transparency is associated with a relatively lower share of public employment to total employment, presumably due to an association between growth increases and higher general employment. The effect is strongest and most statistically robust in years of elections, indicating that electoral concerns might be a key mechanism for the observed phenomenon, and the results robustly show the existence of an electoral cycle in public employment among OECD-countries contingent on growth rates and the level of fiscal openness.

The outline of the article is as follows. Section 2 outlines the theoretical argument for how and why economic growth, fiscal transparency and electoral concerns jointly affect public employment and sets up the central hypotheses. Section 3 describes the data and estimation method used to test the hypotheses. Section 4 shows the results from the empirical tests and various robustness tests of the empirical findings. Section 5 concludes and discusses the implication of the findings as well as venues for future research.

2. Theoretical argument

The main argument of this article is that an incumbent government will increase public employment under increased economic growth and that this effect is contingent on the level of fiscal transparency as well as electoral concerns. It is important to specify that this proposed theoretical relationship concerns short term effects on public employment. For medium/longer term theoretical accounts of the relationship between political-economy factors, public employment and economic growth see Gelb et al. (1991) and Robinson and Verdier (2013).

The key concept in the theoretical argument of this article is fiscal transparency. Fiscal transparency should be understood as openness and availability of understandable, correct and comparable information about public finances and coherent public auditing and forecasting (Kopits and Craig, 1998, p. 1). Earlier literature on fiscal transparency has found fiscal transparency to matter for various fiscal outcomes (Alt and Lassen, 2006a; Alt and Lassen, 2006b; Glennerster and Shin, 2008; Alt et al., 2014; Arbatli and Escalano, 2012) and this article builds on this literature. However it expands this research agenda into the area of public employment. No previous research has been done on how and whether fiscal transparency should affect the level and change in public employment. Although early proponents of increased fiscal transparency stress the link between fiscal transparency and better and more transparent government employment procedures (Kopits and Craig, 1998, p. 18).

The most important assumption behind the argument, that fiscal transparency conditions the effect of economic growth on public employment, is that an incumbent government place a relatively higher value on public employment vis-à-vis other types of public expenditures than voters, as it

yields relatively higher benefits for the incumbent. The incumbent government would thus prefer to spend a higher share of increased public revenue on public employment rather than transfers and tax cuts. The benefits for a government in spending resources on public employment as opposed to other types of public expenditures and tax cuts are threefold. First it enables at least perceivable the government to "buy" direct electoral support among voters by providing employment in the public sector[1] and by increasing public service provision. While tax cuts and public transfers can also be used by the government to buy support among voters, they are generally assumed to be less targetable and controlled directly by the government, and they should consequently be less preferred. Public jobs and the services associated with them have the benefits of being targetable both across social groups and geographical units, which makes them a very flexible instrument for an incumbent government to distribute benefits to both core and swing voter groups (Cox, 2009). Secondly public employees are part of a bureaucracy or public service provision agencies at least partly controlled by the government[2], so it enables the government and its ministers to direct increased public services according to favorite ideological and/or personal preferences and to gain direct personal assistance from an increased number of public employees[3]. Thirdly in- or decreasing public employment is assumed to be significantly more under the immediate discretion of an

[1] Providing public jobs to supporters or trying to gain supporter through public employment has the benefit for a politician of providing selective benefit for supporters and tie the supporters' welfare more closely to the electoral success of the politician, why public employment is often preferred in clientelistic relationships. For a formalization of this argument see Robinson and Verdier (2013).

[2] Of course a majority of public service provision is largely decentralized in many countries but in most cases the central government can still influence local government employment through intergovernmental grants and/or less strict enforcement of centrally set fiscal targets and limits.

[3] In the case of government ministers increased employment at the ministerial level enables the individual minister to gain a larger personal staff.

incumbent government than tax cuts and transfers programs, since it does not normally involve changes to laws and formal regulations as might be case of most increases in transfer programs and tax cuts[4].

Positive fiscal windfalls from economic growth resulting from increased productivity or a positive fluctuation of the business cycle increase public revenue and enable the incumbent government at least temporary to spend more on public transfers, public employment or lower the tax payments of the voters. Since the incumbent government places a higher value on public employment relative to tax cuts and public transfers, the incumbent government will prefer to spend a relatively large fraction of the increased revenue on public employment. Increasing public employment however means opportunity costs in the form of relatively lower (increased) spending on tax cuts and public transfers, which are also valued by voters and presumably at a higher rate than increased levels of public employment, since voters can choose which additional goods and services, they will consume with increased transfers and decreased tax payments, which is not the case of increased public services. Voters would then prefer that a higher fraction of government revenue windfalls are spent on increased transfers and tax cuts rather than on increased public employment. So in this case, if the potential for revenue windfalls from economic growth is not used to expand public employment, higher growth rates could even be associated relatively lower levels of public employment to total employment, as higher GDP growth rates are potentially correlated with increased employment and labor force participation in the non-government part of the economy at

[4] The extent to which incumbent governments formally appoint especially senior civil servants varies significantly among OECD-countries (OECD, 2011, chapter 18), but in all countries it is reasonable to assume that government ministers can control at least part of the level of central government's level of staffing and other personnel policies.

least in the short run[5]. These mechanisms would cause general employment to rise but not government employment per se.

Fiscal transparency affects whether the government can spend revenue windfalls according to own preferences or has to use the windfall more according to voter's preferences and thus the relationship between economic growth rates and public employment. The mechanism is that fiscal transparency affects voter's information about public spending and consequently the level of information asymmetry between voters and the incumbent government. Fiscal transparency enables voters to better observe the opportunity costs of increased public employment, since it provides overall budgetary information about spending level and categories. These are either absent or of low quality under low levels of fiscal transparency. In contrast the direct benefits of further public employment are always observed for both the voters who are publicly employed and the voters receiving public services. The potential adverse electoral effects for the incumbent government of spending according to its own preferences rather than the voters' preferences are thus minimal under low levels of fiscal transparency, while the potential positive electoral effects of increased public employment are still present. Consequently low levels of fiscal transparency enables the incumbent government to spend the revenue windfalls more in accordance with its own preferences than voters' preferences, since voters are less aware of the overall composition of public spending. The incumbent government would then under low levels of fiscal transparency use a larger fraction of revenue windfalls on increasing public employment than under higher levels of fiscal transparency. This logic is in line with formal models of political budget cycle occurrence, where an

[5] This type of correlation underscores the well-known macroeconomic theory *Okun's Law* on the relationship between unemployment and GDP growth (Prachowny, 1993; Lee, 2000).

incumbent government should have a higher preference for more visible policy instruments (Katsimi and Sarantides, 2012), and where the availability of information to voters determines the magnitude of government fiscal manipulation (Shi and Svensson, 2006). In this respect increased fiscal transparency can be seen as limiting a form of *fiscal illusion*[6] of voters in the composition of public spending, which speak to a larger argument about the role of transparency in limiting the extent of fiscal illusion (Afonso, 2014, pp. 221-222). Furthermore lower fiscal transparency through for an example non-existent, biased or imprecise forecast of public sector balance and general finances would also enable the incumbent government to treat temporary windfalls in public revenue due to business cycles fluctuations as permanent revenue and increase public employment accordingly.

An incumbent government would according to these arguments prefer to spend a larger proportion of a windfall in public revenue from economic growth increases on public employment as opposed to transfers and tax cuts. However the extent to which the incumbent government is able to do so is a function of fiscal transparency. Whether increases in growth rates spill over into increased levels of public employment, or whether the general non-public employment effect of increased growth rates dominates, which could even lower relative public employment levels, depends on the level of fiscal transparency. From this argument I derive the article's hypothesis 1

H1: *Economic growth increases the level of public employment, with the effect decreasing as fiscal transparency increases.*

[6] The large literature on fiscal illusion deals with how voters systematically underestimate the costs of government activities through both the spending and the revenue channel. See Buchanan (1967, pp. 126-143) for a seminal discussion of the phenomenon.

However the timing of the above phenomenon also matters. As one of the main assumed motivations for an incumbent government to increase public employment is to gain electoral support through both hiring public employees in hope of direct electoral support and the ability to provide additional public services to voters, the government should have a higher preference for public employment, when they need electoral support the most. In line with previous theoretical and empirical arguments from the political budget cycles literature (Rogoff, 1990; Franzese, 2002), the fiscal transparency-contingent effect of growth rates on public employment should be larger in election years. This argument forms the basis of the article's hypothesis 2:

H2*: The fiscal transparency-contingent effect of economic growth on public employment is larger in election years.*

We should according to this argument expect an electoral cycle in public employment[7] contingent on fiscal transparency and growth rates. The above arguments share some similarity with the previous literature on contingent political budget cycles, where fiscal transparency has been found to decrease the size of political budget cycles (Alt and Lassen, 2006b; Alt and Rose, 2007). However it expands this argument by also looking at financing opportunities for these cycles, in this case increased growth rates, and looks specifically at public employment as the key policy instrument, where comparative studies have been lacking.

[7] At a subnational level electoral cycles in public employment have been detected in Sweden and Finland (Dahlberg and Mörk, 2011), Germany (Tepe and Vanhuyesse, 2009), Italy (Stolfi and Hallerberg, 2015) and in various developing countries (Dubois, 2016, p. 242). However according to the knowledge of the author, there is no comparative studies of electoral cycles in public employment other than Katsimi (1998), who studies the determinants of public employment level in OECD-countries in the years 1967-1985.

The above arguments are based on the assumption that the government's incentive and preference for relative higher levels of public employment is independent of the ideology of the incumbent government. This might raise a concern, especially since public employees are leftwing core voters in many developed democracies (Tepe, 2012). I maintain that the effect of economic growth on public employment contingent on fiscal transparency and elections should hold for both rightwing and leftwing governments. However the mechanisms for the government's preference for higher levels of public employment might vary dependent on the ideology of the government and its subsequent core voters. Directly getting the support of additional public employees and public sector unions, which benefit from an increase in their potential member pool, might dominate as the incentive for leftwing parties to increase public employment. Respectively the mechanism of trying to gain the support by receivers of public services, which could be provided by additional public employees, might dominate for right-wing parties. Since rightwing parties' core supporters could often be main beneficiaries in areas such as healthcare and education. For a discussion of this phenomenon in healthcare see Jensen (2011, 912-914). Vice versa the opportunity costs of increased levels for public employment might differ for core supporters between different parties with public transfers being more important for leftwing government core supporter while increased spending on vouchers and tax reductions might be preferred for core rightwing voters. Fiscal transparency should however affect voter information in all these areas, so the general arguments of this article should still be valid. I do however control for the ideology of the government in the later empirical tests of the theoretical arguments.

3. Data and estimation

To test the hypotheses I use an unbalanced panel dataset with data for 20 OECD-countries in the years 1995-2010[8], where regular yearly data on public employment is available. As the dependent variable I use public employment as a share of total labor force. Using share of public employment rather than a measure based on total number of public employees makes country comparisons easier, as country size has less influence with this measure. Furthermore share of public employment to total employment gives an indication of, how much public employment is prioritized by policymakers given total number of available workers. Total labor force data is from OECD, whereas data on public employment is from the International Labour Organization's (ILO) LABORSTA-database. The database's data coverage ends in 2010, so this year is the natural end year for the panel. Where possible I count employees of publically owned enterprises as public employees, since an incumbent government is assumed to be able to influence at least part of the personnel decisions in publically owned enterprises and since it is very plausible that this ability should be even greater under low levels of fiscal transparency[9]. However for some countries including Austria only general government employees are available from the LABORSTA-database. As the main statistical estimation model uses country-fixed effects, this divergence does not constitute a major problem[10].

[8] The countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and the United States.

[9] The political economy of publically owned enterprises is part of a larger literature see Shleifer (1998) and Bennedsen (2000) for a few contributions.

[10] Removing Austria from the analysis does not change the empirical results of this article. The estimation results excluding Austria can be found in appendix 2.

The central independent variables needed to test the hypotheses are yearly GDP growth, fiscal transparency and the occurrence of an election. Data for GDP growth is from the OECD.

Fiscal transparency is the key conditioning variable of interest. However obtaining high quality data on fiscal transparency even for OECD-countries is a challenge. The NGO the International Budget Partnership publishes one of the highest quality indexes of fiscal transparency; see International Budget Partnership (2012) for a description. Unfortunately the index only has data for every second year from 2005 and onward and does exclude over half the OECD-countries with available public employment data. Hollyer et al. (2014) proposes a transparency measure based on the availability of government data. However their measure concerns government transparency in general rather than fiscal transparency.

A recent attempt to measure the level of budgetary information in a new database was done by the IMF's Fiscal Affairs Department in 2015[11] (Wang et al. 2015), with the coverage beginning in 2003. It however mainly measures the coverage (central or general government) and availability[12] of official government financial data provided to the IMF's Government Finance Statistics (GFS) Yearbooks (Wang et al. 2015, 6-9) and might not capture the budgetary information actually available and experienced by national citizens and political actors such as opposition parties through government budgets and audits, as year to year changes in scores might reflect database

[11] A previous index of fiscal transparency based on data from the IMF was done by Hameed (2005). This index does however not include all countries including many of the OECD-countries of interest for this article.

[12] This relates to six types of information: liabilities, financial assets, nonfinancial assets, the statement of sources and use of cash, the statement of government operations and the statement of other economics flows.

issues rather than substantial changes to de-facto fiscal transparency [13]. Furthermore it does not include information about the reliability and independent verification of the financial data and budget assumptions.

As the measure of fiscal transparency in OECD-countries I therefore rely on an established measure of fiscal transparency among OECD-countries and use the modified version of the Alt-Lassen index of fiscal transparency from Lassen (2010, pp. 19-20). The index is an aggregated addition of 11 measures of fiscal transparency:

- Whether non-financial performance data is routinely included in the budget documentation presented to the legislature (yes=transparent).
- Whether special reports on the fiscal outlook are released prior to an election (yes=transparent).
- Whether the government regularly produces a report on the long term outlook for public finances (yes=transparent).

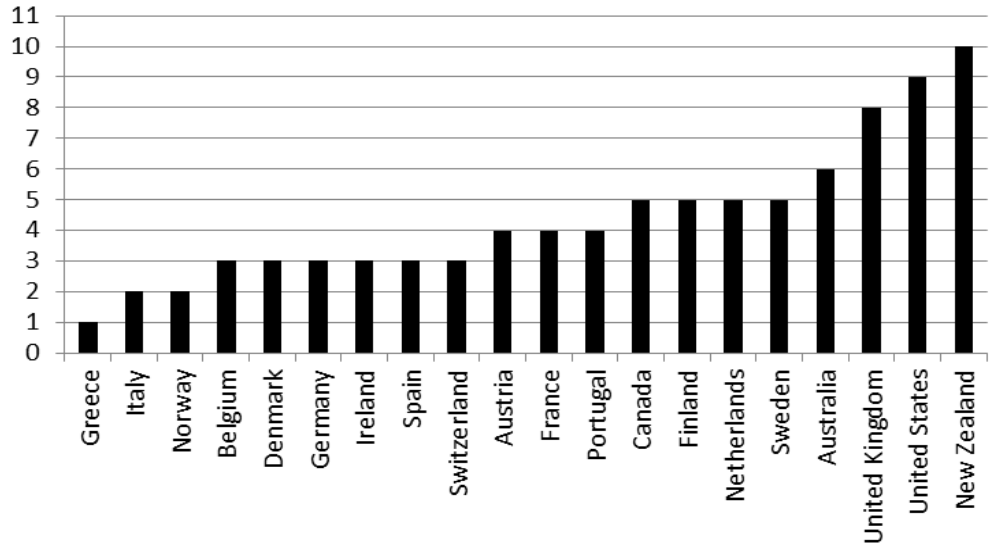
[13]Italy for an example experiences a drop from a score of 50 (out of 100) to 0.0 from 2003 to 2004 and then back to a score of 50 in 2006, which more seems to reflect database issues rather than fundamental change to the Italian budget procedure and the level of fiscal information available and experienced by the Italian public in this time period. This might not constitute a problem for average country scores over a limited time period or an evaluation of longer term trends but is a potential problem for using the index in panel data regressions, as these fluctuations on the IMF fiscal transparency score due to lack of data reporting is very unlikely to match de-facto changes in fiscal transparency within countries, especially given that research on the subject suggest that fiscal transparency generally is a slowly changing variable (Alt et al., 2014, pp. 709-710).

- Whether the government is required to report contingent liabilities on a regular basis (yes=transparent).
- Whether the government generally presents more than one supplementary budget to the legislature in each fiscal year (no=transparent).
- Whether the government is required to make regular actuarial estimates for social security programs (yes=transparent).
- Whether the economic assumptions used in the budget are subject to independent review (yes=transparent).
- Whether the government uses accrual accounting in its financial statements (yes=transparent).
- Whether there is a legal requirement that the budget documentation contain a projection of expenditure beyond the next fiscal year (yes=transparent).
- Whether it is a legal requirement that the budget include an ex post comparison between projected expenditure in future years and the actual expenditures in those years (yes=transparent).
- Whether the budget discusses the impact that variations in the key economic assumptions would have on the budget outturn (yes=transparent).

The countries' score on the index vary from 1 to 10. The index has been found to be a good predictor of fiscal policy where fiscal transparency should theoretically have an important effect (Alt and Lassen, 2006a; Alt and Lassen, 2006b). Furthermore many of the index' items such as the

existence of long term outlooks, reporting of contingent liabilities, the independence of budget assumptions reviews and the existence of budgetary projections fit one the proposed theoretical mechanisms on why fiscal transparency should affect public employment very well. These items should very plausibly have an effect on whether an incumbent government can treat temporary windfall from short term increases in growth as permanent revenue and thus use it to increase public employment. The countries' score on the modified Alt-Lassen index of fiscal transparency can be seen in figure 1.

Figure 1. The Alt-Lassen index of fiscal transparency



The fiscal transparency variable is time-invariant so in order to assess the effect of fiscal transparency on public employment in fixed-effect regressions I interact it with yearly GDP growth, which fits the theoretical prediction that fiscal transparency should affect public employment through a depressing effect on the influence of economic growth. Data used to construct the fiscal transparency index comes from a 1999 OECD-questionnaire (Lassen, 2010, pp. 17-18). The survey was unique, which is the reason for the time-invariance of the fiscal transparency index. However it is reasonable to believe that fiscal institutions and fiscal transparency generally change very little

over time (Alt et al., 2014, pp. 709-710). The time-frame of the analysis also makes this assumption more realistic since the panel ends before the many reforms to the public budgeting laws undertaken in especially European countries in the aftermath of the financial crises and the subsequent debt- and deficits crises (Reuter, 2015, pp. 67-68; Schaechter et al., 2012, p. 43). These reforms might plausible have increased the level of fiscal transparency in many countries especially through an increased role for independent fiscal councils. This is also partly reflected in the OECD Budget Practices & Procedures Survey from 2012, where significantly changes in procedures and content of the public budgets have happened among OECD-countries between the 2007 and 2012[14] survey, including on the existence of non-financial performance data (OECD, 2014, 85). These changes are thus most likely implemented in the aftermath of the financial crisis and thus after the end of the panel dataset's coverage.

So everything considered the Alt-Lassen index should be able capture general fiscal transparency in the analyzed time period. However in order to take the time-invariant status of the index into account in later robustness test I check whether the results are sensitive to the removal of specific time periods at the beginning and end of the panel' coverage to account for time-invariant fiscal transparency measure.

[14] The survey was only carried out in 2007 and 2012. Another survey was carried out in collaboration with the World Bank in 2003. The surveys however differ in their questions and are not fully comparable.

The explanatory variable of relevance for hypothesis 2 is chief executive election, which measures whether there is an election which is potential decisive for the chief executive[15]. Data for both variables is from the Database of Political Institutions (Beck et al., 2001). Scholars in comparative politics have recently pointed out issues in this database variable, which measures the number of years left in the chief executive's terms (the so-called *yrcurnt* variable), which is frequently used as an election year variable in the empirical literature (Gandrud , 2015). The chief executive election in this dataset however relies on the pure legislative election and executive election dummy from the Database of Political Institutions, which do not have the same problems of missing and incorrect election timing as the *yrcurnt* variable.

As economic control variables I employ GDP per capita in constant prices to control for the potential Wagner's Law effect (Tanzi and Schuknecht, 2000, p. 15) and unemployment rate, which has been found to influence level of public employment in earlier studies of public employment in the OECD (Murrell, 1985). Data for both these variables are from OECD. As the theoretical mechanism states that public employment should increase with GDP growth even more than other types of public expenditures, I control for general government spending as a percent of GDP. Data is from IMF's World Economic Outlook Database. As demographic controls I also control for the share of children (the share of population aged 0-14) and the share of elderly citizens (share of population aged 65+). The share of population in these two age groups might influence the demand for and consequently level of public employment given that they are the main beneficiaries of public services within education and care in most countries. Furthermore demographic structures

[15] This is coded as a legislative election for countries except France and the United States, where it is coded as a presidential election.

might influence GDP growth rates (Bloom et al., 2007, p. 569). Data for both variables comes from the World Bank's Database.

As a political control I include whether the chief executive is from a leftwing party to control for a potential independent partisan effect. Previous literature has argued for both a tendency for leftwing governments to increase public employment in general (Cusack et al., 1989), and a tendency for leftwing government to oppose the privatization of publically owned enterprises (Zohlnhöfer et al., 2008), which might also affect the level of public employment. A table with descriptive statistics for the different variables can be seen in appendix 1.

As the core estimation method I employ a country-fixed effect regression model using GDP growth rate and the interaction between the time-invariant fiscal transparency index and GDP growth rate, as well an interaction between GDP growth, fiscal transparency index and chief executive election, as the central explanatory variables. The estimation is similar to the estimation model of Alt et al. (2014, appendix 7), who study the effect of fiscal transparency on fiscal gimmickry in EU-countries. A fixed-effect panel approach is appropriate to estimate the short term effects of economic growth and fiscal transparency on public employment, which we expect from the theoretical argument in section 2. As the fiscal transparency index does not change over time, it does not appear independently in the country-fixed effects estimation but only through its interaction with GDP growth[16]. Year dummies are included to take into account general time-trends in public employment in the analyzed period. Especially the general trend towards the privatization

[16] Due to the inability to include time-constant variables in fixed-effects models (Woolridge, 2006, p. 488).

of public enterprises for most of the countries in the analyzed period (Schuster et al., 2013, p. 102) could exhibit an influence on the results, if year-effects were left out.

The regression model used to test hypothesis 1 is shown in equation 1 with countries indexed by *i* and years by *t*. Where $publicemployment_{it}$ is public employment as a share of public employees to total employment in country *i* in year *t*. G is GDP growth and T the fiscal transparency index. E is whether a chief executive election is held. X is a vector of control variables, while η_i and τ_t are the country-fixed-effects and the year dummies respectively and ϵ the error term.

$$Publicemployment_{it} = \beta_1 G_{it} + \beta_2 G_{it} T_i + \beta_3 E_{it} + \beta_4 X_{it} + \eta_i + \tau_t + \epsilon_{it} \quad (1)$$

To test hypothesis 2 two chief executive election is interacted with growth and fiscal transparency to form a three-variable interaction in equation 2. In this equation C is a vector of the consisting single variables and two-variable interactions of the three-variable interaction.

$$Publicemployment_{it} = \beta_1 G_{it} T_i E_{it} + \beta_2 C_{it} + \beta_3 X_{it} + \eta_i + \tau_t + \epsilon_{it} \quad (2)$$

With both unit- and time-fixed-effects the above equation should be able to estimate the transparency-contingent effect of GDP growth rates on public employment levels, since the analysis will be based on analyzing deviations in public employment levels from the country-mean. This regression approach to studying the determinants of differences in public employment levels is similar to Dahlberg and Mörk (2011, p. 6), who study the effects of elections on public employment levels in Sweden and Finland.

However although the fixed effects estimation should enable me to analyze deviation from the country-average levels of public employment, issues could still be raised that employment levels are partly a function of previous levels of public employment, and that the relationship should be more dynamic modeled. The inclusion of a lagged dependent variable could be a potential solution to these issues. However the structure of the dataset with a relative limited total number of time periods and its unbalanced nature means that the number of time periods for some countries is fairly low[17]. So the risk of Nickell bias by implementing a lagged dependent variable together with unit-fixed effects would increase substantially (Nickell, 1981) given that the number of time periods in the panel is relatively low compared to the number of time periods, which minimizes the Nickell bias (Beck et al. 2014, 275)[18].

To overcome this problem in some of the later specifications I use a number of generalized method of moments' (GMM) estimations[19] as a supplements and extensions to the fixed effect estimations. This enables me to control for the level of public employment in the previous year. The next section presents and discusses the results from the estimations.

[17] This is mainly due to availability of public employment data.

[18] The methodological implications of the issue of Nickell bias is generally a large topic for scholars working with panel data, which forms an ongoing debate, see also Gaibulloev et al. (2014).

[19] This is done using the xtbond2 command in Stata (Roodman, 2009).

4. Results

4.1. Core results

Table 1 presents the core results from the fixed-effect regressions. In column one hypothesis 1 is tested and the non-election-contingent joint effect of fiscal transparency and economic growth is tested. The results show strong evidence in favor of the argument behind hypothesis 1. While GDP growth has a positive and statistical significant effect on level of public employment, the interaction between GDP growth and fiscal transparency has a negative and strongly statistical significant effect on public employment. The effect of growth on the level of public employment becomes weaker as fiscal transparency increases and the effect even turns negative at medium levels of fiscal transparency. The results show evidence in favor of hypothesis 1. Only when fiscal transparency is low are the potential revenue windfalls from increases in growth rates used to expand public employment. At high levels of fiscal transparency the positive association between GDP growth and general employment levels seems to dominate, so public employment is relatively lower in times of economic booms, presumable because of an increase in general employment and no similar increase in public employment. The election dummy has no independent statistical significant effect on levels of public employment, which is unsurprisingly given that electoral budget cycles are generally found to be conditional among developed democracies (Klomp and De Haan, 2013; Alt and Lassen, 2006b). Of the control variables, while both GDP per capita and the demographic variables have the expected sign, only general government expenditure and unemployment are statistical significantly associated with government employment levels. While general government expenditure unsurprisingly has a positive association with government employment, unemployment seems to be negatively associated with public employment levels in contrast with earlier empirical findings (Murrell, 1985). Leftwing chief executive does not seem to have any statistical significant

effect on level of public employment either. This is again more in accordance with this article's theoretical explanation that an incumbent government's general preference for expanding public employment with increased growth rates is opportunistic and partisan-neutral rather than strictly ideological.

Turning to the empirical tests of hypothesis 2 in column two of table 3 the chief executive election variable is added to the interaction between GDP growth and fiscal transparency. The variables seem to have the expected sign with the three-variable interaction between fiscal transparency, GDP growth and chief executive election having a negative sign, while the GDP growth and chief executive interaction has a positive effect. The three-variable interaction however fails to reach statistical significance at conventional levels. However the results still suggest that the occurrence of an election might strengthen the relationship between GPD growth and public employment levels, and that electoral concerns, in accordance with the theoretical argument, might play a role in the relationship between GDP growth and public employment contingent on fiscal transparency. To further explore the apparent conditional effect on GDP growth on public employment I plot the marginal effects of GDP growth on public employment contingent on both fiscal transparency and election occurrence in figure 2 and 3.

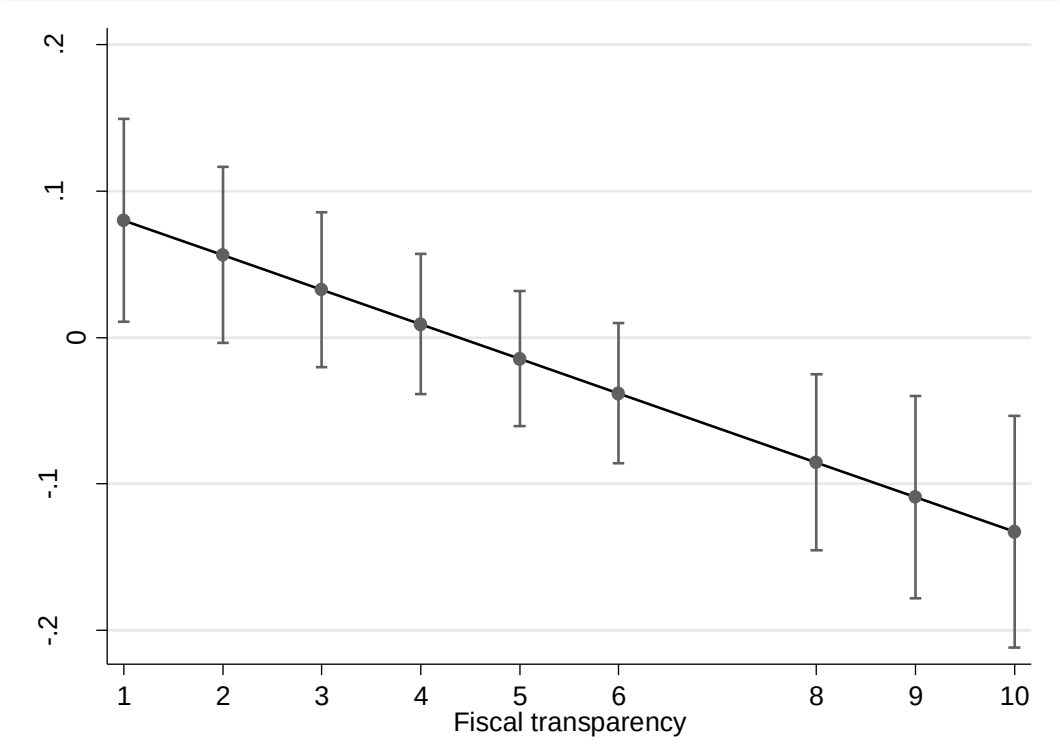
Table 1. Results: Fixed effects estimates

	(1)	(2)
GDP growth	0.1037 (0.0482)**	0.0837 (0.0493)
Fiscal transparency index X GDP growth	-0.0236 (0.0078)***	-0.0159 (0.0083)*
Chief executive election	0.0707 (0.0530)	-0.3101 (0.2492)
Chief executive election X GDP growth	-	0.0801 (0.0822)
Fiscal transparency index X chief executive election	-	0.1027 (0.0553)*
Fiscal transparency index X GDP growth X chief executive election	-	-0.0241 (0.0177)
General government expenditure	0.0927 (0.0388)**	0.0931 (0.0392)**
GDP per capita	0.0002 (0.0001)	0.0002 (0.0002)
Unemployment	-0.1152 (0.0448)**	-0.1120 (0.0440)**
Leftwing chief executive	-0.0694 (0.20194)	-0.0726 (0.1990)
Share of population aged 0-14	0.4132 (0.3756)	0.4291 (0.3790)
Share of population aged 65+	0.1268 (0.3581)	0.1394 (0.3586)
Method	OLS with country-fixed effects	OLS with country-fixed effects
Year dummies	X	X
Number of countries	20	20
Number of observations	249	249
Within R-square	0.4948	0.5017

Dependent variable is public employment as a share of total employment. Standard errors clustered by country in parentheses.
*: significance level 0.10, **: significance level 0.05, ***: significance level 0.01

The marginal effect of GDP growth on public employment solely contingent on fiscal transparency is visualized in figure 2. The figure again shows that at low levels on the modified Alt-Lassen index growth rates has a positive effect on level of public employment, whereas this effect disappears and even turns positive at higher levels of fiscal transparency[20]. GPD growth-induced expansions of public employment is apparently a phenomenon of low fiscal transparency countries, while high fiscal transparency countries can experience relative lower levels of public employment in economic boom years. These results could explain some of the differences among developed economies in public employment expansions in the years before the 2008 financial crisis.

Figure 2. The effect of GDP growth on public employment conditional on fiscal transparency



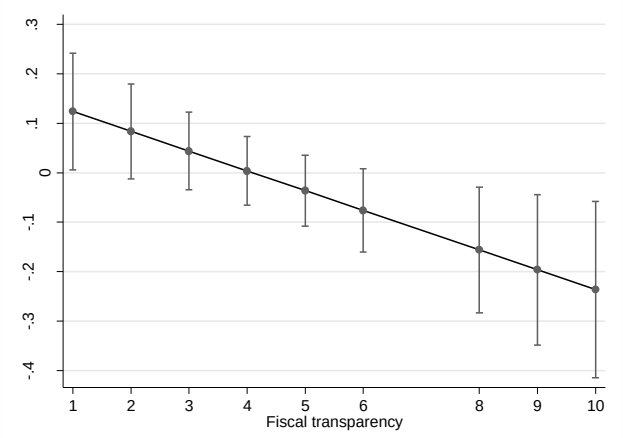
Note: Vertical lines show 90 pct. confidence intervals.

[20] No country in the dataset scores 7 on the Alt-Lassen index, confer figure 1, so the marginal effect for the value 7 is lacking in figure 2.

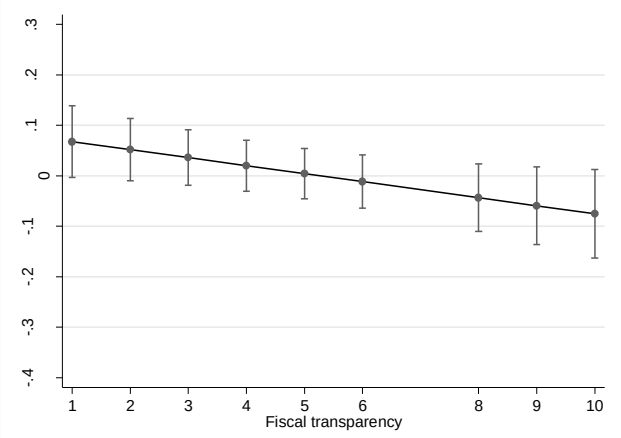
To explore the effect of elections on the above relationship and to further test hypothesis 2 the relationship between GDP growth and fiscal transparency is visualized separately for election and non-election years in figure 3 based on the estimation in table 1 column two. This visualization shows a much larger fiscal transparency-contingent effect of growth on public employment in election years. The difference between the effect of growth on public employment in low and high fiscal transparency countries is both much larger and more statistical robust in years of elections. There is thus evidence of a growth-induced electoral cycle in public employment contingent on the level of fiscal transparency. In accordance with the theoretical argument electoral concerns by incumbent governments seem to be one of the key mechanisms for the relationship between growth and the expansion of public employment contingent on fiscal transparency.

Figure 3. The effect of GDP growth conditional on fiscal transparency and elections

a: Election year



b. Non-election year



Note: Vertical lines show 90 pct. confidence intervals.

In short I find substantial and statistical significant evidence in favor of this article's two hypotheses about the effect of growth rates on public employment and how fiscal transparency decreases this effect. I also find that this relationship appear strongest and most statistical robust in election years.

However as discussed in section 3 current levels of public employment might also be affected by previous levels of public employment. So to test the robustness of the findings from table 1 and the validity of the two hypotheses I redo the analysis from table 1 using as the estimation method a one-step difference generalized methods of moments estimation with a lagged dependent variable. Due to the inclusion of a lagged dependent variable Belgium and Switzerland drop from the analysis. The results are reported in table 2.

In column 1 with the inclusion of the lagged dependent variable the non-electoral effect of GDP growth and the GDP growth and fiscal transparency interaction lose their statistical significance, while they retain their expected sign. There is thus less statistical robust evidence in favor of hypothesis 1, when previous levels of public employment are taken into account. However turning to column two, there is much more statistical significant evidence in favor of hypothesis 2 and thus the existence of a growth-induced electoral cycle in public employment contingent on fiscal transparency. The three-variable interaction between fiscal transparency, GDP growth and election occurrence has the expected negative sign with an effect statistical significant at the $P<0.01$-level, while the interaction between chief executive election and growth is also statistical significant with the expected positive sign and an effect, which is statistical significant at the $P<0.05$-level. In years of a chief executive election and high GDP growth public employment tends to increase but this effect diminishes as fiscal transparency increases.

Table 2. Results: Generalized methods of moments estimates

	(1)	(2)
Lagged dependent variable	0.8466 (0.1045)***	0.8427 (0.1026)***
GDP growth	0.0336 (0.0537)	0.0141 (0.0631)
Fiscal transparency index X GDP growth	-0.0044 (0.0075)	0.0031 (0.0102)
Chief executive election	0.1090 (0.0391)**	-0.2293 (0.1358)
Chief executive election X GDP growth	-	0.0930 (0.0357)**
Fiscal transparency index X chief executive election	-	0.0845 (0.0248)***
Fiscal transparency index X GDP growth X chief executive election	-	-0.0241 (0.0070)***
General government expenditure	0.0360 (0.0119)***	0.0363 (0.0130)**
GDP per capita	0.0001 (0.0001)*	0.0001 (0.0001)**
Unemployment	-0.0118 (0.0325)	-0.0123 (0.0288)
Leftwing chief executive	0.0744 (0.0959)	0.0719 (0.0886)
Share of population aged 0-14	0.1591 (0.1745)	0.1850 (0.1722)
Share of population aged 65+	0.1596 (0.0934)	0.1617 (0.0879)*
Method	GMM	GMM
Year dummies	X	X
Number of countries	18	18
Number of observations	204	204
Hansen statistics P-value	1	1

Dependent variable is public employment as a share of total employment. Robust standard errors in parentheses
*: significance level 0.10, **: significance level 0.05, ***: significance level 0.01

In accordance with the general findings from the analysis of the fixed-effect estimates, the GMM estimates show that GDP growth increases public employment under low fiscal transparency with the effect being most clear and statistical robust in years of election. Higher levels of fiscal transparency apparently limit a growth-induced electoral cycle in public employment in line with

previous findings from the political budget cycles literature (Alt and Lassen 2006b; Klomp and De Haan 2013). I now set out to further explore and test the robustness of these findings.

4.2. Scheduled and non-scheduled elections

The results suggest that the fiscal transparency-contingent effect of growth rates on public employment is much stronger and statistical robust in election years. Electoral concerns seem to be the key mechanism for the relationship between growth rates and public employment contingent on fiscal transparency. It then naturally raises the questions of the potential endogeneity of elections, since incumbent governments in the majority of the panel's countries are able to influence the timing of the elections and thus to *surf* according to favorable economic conditions, see Kayser (2005) for a theoretical discussion of this phenomenon. Furthermore elections which happen not because they are scheduled but suddenly due to political scandals and coalition disagreement might make it more difficult for an incumbent government to increase public employment, since the elections was not foreseen and public employment expansions takes at least some time to implement.

To explore these questions I redo the analysis from table 2 column two and make the distinction between scheduled and non-scheduled elections. An election is coded as scheduled, if it is held in the year the incumbent government's term officially expires based on data from the Database of Political Institutions. The results are reported in table 3. The results show that the interactions of interest are only statistical significant, when chief executive election is represented by the scheduled election variable. The electoral cycle in public employment, contingent on GDP growth and fiscal transparency is detectable only in years of scheduled elections. In accordance with the above

arguments, an incumbent government is apparently only induced or able to use increased economic growth to expand public employment significantly in an election year, if the election is foreseen and fiscal transparency is low. This finding is in line with other research within political budget cycles literature, which also find differences in political budget cycles between scheduled and non-scheduled elections, see Katsimi and Sarantides (2012, pp. 341-344) for an example.

Table 3. Scheduled and non-scheduled elections

	Scheduled election	Non-scheduled election
Lagged dependent variable	0.8421 (0.0650)***	0.8027 (0.0625)***
GDP growth	0.0138 (0.0348)	0.0297 (0.0316)
Fiscal transparency index X GDP growth	0.0032 (0.0071)	-0.0039 (0.0059)
Chief executive election	-0.3283 (0.2169)	-0.4032 (0.4538)
Chief executive election X GDP growth	0.1098 (0.0570)*	0.1538 (0.1692)
Fiscal transparency index X chief executive election	0.0869 (0.0419)**	0.1689 (0.1233)
Fiscal transparency index X GDP growth X chief executive election	-0.0257 (0.0119)**	-0.0406 (0.0407)
General government expenditure	0.0369 (0.0147)**	0.0392 (0.0143)***
GDP per capita	0.0001 (0.0000)**	0.0001 (0.0000)**
Unemployment	-0.0137 (0.0282)	-0.0077 (0.0272)
Leftwing chief executive	0.0721 (0.0700)	0.0611 (0.0681)
Share of population aged 0-14	0.1770 (0.1194)	0.0999 (0.1144)
Share of population aged 65+	0.1519 (0.0900)*	0.1514 (0.0860)*
Method	GMM	GMM
Year dummies	X	X
Number of countries	18	18
Number of observations	204	204
Hansen statistics P-value	1	1

Dependent variable is public employment as a share of total employment. Robust standard errors in parentheses.
*: significance level 0.10, **: significance level 0.05, ***: significance level 0.01

4.3. Robustness tests

As a robustness test I conduct a number of sample restrictions to test the robustness of the results from table 2 by removing potential influential and uncertain observations from the analysis.

First I exclude the years 1995-1998 from the sample. These years are the sample years before the data used to construct the Alt-Lassen index was collected. Even though previous research has used the Alt-Lassen index as the explanatory variable with data going back to 1990 and 1989 (Alt and Lassen, 2006a, pp. 1417-1418; Alt and Lassen, 2006b, pp. 535-357), and both cross-country and within-country evidence seems to suggest that fiscal transparency change slowly over time (Alt et al., 2014, pp. 709-710), the timing of the measurement of this independent variable could still be an issue. However the exclusion of these years do not change neither the statistical significance or the relative size effects of the key variables. There is still evidence in favor of hypothesis 2 and the occurrence of a growth-induced electoral cycle in public employment contingent on fiscal transparency.

Then I exclude the years 2006-2010 from the sample to test the robustness of the findings in the absence of the boom and subsequent crisis years of the late 2000s. These were years of first larger than average GDP growth rates in most of the studied countries in the years 2006 and 2007 followed by even larger negative growth rates in many countries. Removing these years from the analysis would test whether the article's arguments holds outside extreme business cycle fluctuations. Furthermore it would test whether the theoretical argument hold beyond the specific experiences of the European and North American countries in the boom and bust years before and after the financial crisis, which helped motivate this article. However removing these years from the

sample does not fundamentally change the statistical significance of variables of interest. Growth-induced electoral cycles in public employment contingent on fiscal transparency seems to be a more general phenomenon in OECD-countries and are not limited to the boom and bust years around the occurrence of the global financial crisis.

Thirdly to reduce the potential effect of outliers in the sphere of fiscal transparency I remove both the country with the lowest (Greece) and highest (New Zealand) score on the Alt-Lassen index from the analysis. The results show that the exclusion of these two countries does not has as substantial effect on neither the statistical robustness or the size effects of the core results from the GMM estimations.

Table 4. Robustness tests

	Excluding 1995-1998	Excluding 1995-1998	Excluding 2006-2010	Excluding 2006-2011	Excluding Greece	Excluding Greece	Excluding New Zealand	Excluding New Zealand
Lagged dependent variable	0.8041 (0.1179)***	0.7872 (0.1220)***	0.6938 (0.0893)***	0.6809 (0.1024)***	0.8515 (0.1113)***	0.8517 (0.1061)***	0.8245 (0.0980)***	0.8084 (0.0978)***
GDP growth	0.0197 (0.0571)	0.0029 (0.0638)	0.0603 (0.0588)	0.0108 (0.0757)	0.0114 (0.0608)	-0.0105 (0.0757)	0.0225 (0.0518)	0.0135 (0.0580)
Fiscal transparency index X GDP growth	-0.0032 (0.0076)	0.0045 (0.0104)	-0.0066 (0.0097)	0.0085 (0.0138)	-0.0008 (0.0084)	0.0065 (0.0125)	-0.0030 (0.0089)	-0.0004 (0.0101)
Chief executive election	0.1169 (0.0427)**	-0.1801 (0.1397)	0.1136 (0.0478)*	-0.5821 (0.3870)	0.1032 (0.0448)**	-0.2378 (0.1664)	0.1018 (0.0388)**	-0.1921 (0.1744)
Chief executive election X GDP growth	-	0.0918 (0.0403)**	-	0.1977 (0.0887)**	-	0.0911 (0.0526)	-	0.0788 (0.0484)
Fiscal transparency index X chief executive election	-	0.0773 (0.0253)***	-	0.1751 (0.1079)	-	0.0831 (0.0298)**	-	0.0765 (0.0380)*
Fiscal transparency index X GDP growth X chief executive election	-	-0.0242 (0.0075)***	-	-0.0494 (0.0269)*	-	-0.0228 (0.0097)**	-	-0.0210 (0.0114)*
General government expenditure	0.0429 (0.0128)***	0.0442 (0.0124)***	0.0375 (0.0293)	0.0276 (0.0259)	0.0280 (0.0112)**	0.0283 (0.0122)**	0.0426 (0.0140)***	0.0433 (0.0161)***
GDP per capita	0.0001 (0.0001)**	0.0001 (0.0000)**	0.0002 (0.0001)*	0.0002 (0.0001)*	0.0001 (0.0000)	0.0001 (0.0000)	0.0001 (0.0001)**	0.0001 (0.0001)**
Unemployment	-0.0050 (0.0345)	-0.0120 (0.0333)	-0.0756 (0.0461)	-0.0717 (0.0368)*	-0.0323 (0.0352)	-0.0308 (0.0315)	-0.0067 (0.0259)	-0.0049 (0.0232)
Leftwing chief executive	0.0884 (0.1083)	0.0817 (0.1057)	-0.0759 (0.1157)	-0.1101 (0.1094)	0.0608 (0.1005)	0.0599 (0.0931)	0.0554 (0.1072)	0.0573 (0.1048)
Share of population aged 0-14	0.0466 (0.1828)	0.0569 (0.1798)	0.2222 (0.2140)	0.2379 (0.2212)	0.1077 (0.1992)	0.1313 (0.1945)	0.1900 (0.2347)	0.1959 (0.2336)
Share of population aged 65+	0.2263 (0.1273)*	0.2098 (0.1207)*	0.1882 (0.1565)	0.1702 (0.1409)	0.0510 (0.0878)	0.0604 (0.0837)	0.2187 (0.1107)*	0.2224 (0.1118)*
Method	GMM	GMM	GMM	GMM	GMM	GMM	GMM	GMM
Year dummies	X	X	X	X	X	X	X	X
Number of countries	18	18	18	18	17	17	17	17
Number of observations	182	182	132	132	192	192	190	190
Hansen statistics P-value	1	1	1	1	1	1	1	1

Dependent variable is public employment as a share of total employment. Robust standard errors in parentheses. *: significance level 0.10, **: significance level 0.05, ***: significance level 0.01

As a final robustness test I use the lagged values of GDP per capita and unemployment levels as controls instead of their in-year values. It could be plausible that economic policymakers would base in-year decisions of public employment expansions partly on economic variables for previous years, which especially should be especially plausible for general level of economic development and average unemployment levels, which are only available at the end of the year[21]. The results are reported in appendix 3. However lagging the economic control variables does not change the core statistical results for neither the fixed-effects nor the GMM estimates.

In short the above robustness checks seem to validate the findings from the main analysis and lend support to the theoretical argument, that higher GDP growth rates tends to increase public employment when fiscal transparency is low, and that this effect is strongest and most statistical robust in election years in line with hypothesis 2. Electoral concerns seem to give rise to an electoral cycle in public employment, contingent on GDP growth, and thus the ability to finance these expansions, as well as fiscal transparency, which makes the opportunity costs of these expansions more visible to voters.

[21] It is however much more plausible that that an incumbent government can gain an in-year estimate of increases in GDP growth and the subsequent potential for revenue windfalls through quarterly GDP figures and in-year revenue reports and estimates, which it would be plausible very attentive to in election years.

5. Discussion and conclusion

Public employment levels and changes vary significantly even among developed democracies. This article argues that variations in fiscal institutions as well as electoral concerns have significant explanatory power for whether incumbent governments use revenue windfall from increased growth rates to increase public employment often to unsustainable levels. Data for 20 OECD-countries from 1995-2010 provides substantial evidence in favor of this argument. At low levels of fiscal transparency higher GDP growth rates seem to lead to a higher level of public employment, while this effect diminishes and eventually disappears at higher levels of fiscal transparency. This transparency-contingent effect of growth on public employment is much stronger and statistical robust in election years, so electoral concerns do seem to be a key mechanism for this phenomenon. There is thus robust evidence for electoral cycles in public employment contingent on growth rates and fiscal transparency. The ability of voters to monitor the potential opportunity costs and longer term consequences of increased public employment seems to limit an incumbent government's expansion of public employment in times of high economic growth and national elections. Furthermore the long-term approach to public finances associated with higher levels of fiscal transparency probably makes it more difficult for an incumbent government to treat revenue increases from business cycles fluctuations as permanent increases in revenue and expand public employment respectively.

The argument and evidence of this article have potential policy implications. Prudent and long term sustainable public personnel policies probably should be implemented under transparent fiscal procedures. Otherwise business cycle fluctuations and reelection concerns might make it tempting for an incumbent government to increase public employment based on the potential for business

cycle induced revenue windfalls, which cannot be fiscally sustained during times with less favorable business cycles and thus have important consequences for the stability of public services and the labor markets as a whole. If changes in public employment closely follow growth trends, public employment might exhibit pro-cyclical tendencies[22].

Furthermore if growth trends are volatile in a country with low fiscal transparency, increases in the number of public employees might not yield similar increases the quality of public services as public bureaucracies and service providers are potentially overstaffed in times of economic booms, especially during election years, and then have to implement personnel cuts quickly in economic downturns. Increased transparency especially through the strengthening of the quality of budgetary forecasts and the limiting of the potential political biases[23] of these could be important in securing a more stable development in the number of public employees and thus greater stability of public services. More standardized and open fiscal procedures and more standardized forecast tools as well as greater reliance on independent forecasts and/or independent verification of core fiscal and economic assumptions in the making of fiscal policy could be steps in this direction. Given that many of the reforms undertaken in developed countries in the aftermath of financial crisis seek to strengthen the role of independent fiscal councils (Schaechter et al., 2012, p. 28), many countries could experience a more stable and business cycle independent development in their level of public

[22] Volatile changes in public employment and/or wage levels probably have a potential spill-over effect into the private labor market as well. For a study on the feed-back effects between public and private sector wages see Lamo et al. (2012). For a view on dynamics of different sector unions leadership and wage-setting see Garett and Way (1999).

[23] The research on political biases in fiscal forecasts is a huge literature, see von Hagen (2010) and Pina and Venes (2011) for examples on the effects of fiscal institutions on forecast biases.

employment in the future. However future research and evaluations are needed to evaluate the potential public personnel effects of these recent reforms.

Future research could investigate further how growth increases, business cycle fluctuations and the potential for other types of revenue booms affect countries' fiscal policy and personnel policies and exploring the mediating effect of political and fiscal institutions as well as the role of elections. The interaction between fiscal transparency, elections and the prospect for revenue windfalls explored in this article is potential even more important regarding the question of natural resource windfalls, which, in line with formal models of the so-called *resource curse* (Robinson et al., 2006*)*, should have an important potential effect on public employment due to the political considerations of an incumbent government. As natural resource endowments, fiscal transparency and political institutions are potentially endogenous to each other (de Renzio and Wehner, 2013), careful theorizing and estimation would be an important issue in this endeavor. These topics and the theme of this article would be of interest for developing countries and countries with potential weaker political and fiscal institutions, where a larger effect of revenue windfalls and electoral concerns on public employment could be expected, and which are more prone to large electoral budget cycles (Shi and Svensson 2006). Future research could explore these themes with data from these countries and/or data for subnational political units.

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Appendix 1: Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max	Observations
Public employment/total employment	19.24	6.75	10.88	37.06	249
GDP growth	2.59	2.36	-6.40	10.80	249
Fiscal transparency index	4.41	2.36	1	10	249
Chief executive election	0.28	0.45	0	1	249
General government expenditure	44.07	6.92	29.71	65.57	249
GDP per capita	31711.30	6274.97	18097	49135	249
Unemployment	7.27	3.40	2.1	23	249
Leftwing chief executive	0.47	0.50	0	1	249
Share of population aged 0-14	17.93	2.48	13.41	24.19	249
Share of population aged 65+	15.17	2.35	11.06	21	249

Appendix 2: Core results excluding Austria

	(1)	(2)	(3)	(4)
Lagged dependent variable	-	-	0.8755 (0.1075)***	0.8741 (0.1064)***
GDP growth	0.0999 (0.0455)**	0.0815 (0.0458)*	0.0279 (0.0546)	0.0073 (0.0642)
Fiscal transparency index X GDP growth	-0.0212 (0.0072)***	-0.0139 (0.0076)*	-0.0037 (0.0078)	0.0034 (0.0102)
Chief executive election	0.0646 (0.0559)	-0.2973 (0.2478)	0.1087 (0.0420)**	-0.2446 (0.1388)*
Chief executive election X GDP growth	-	0.0738 (0.0844)	-	0.0974 (0.0348)**
Fiscal transparency index X chief executive election	-	0.0987 (0.0536)	-	0.0853 (0.0250)***
Fiscal transparency index X GDP growth X chief executive election	-	-0.0229 (0.0180)	-	-0.0240 (0.0067)***
General government expenditure	0.0893 (0.0407)**	0.0899 (0.0412)**	0.0323 (0.0124)**	0.0318 (0.0131)**
GDP per capita	0.0001 (0.0001)	0.0001 (0.0001)	0.0001 (0.0000)*	0.0001 (0.0000)*
Unemployment	-0.0927 (0.0464)	-0.0895 (0.0458)*	-0.0120 (0.0308)	-0.0124 (0.0277)
Leftwing chief executive	-0.1244 (0.2216)	-0.1274 (0.2176)	0.0826 (0.0955)	0.0807 (0.0868)
Share of population aged 0-14	0.2755 (0.3410)	0.2916 (0.3444)	0.1175 (0.1696)	0.1439 (0.1680)
Share of population aged 65+	0.0674 (0.3683)	0.0799 (0.3688)	0.1471 (0.0933)	0.1522 (0.0886)
Method	OLS with country-fixed effects	OLS with country-fixed effects	GMM	GMM
Year dummies	X	X	X	X
Number of countries	19	19	17	17
Number of observations	233	233	190	190
Within R-square	0.4516	0.4594	-	-
Hansen statistics P-value	-	-	1	1

Dependent variable is public employment as a share of total employment. Country-clustered/robust standard errors in parentheses.
*: significance level 0.10, **: significance level 0.05, ***: significance level 0.01

Appendix 3: Economic controls lagged

	(1)	(2)	(3)	(4)
Lagged dependent variable	-	-	0.8463 (0.1028)***	0.8405 (0.1007)***
GDP growth	0.1647 (0.0807)*	0.1493 (0.0796)*	0.0648 (0.0617)	0.0510 (0.0707)
Fiscal transparency index X GDP growth	-0.0225 (0.0073)***	-0.0143 (0.0079)*	-0.0040 (0.0072)	0.0038 (0.0094)
Chief executive election	0.0656 (0.0542)	-0.3104 (0.2432)	0.1091 (0.0386)**	-0.2336 (0.1334)*
Chief executive election X GDP growth	-	0.0786 (0.0787)	-	0.0957 (0.0336)**
Fiscal transparency index X chief executive election	-	0.1066 (0.0554)	-	0.0869 (0.0251)**
Fiscal transparency index X GDP growth X chief executive election	-	-0.0256 (0.0176)	-	-0.0253 (0.0068)***
General government expenditure	0.0910 (0.0388)**	0.0920 (0.0393)	0.0370 (0.0112)***	0.0390 (0.0122)***
Lagged GDP per capita	0.0001 (0.0001)	0.0001 (0.0002)	0.0001 (0.0001)	0.0001 (0.0001)*
Lagged unemployment	-0.1202 (0.0457)**	-0.1171 (0.0442)**	-0.0231 (0.0415)	-0.0165 (0.0376)
Leftwing chief executive	-0.0946 (0.1995)	-0.0985 (0.1965)	0.0617 (0.0946)	0.0585 (0.0883)
Share of population aged 0-14	0.3672 (0.3606)	0.3902 (0.3660)	0.1419 (0.1587)	0.1745 (0.1608)
Share of population aged 65+	0.1634 (0.3550)	0.1779 (0.35739)	0.1668 (0.0937)*	0.1815 (0.0868)*
Method	OLS with country-fixed effects	OLS with country-fixed effects	GMM	GMM
Year dummies	X	X	X	X
Number of countries	20	20	18	18
Number of observations	249	249	204	204
Within R-square	0.4977	0.5055	-	-
Hansen statistics P-value	-	-	1	1

Dependent variable is public employment as a share of total employment. Country-clustered/robust standard errors in parentheses.
*: significance level 0.10, **: significance level 0.05, ***: significance level 0.01