



NIPE



Universidade do Minho

Documentos de Trabalho
Working Paper Series

“Economic Voting in Portuguese Municipal Elections”

Rodrigo Martins
Francisco José Veiga

NIPE WP 33/ 2010

NÚCLEO DE INVESTIGAÇÃO EM POLÍTICAS ECONÓMICAS
UNIVERSIDADE DO MINHO

“Economic Voting in Portuguese Municipal Elections”

Rodrigo Martins
Francisco José Veiga

NIPE* WP 33/ 2010

URL:

<http://www.eeg.uminho.pt/economia/nipe>

* NIPE – *Núcleo de Investigação em Políticas Económicas* – is supported by the Portuguese Foundation for Science and Technology through the *Programa Operacional Ciência, Tecnologia e Inovação* (POCI 2010) of the *Quadro Comunitário de Apoio III*, which is financed by FEDER and Portuguese funds.

Economic Voting in Portuguese Municipal Elections^{*}

Rodrigo Martins^a

Universidade de Coimbra and GEMF

Francisco José Veiga^b

Universidade do Minho and NIPE

Abstract

This paper analyses the impact of economic conditions on Portuguese local electoral outcomes. We use two extensive datasets to estimate an economic voting model which accounts for the possibility that different levels of government have different levels of responsibility for economic outcomes and for clarity of government responsibility. Empirical results indicate that the performance of the national economy is important especially if local governments are of the same party as the central government. The municipal situation is also relevant particularly in scenarios of higher clarity of government responsibility.

Keywords: Local governments, Elections, Portugal, Voting, Economic conditions

JEL Classifications: D72, H7

This version: October 2010

^{*} The authors thank Henry Chappell and Linda Veiga for very useful comments. Francisco Veiga is thankful for the financial support provided by the Portuguese Foundation for Science and Technology under research grant PTCO/ECO/65711/2006 (partially funded by FEDER).

^a Faculdade de Economia, Universidade de Coimbra, Av. Dias da Silva 165, 3004-512 Coimbra, Portugal. E-mail: rodrigom@fe.uc.pt.

^b Escola de Economia e Gestão, Universidade do Minho, 4710-057 Braga, Portugal. E-mail: fjveiga@eeg.uminho.pt.

1. Introduction

This paper analyzes economic voting in Portuguese local elections. The main purpose of the paper is to investigate whether economic conditions affect local electoral outcomes in a way that is consistent with the responsibility hypothesis. Since Portuguese local governments are responsible for improving the well-being of the population that resides in the municipality and have a wide range of opportunities for intervention that affects local economic activity, we expect that they will be held accountable for local economic performance. Having no jurisdiction over national economic policies, local governments should not, in principle, be held responsible for national economic performance. That is, according to the responsibility hypothesis, national economic conditions are only expected to affect the popularity and votes of the national government. But, as noted by Carsey and Wright (1998), the electorate may wish to reward, or punish the national government in second tier (local) elections. Thus, it is possible that the votes received by local governments headed by the party that controls the national government are affected by national economic conditions.

Although Veiga and Veiga (2010) present evidence that the results of Portuguese legislative elections are affected by the performance of the national economy and, to a lesser extent, by municipal economic conditions, to our knowledge, there are no studies focusing on the effects of national and local economic outcomes on Portuguese local electoral results.¹ This article tries to fill this gap in the literature by performing an empirical analysis that uses two extensive datasets. The first is a panel dataset covering

¹ Aidt, Veiga and Veiga (2010) use Portuguese local election data in the context of a simultaneous equations model that tests for the presence of political business cycles and for their effects on the win margin of the incumbent mayor.

the 278 Portuguese mainland municipalities² over the period 1979-2005, encompassing 8 electoral periods. The second is a cross-sectional dataset for the 2001 local elections covering the 4037 Portuguese mainland *freguesias*³.

In order to analyze the electoral accountability of Portuguese local governments, we estimate a vote function that models the effects of the economic environment taking into account the relationship between local and national governments and clarity of responsibility constraints. We start by testing whether the votes received by local incumbents are affected or not by national economic outcomes in a model that differentiates local governments affiliated with the party that rules the nation from other municipal incumbents. We hypothesize that these affiliated governments may be subject to political accountability effects. Partisan effects are also tested for in order to check if local authorities' ideological orientation affect electoral outcomes. We then proceed to test for the importance of regional economic indicators in the vote function, assuming that more clarity of responsibility may strengthen economic voting. Finally, the cross-sectional data is used to investigate the impact of local unemployment on local electoral outcomes, and as a robustness check of the panel data results.

The article is organized as follows. The Section 2 discusses economic voting in local elections. Section 3 presents a short tour on some aspects of Portuguese elections. Section 4 describes the model and dataset used. The panel data results obtained are presented in

² Mainland Portugal is divided into 278 municipalities (*municípios* or *concelhos*). Usually, a municipality has the name of its biggest town or city or, in some cases, of its historically most important town or city. The municipality is, usually, considerably larger than the city or town after which it is named.

³ Each Municipality is subdivided into a variable number of *Freguesias*. These are the lowest administrative units in Portugal. As far as we can tell, no previous study has used a dataset covering all the Portuguese mainland *freguesias*.

section 5, while section 6 reports the cross section results for the unemployment rate. Finally, conclusions are presented in section 7.

2. Economic Voting in Local Elections

There are good reasons to suppose that local economic conditions influence national electoral results. Voters may use the local environment as a proxy for the general situation of the country or/and think that the policies implemented by the national government actually have a significant effect in the local economy. Although the number of papers that analyzes the importance of local economic indicators in legislative electoral results is relatively small,⁴ they generally confirm that both national and local economic conditions are important in explaining voting. However, in the literature on local elections the results found do not exhibit such a consensus. Studies like the ones from Atkeson and Partin (1995), Hansen (1999), Squire and Fastnow (1994) for the US, highlight the importance of the regional economy, while Remmer and Gelineau (2003) for Argentina, Belanger and Galineau (2005) for Canada, and Peltzman (1987) and Kone and Winters (1993) for the US, find evidence in favor of the importance of national, but not subnational economic conditions.

One key issue when addressing economic voting in local elections is the viability of the responsibility hypothesis. With national elections, no matter which level of the economy we consider, there are arguments supporting the hypothesis that incumbents will be rewarded or punished based on economic performance. With municipal elections the formulation of the responsibility hypothesis is more problematic. One can argue that

⁴ See, for instance, Auberger and Dubois (2005), Eisenberg and Ketcham (2004), Holbrook (1991), Jonhston and Pattie (2001), Strumpf and Phillippe (1999), and Veiga and Veiga (2010).

governments should be held accountable only for economic results over which they exert some control (Anderson, 2006). According to this view, local governments cannot be reasonably held accountable for national policies because they do not control the major levels of macroeconomic policy. However, voters might consider the national economic environment in their decision process. For example, some may prefer to cast their votes in for or against the parties controlling the national government, viewing their vote in a local election as a referendum on the central government's performance. Others may link their choices to the political ties established between different levels of government.⁵ Adverse national economic conditions may reduce their electoral support for the central government's party in local elections, and increase support for other parties.

At the subnational level, both the central government and the local authorities can be held responsible for the economic conditions, creating a problem of clarity of responsibility for voters. According to Powell and Whitten (1993), factors that undermine the clarity of incumbent policymakers' responsibility remove the effects of economic variables on election outcomes. In local elections, the voters' task of assessing which economic results are affected by local government policies and which are determined by central authorities can vary in difficulty across municipalities and across time. The most favorable scenario for assessing responsibility would occur when the same party heads national and the local governments and both govern with majorities. The least favorable scenario for assessing responsibility would occur when different parties rule at local and centralized governmental levels, and rule is by coalitions rather than majorities. If the

⁵ Niemi et. al. (1995) and Carsey and Wright (1998) find that this multilevel governance plays an important role in explaining local election results. Concretely, the party that controls the national government tends to be rewarded/punished in second tier elections for good/bad economic outcomes.

reward/punishment mechanism is important in local elections outcomes, one should expect to find it at least in the first case. As clarity of responsibility decreases, especially if the party ties between both governments are broken, the economic dimension may disappear from the voters' decision making processes.

3. Brief characterization of Portuguese elections

On April 25, 1974 democracy was re-established in Portugal, ending 48 years of dictatorship. A period of considerable political instability that followed (with 6 provisional governments) ended in 1976 when a new Constitution was approved and the first legislative elections took place. Between 1976 and 1987 several governments ruled but none stayed in office for the entire term. In contrast, since 1987, only one government failed to complete a full four year term. Portugal is a typical multiparty system that has generated one-party majority governments, coalition governments of two or three parties, and one-party minority governments. Table 1 summarizes the post-revolution Portuguese governments.

[Insert Table 1 about here]

The 1976 Constitution formally established the Portuguese municipalities and in December of that year the first local elections were held. All subsequent elections took place in December,⁶ except the most recent one, which was held in October 2009.

In each municipality there is a Town Council and a Municipal Assembly. The first has the executive power - it implements local policies. The second is a deliberative body that approves the overall framework of local policies. The members of the Town Council and a part of the members of the Municipal Assembly are elected directly by the voters

⁶ Election years were: 1979, 1982, 1985, 1989, 1993, 1997, 2001, and 2005.

registered in the municipality. The remaining seats in the Assembly are held by the presidents of the councils of the *Freguesias*⁷ which belong to the municipality.

These three bodies of local governance (Town Council, Municipal Assembly and Council of the *Freguesia*) serve four year terms and local residents are called upon to vote on the same day for party or independent lists presented for each of them. The outcome is determined, directly or indirectly, by the Hondt method⁸ for transforming votes into seats. The selected mayor is the candidate from the top of the list that gains the most votes. The mayor presides over the Town Council meetings and plays a key role in the municipal government. He assigns tasks to the other Town Council members, manages human resources, authorizes contracts and licenses and, in accordance with the general policy framework, chooses which projects to implement and influences the timing of their implementation.

Portuguese local governments, in which the mayor is the principal decision maker, are responsible for the organization of the territory, social and economic development, and the task of supplying local public goods such as water, transportation, housing, healthcare, education and culture⁹. Their wide range of intervention makes them responsible for the well-being of the population that resides in the municipality. The fact that they are of substantial importance in local economic activity, potentially ties the municipal government's electoral fortune to the economic environment.

⁷ *Freguesias* are the lowest administrative unit in Portugal. The president and council members are elected directly by the voters living in the area.

⁸ The Hondt method is a highest averages method for allocating seats in party-list proportional representation.

⁹ Law 159/99 defines the areas of intervention of Portuguese local governments.

4. Data and Model Specification

To analyze the economic determinants of local governments' electoral results we use two extensive datasets. The first is comprised of panel data for all mainland municipalities (currently 278), ranging from 1979 to 2005, and covering 8 electoral periods.

The second is a cross-sectional dataset that focuses on the 2001 local elections and comprises all mainland *freguesias* (a total of 4037). Normally unemployment data is not available at the level of *freguesias*, but because 2001 was a census year, data for the unemployment rate at both municipal and *freguesia* levels are available. This enables us to investigate the political salience of the local unemployment rate at a much more disaggregated level than previous studies have attempted.

Electoral results and political data were obtained from the Technical Staff for Matters Concerning the Electoral process (STAPE). To characterize the national economic environment we use the two variables that have received the greatest empirical support in vote functions: inflation and unemployment. The inflation rate was acquired from the IMF's *International Financial Statistics* while the unemployment rate was obtained from the OECD's *Main Economic Indicators*. The regional unemployment rate (at the *freguesia* level) and the per-capita GDP (at the NUTS III¹⁰ level) were obtained from the Portuguese National Institute of Statistics (INE).¹¹

¹⁰ NUTS is a geocode standard for referencing the subdivisions of countries for statistical purposes, used within the European Union. In Portugal, a hierarchy of three NUTS levels is established. Continental Portugal correspond to a NUTS I region, which is subdivided into 5 NUTS II regions. These 5 regions are then subdivided into 28 sub regions (NUTS III) each one comprised of several municipalities.

¹¹ The NUTS III unemployment rate was available only from 1999 onwards, thus reducing time variability and the number of observations. Furthermore, with only 2 elections covered it was not possible to use the GMM methodology.

Data on the number of employees in firms and the average municipal wage are available since 1985 in the “Quadros de Pessoal” database of the Portuguese Ministry of Labour and Social Solidarity (MTSS)¹². As a measure of municipal income, we use the *Markttest*’s income index that reflects municipalities’ wealth by taking into consideration the fiscal burden, electricity consumption, automobiles sales and the number of bank agencies and of retail stores.

The empirical model for the vote functions has an autoregressive component and is of the following form:

$$GV_{i,E} = \alpha_1 GV_{i,E-1} + \alpha_2 ECO_{i,E} \times Dum(r)_{i,E} + \alpha_3 ECO_{i,E} + \alpha_4 POP_{i,E} + \alpha_5 ENP_{i,E} + \alpha_6 TO_{i,E} + \alpha_7 RECAND_{i,E} + v_i + u_{i,E} \quad (1)$$

$$i = 1, \dots, 278, \quad E = 1979, 1982, 1985, 1989, 1993, 1997, 2001, 2005$$

where $GV_{i,E}$ is the percentage of votes obtained in municipality i by the local incumbent government’s principal party in the election for the Town Council and $ECO_{i,E}$ is a set of national and/or local economic variables that may affect votes for the local government’s party. Then, to control for non economic factors we include a set of additional explanatory variables. $POP_{i,E}$ is a discrete variable reflecting the size of the municipality¹³. In principle, higher vote shares are harder to obtain in more populous municipalities. Thus, we expect a negative coefficient for population. $ENP_{i,E}$ is the Laakso and Taegepera (1979) index for the effective number of political parties/forces that represent electoral lists in each municipality. It controls for political fragmentation and electoral competitiveness, which are expected to be negatively related to the vote

¹² This is a yearly mandatory employment survey that covers almost all privately owned firms employing paid labor in Portugal (public servants and own employment are not included).

¹³ It equals 1 for Lisbon and Porto, 2 for other municipalities with population over 40000, 3 for municipalities with population between 10000 and 40000, and 4 for the remaining municipalities.

share of the incumbent local government party. $TO_{i,E}$ is the number of consecutive terms in office for the same party. Given the ample evidence of costs of ruling found in the literature,¹⁴ we expect that the coefficient associated with this variable has a negative sign. $RECAND_{i,E}$ is a dummy equal to 1 when the Mayor runs for another term, thus capturing personality effects, which are expected to have a positive effect on votes. $Dum(r)_{i,E}$ represents the set of r dummy variables interacting with the vector of economic variables ($ECO_{i,E}$) in order to capture effects of alternative governance scenarios. We define three cases for r . The first is a dummy variable that indicates a local government controlled by the party that holds power at the national level ($r = SG$). The second refines this case to situations where the national and local governments are both in a majority position ($r = SMG$). The third analyses potential partisan differences, permitting differential impacts of economic conditions according to partisan identity. For this variable we distinguish situations where the national and local governments are simultaneously dominated by the left centre party ($r = PS$) from those where the right center party ($r = PSD$) dominates both levels of government.¹⁵ Finally, ν_i is a fixed effect for municipality i , and $u_{i,E}$ is the error term.

Given the dynamic structure of the model, it is not appropriate to estimate equation (1) using OLS. In both the fixed and random effects settings, the lagged dependent variable is correlated with the error term, even if we assume that the disturbances are not themselves autocorrelated. According to Arellano and Bond (1991),

¹⁴ Evidence of popularity erosion over time in office was already documented in the seminal paper of Mueller (1970). Veiga and Veiga (2004 and 2010) also find evidence of costs of ruling for Portuguese governments.

¹⁵ Since only the socialist party (PS) and the social democratic party (PSD) have lead national governments, only these two parties have simultaneously dominated national and local governments.

this implies inconsistent estimates of the model, when, as in our sample, there is a clear dominance of cross sections (278 municipalities) over time periods (8 elections). These authors developed a Generalized Method of Moments (GMM) estimator that solves the problems noted above. First differencing (1) removes the individual effects (v_i) and produces an equation that is estimable by instrumental variables. In this paper, we use the extended version of the GMM estimator proposed by Blundell and Bond (1998), the System-GMM estimator for linear dynamic panel data models¹⁶.

5. Panel Data Empirical Results

The first two sets of estimations presented include only national economic indicators and the control variables.¹⁷ The inflation rate and the unemployment rate are lagged one year and they are also used as average percentage annual changes over the entire term to test the relevant time horizon for Portuguese voters. Results using System-GMM are shown in Table 2.

[Insert Table 2 about here]

There is evidence that the national economy affects local governments' electoral results, although it seems that Portuguese voters do not attach great importance to the more distant past, confirming the findings of Veiga and Veiga (2010) for legislative elections. Unemployment only affects local governments that belong to the party that holds power at the national level and the effect is found to be stronger when they are both

¹⁶ Besides the lagged dependent variable we considered the effective number of parties as an endogenous variable. On dynamic panel data models, see chapter 8 of Baltagi (2008).

¹⁷ Since regional and municipal data is only available after 1993, for most variables, their inclusion would severely reduce the number of observations and the time-period covered. Thus, in order to be able to use data since 1979, we start by including just the national economic variables. Regional and municipal economic variables will be considered in the estimations of tables 4 and 5.

majority governments. Although municipal incumbents have little control over the macroeconomic environment, they seem to be held accountable, as an increase in national-level unemployment or inflation affects negatively their chances of reelection. Thus, as suggested by Carsey and Wright (1998), the electorate tends to penalize (reward) the party of the national government in local elections for bad (good) economic outcomes. Furthermore, the penalty/reward is stronger for governments that enjoy greater power and responsibility over economic policy (majority governments), as Powell and Whitten (1993) suggest.

The results also indicate that the inflation rate negatively affects local authorities that are not affiliated with the central government. We think that this may be related to some degree of misperceived accountability. As the national inflation is taken as a benchmark for price increases in some public goods that are provided by the municipality, such as public transportation, healthcare, education and water, voters may attribute these higher prices to direct policy decisions emanating from the local governments.

The control variables exhibit the expected signs. The size of the population, the effective number of parties, and time in office have negative effects, while there is a positive effect on votes (which we attribute to personality effects) when the mayor decides to run for reelection. Although the autoregressive component does not suggest high persistence of vote shares, it is statistically significant and positively signed.

In Table 3, we consider the possibility that left and right parties will be subjected to differing standards in the way that they are rewarded and punished for economic conditions. Powell and Whitten (1993) claim that a government should be held more responsible for those variables that it, or its constituency, care about the most, while

Swank's (1993) partisan hypothesis assumes that higher unemployment rates should increase the demand for left-wing governments, as they are more prone to fight unemployment, and that higher inflation should increase the demand for right-wing governments (which will fight harder to decrease it). In the reported estimations, the partisan effects are modeled by the inclusion of dummies indicating the simultaneous control of the national and of the local governments by the center-left party (socialist party - PS) or by the center-right party (social democratic party - PSD).

[Insert Table 3 about here]

The effects of economic variables found to be statistically significant are limited to the short run economic performance. Results indicate that, when the same political party controls the national and the local government, the socialists (PS) are more penalized in municipal elections than the social democrats (PSD) for higher unemployment rates.¹⁸ While a 1% increase in the unemployment rate reduces the vote percentage of PS local governments by 0.407%, the effect is half this amount for PSD local governments. Regarding inflation, even though there is a slight distinction between parties, a post estimation Wald test rejected the statistical significance of this difference. These results are in line with Powell and Whitten's (1993) ideological responsibility hypothesis, as the center-left party (PS) tends to be more penalized for increases in unemployment than the center-right party (PSD).

Regional and local economic indicators are included in the estimations of Table 4. We use measures by NUTS III region and by municipality. Due to the lack of data for

¹⁸ A Wald test confirms the statistical significance of this difference.

regional and municipal indicators our sample period is shortened, starting in the 1993 election for most variables¹⁹.

[Insert Table 4 about here]

The economy at NUTS III level is not directly under the control of a single local government, being an intermediate stage between the local and national environments. Nevertheless, the NUTS III per capita GDP (measured in thousands of euros) is statistically significant, and the result is supportive of the traditional responsibility hypothesis. With municipal-level indicators, effects of economic variables are also weak. The only statistically significant municipal economic variable is the growth of municipal wages, for the case where responsibility is most clearly inferred (local and national majority governments of the same party). In other cases where voters have difficulty in sorting out which party should be held responsible, the lack of effects is a plausible result.

We also tested the hypothesis of partisan effects with the economic variables used in Table 4, but all the interactions proved to be statistically insignificant, failing to support a finding of any partisan effects at the regional level. In order to economize space, we chose not to report these results, which are available from the authors upon request.

6. Cross-Section empirical results for the unemployment rate

This section uses a different dataset in order to test for the effects of *freguesia* and municipal level unemployment rates. We made two changes to the model used in the previous section. First, the population category variable by municipality was replaced by

¹⁹ Due to the loss of time variability and observations when using local economic variables we didn't test for changes over term.

a dummy variable (*Urban Areas*) which takes the value of one for the *freguesias* that are mainly urban areas, and zero otherwise. Second, due to potential problems of endogeneity,²⁰ the effective number of parties was replaced by a dummy variable accounting for municipalities where non party organizations present electoral lists (*Non party list*).

Due to the cross sectional nature of the data, albeit is no possible to distinguish between partisan and responsibility effects. In 2001, the ruling national party was PS, so the interaction dummies refer to the simultaneous governance of the center-left. We do not test for clarity effects because the lack of time variability created multicollinearity problems between the interaction dummies.

We use three alternative estimation methods that try to solve the typical problem of heteroscedasticity found in cross section analysis²¹. The first is the standard OLS regression with robust standard errors. The second is the weighted least squares (WLS) method proposed by Madalla (1983) that identifies the heteroscedastic process and proposes a logistic transformation to the dependent variable²². This method takes into account the differences in population between *freguesias*, thus reporting more efficient estimators than OLS. In the third method, after the WLS, we use a Feasible Generalized Least Square (FGLS)²³ in order to control for other unknown factors that may be causing

²⁰ As mentioned above, the effective number of parties was treated as an endogenous variable in the System-GMM estimations. As the estimation methods used in this section do not account for endogeneity, we preferred to replace that variable by an alternative that does not suffer from potential endogeneity problems.

²¹ It is necessary to account for heteroscedasticity because both the Breusch-Pagan and the White tests rejected the homoscedasticity assumption in our model.

²² $VG = \log(VG_i / (1 - VG_i))$. See Dubin and Kaslow (1996) for an application of this method.

²³ Starting with the estimated logistic model, we correct for other potential sources of heteroscedasticity using the feasible generalized least square method proposed by Wooldridge (2003).

heteroscedasticity. These last two methods are less vulnerable to heteroscedasticity than OLS.

The estimation results, shown in Table 5, are consistent with the panel data findings regarding the effects of economic and non economic variables. There is strong evidence that local authorities affiliated with the central government are held more accountable for high *freguesia* and municipal unemployment rates than those unaffiliated. Although the results confirm the political accountability hypothesis, municipal unemployment also has a negative impact on governments without political ties to the ruling national party, an effect we lose in the *freguesia* regressions when controlling heteroscedasticity more effectively (when using WLS/FGLS). This indicates the presence of the traditional responsibility mechanism when the unemployment aggregation level corresponds to the local authority's jurisdiction. These different results may also be related to the fact that a significant portion of the electorate is not likely to vote and work in the same *freguesia*, a scenario more likely to occur when we think in terms of municipalities. Overall, the analysis of the 2001 municipal elections confirms the importance of the local unemployment rate in the Portuguese government's vote function.

[Insert Table 5 about here]

7. Conclusion

The main objective of this paper was to investigate the economic determinants of local electoral results in Portugal. We found that both national and regional economic conditions influence electoral outcomes. Our results are consistent with the responsibility hypothesis and are in line with previous findings for Portuguese legislative elections.

Even though local authorities have little control over the national economic environment, our results show that there is a mechanism of political accountability present at municipal elections. When the same party governs at national and local levels, the local governments are punished when the national unemployment increases, and are more affected by inflation than the local governments which are not affiliated with the national government party. Nevertheless, our data suggests that the latter are affected by inflation changes, a result that might be related to effects on national inflation observed through prices charged for the provision of local public goods. Finally, we find support for the proposition that government ideology affects the relationship between national unemployment rates and election outcomes. Concretely, the empirical results support Powell and Whitten's (1993) hypothesis that governments are held more accountable for the economic variables that they care about the most. That is, when the same political party controls the national and the local governments, the socialists (PS – center-left) are more penalized in municipal elections than the social democrats (PSD – center-right) for higher unemployment rates.

Portuguese local governments have been assuming greater and greater responsibilities in the areas of economic policy and provision of public goods. Because local governments are closer to their population and more aware of local problems than the national government, this decentralization process can generate a more efficient allocation of resources.

Among subnational economic variables, we find that only municipal wages seem to influence votes in local elections, strictly in situations where municipal and national governments belong to the same party and are both in a majority position. These results

show that the clarity of responsibility is important for economic voting when evaluating economic performance at the regional level.

Finally, the results obtained when using of cross sectional data clearly indicate that the local unemployment rate affects electoral outcomes. Local governments are held accountable for local unemployment rates, and the effect is stronger for governments politically tied to the national incumbent, confirming the importance of controlling for simultaneous governance when analyzing economic voting in local elections.

References

- Aidt, T. F. Veiga and L. Veiga (2010). "Election results and opportunistic policies: A new test of the rational political business cycle model." *Public Choice*, forthcoming.
- Anderson, C. (2006). "Economic Voting and Multilevel Governance: A comparative Individual-Level Analysis." *American Journal of Political Science* 50(2), 449-63.
- Arellano, M. and S. Bond (1991). "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations." *The Review of Economic Studies* 58, 277-297.
- Atkeson, L. and R. Partin (1995). "Economic and Referendum Voting: A Comparison and Gubernatorial and Senatorial Elections." *American Political Science Review* 89(1), 99-107.
- Auberger, A. and E. Dubois (2005). "The Influence of Local and National Economic Conditions on French Legislative Elections." *Public Choice* 125, 363-383.
- Baltagi, B.H. (2008). *Econometric Analysis of Panel Data*, 4th edition. Chichester, UK: John Wiley & Sons.
- Belanger, E. and F. Gélinau (2005). "Electoral Accountability in a Federal System: National and Provincial Economic Voting in Canada." *Publius* 35(3), 407-424.
- Blundel, R. and S. Bond (1998). "Initial Conditions and Moments Restrictions in Dynamic Panel Data Models." *Journal of Econometrics* 87, 11-143.
- Carsey, T. and G. Wright (1998). "State and National Factors in Gubernatorial and Senatorial Elections." *American Journal of Political Science* 42(3), 994-1002.

- Dubin, J. and G. Kaslow (1996). "Comparing Absentee and Precinct Voters: A View Over Time." *Political Behavior* 18(4), 369-92.
- Eisenberg, D. and J. Ketcham (2004). "Economic Voting in U.S. Presidential Elections: Who Blames Whom for What." *Topics in Economic Analysis & Policy* 4(1), 1-23.
- Hansen, S. (1999). "Life is not Fair": Governors' Job Performance Ratings and State Economies." *Political Research Quarterly* 52(1), 205-36.
- Holbrook, T. M. (1991). "Presidential Elections in Space and Time." *American Journal of Political Science* 35, 91-109.
- Jonhston, R. and C. Pattie (2001). "It's the Economy Stupid- But Which Economy? Geographical Scales, Retrospective Economic Evaluations and Voting at the 1997 British General Election." *Regional Studies* 35, 309-19.
- Kone, S. and R. Winters (1993). "Taxes and Voting: Electoral Retribution in the American States." *Journal of Politics* 55(1), 22-40.
- Laakso, M. and R. Taagepera (1979). "The effective number of parties: A measure with application to Western Europe." *Comparative Political Studies* 12(1), 3-27.
- Maddala, G. (1983). *Limited Dependent and Qualitative Variables in Econometrics*. Cambridge, UK: Cambridge University Press.
- Mueller, J.E. (1970). "Presidential popularity from Truman to Johnson." *American Political Science Review* 64, 18-23.
- Niemi, R., H. Stanley, and R. Vogel (1995). "State Economies and State Taxes: Do Voters Hold Governors Accountable?" *American Journal of Political Science* 39(4), 936-57.

- Peltzman, S. (1987). "Economic Conditions and Gubernatorial Elections." *American Economic Review* 77(2), 293-97.
- Powell, G. and G. Whitten (1993). "A Cross-national Analysis of Economic Voting: Taking Account of the Political Context." *American Journal of Political Science* 37, 391-414.
- Remmer, K. and F. Gélinau (2003). "Subnational Electoral Choice. Economic and Referendum Voting in Argentina 1983-1999." *Comparative Political Studies*, 36(7), 801-21.
- Swank, O. (1993). "Popularity Functions Based on Partisan Theory." *Public Choice* 75, 339-56.
- Squire, P. and C. Fastnow (1994). "Comparing Gubernatorial and Senatorial Elections." *Political Research Quarterly* 47(3), 705-20.
- Strumpf, K. and J. Phillipe (1999). "Estimating Presidential Elections: The Importance of State Fixed Effects and the Role of National Versus Local Information." *Economics and Politics* 11, 33-50.
- Veiga, F. and L. Veiga (2004). "The Determinants of Vote Intentions in Portugal." *Public Choice* 118(3-4), 341-364.
- Veiga, F. and L. Veiga (2010). "The Impact of Local and National Conditions on Legislative Elections Results." *Applied Economics* 42, 1727-1734.
- Wooldridge, J. (2003). *Introductory Econometrics: A Modern Approach*. Mason, OH: South Western Publishers.

Table 1. Legislative elections and parties in government

Elections	Wining party or coalition	Share in Parliament (%)	Form of Government
1976	PS	43	One party, minority
1979	AD	51	Coalition (AD)
1980	AD	54	Coalition (AD)
1983	PS	40	Coalition (PS+PSD)
1985	PSD	34	One party, minority
1987	PSD	59	One party
1991	PSD	58	One party
1995	PS	48	One party, minority
1999	PS	50	One party, “minority”
2002	PSD	46	Coalition (PSD+CDS/PP)
2005	PS	52	One party

Note: PS- Socialist Party (center left);AD=PSD+CDS/PP+PPM; PSD- Social Democratic Party (center right); CDS/PP- Social Democratic Center/People’s Party (right); PPM- Monarchic Popular Party (right).

Table 2. Simultaneous governance and the national economy: GMM Panel estimates

	Previous year		Changes over term	
	(1)	(2)	(3)	(4)
Votes (previous election)	0.170*** (3.76)	0.152*** (3.31)	0.103** (2.33)	0.101** (2.31)
Unemployment rate	0.252 (1.40)		0.027 (0.90)	
Unemployment rate * Dum(SG)	-0.213*** (-3.33)		0.039 (0.94)	
Unemployment rate * Dum(SMG)	-0.321** (-2.35)		0.082 (0.98)	
Inflation rate		-1.517** (-2.08)		0.006 (0.35)
Inflation rate * Dum(SG)		-0.146*** (-4.78)		-0.038* (-1.66)
Inflation rate * Dum(SMG)		-0.081 (-1.31)		0.045 (0.54)
Effective Number of Parties	-15.076*** (-7.87)	-14.542*** (-7.59)	-14.348*** (-7.07)	-13.828*** (-6.68)
Population	-0.996** (-2.52)	-0.891** (-2.24)	-0.930** (-2.22)	-0.806* (-1.86)
Time in office	-1.101*** (-5.93)	-1.108*** (-6.19)	-0.855*** (-4.79)	-0.830*** (-4.62)
Recand	3.260*** (5.37)	3.310*** (5.43)	3.798*** (5.95)	3.929*** (6.08)
Observations	2091	2091	1849	1849
Municipalities / Instruments	275 / 46	275 / 46	275 / 45	275 / 45
Hansen Test	35.90 [0.290]	33.43 [0.398]	33.81 [0.38]	37.85 [0.22]
AR(1) Test	-7.01 [0.00]	-7.05 [0.00]	-6.96 [0.00]	-7.02 [0.00]
AR(2) Test	1.11 [0.265]	1.05 [0.293]	0.51 [0.611]	0.49 [0.625]

NOTES: Two step results using robust standard errors corrected for finite samples. All estimations include a constant term and a complete set of time-dummies, *** p<0.01, ** p<0.05, * p<0.1. Numbers in parenthesis are t-ratios and those in squared brackets are p-values. All estimations include a complete set of time-dummies.

Table 3. Partisan effects and the national economy: GMM Panel estimates

	Previous year		Changes over term	
	(1)	(2)	(3)	(4)
Votes (previous election)	0.142*** (3.29)	0.135*** (3.10)	0.087** (2.00)	0.093** (2.11)
Unemployment rate	0.257 (1.42)		0.019 (0.65)	
Unemployment rate * Dum(PSD)	-0.206*** (-2.76)		0.066 (1.56)	
Unemployment rate * Dum(PS)	-0.407*** (-4.65)		0.042 (0.82)	
Inflation rate		-1.616** (-2.22)		0.004 (0.22)
Inflation rate * Dum(PSD)		-0.184*** (-4.32)		-0.055 (-1.42)
Inflation rate * Dum(PS)		-0.160*** (-4.41)		-0.028 (-1.17)
Effective Number of Parties	-15.046*** (-8.40)	-14.594*** (-7.62)	-14.216*** (-6.94)	-14.047*** (-6.63)
Population	-0.988** (-2.54)	-0.883** (-2.22)	-0.905** (-2.16)	-0.872** (-2.00)
Time in office	-1.103*** (-5.91)	-1.066*** (-6.03)	-0.825*** (-4.63)	-0.845*** (-4.55)
Recand	3.294*** (5.53)	3.296*** (5.43)	3.831*** (5.99)	3.876*** (5.96)
Observations	2091	2091	1849	1849
Municipalities / Instruments	275 / 46	275 / 46	275 / 45	275 / 45
Hansen Test	33.78 [0.382]	33.30 [0.404]	33.60 [0.390]	38.16 [0.210]
AR(1) Test	-7.16 [0.00]	-7.17 [0.00]	-7.01 [0.00]	-7.03 [0.00]
AR(2) Test	0.97 [0.332]	0.99 [0.324]	0.41 [0.681]	0.671 [0.671]

NOTES: Two step results using robust standard errors corrected for finite samples. All estimations include a constant term and a complete set of time-dummies. *** p<0.01, ** p<0.05, * p<0.1. Numbers in parenthesis are t-ratios and those in squared brackets are p-values.

**Table 4. Simultaneous governance and the Regional economy:
GMM Panel estimates**

	Previous year			
	(1)	(2)	(3)	(4)
Votes (previous election)	0.126*** (4.02)	-0.040 (-0.53)	0.006 (0.051)	0.114*** (3.82)
Per capita GDP (NUTS)	0.294** (2.44)			
Per capita GDP (NUTS)* Dum(SG)	-0.031 (-0.46)			
Per capita GDP (NUTS)* Dum(SMG)	0.017 (0.10)			
Municipal growth rate of wages		0.003 (0.070)		
Municipal growth rate of wages* Dum(SG)		-0.105 (-1.19)		
Municipal growth rate of wages* Dum(SMG)		0.199** (2.25)		
Municipal employment rate			0.044 (1.03)	
Municipal employment rate* Dum(SG)			0.004 (0.16)	
Municipal employment rate* Dum(SMG)			-0.060 (-0.88)	
Municipal Income Index				0.065 (1.03)
Municipal Income Index * Dum(SG)				-0.069 (-0.99)
Municipal Income Index * Dum(SMG)				0.204 (1.14)
Effective Number of Parties	-16.116*** (-20.4)	-15.467*** (-21.2)	-15.767*** (-20.5)	-15.983*** (-19.5)
Population	-1.029*** (-2.63)	-1.121*** (-3.15)	-0.878* (-1.90)	-1.037*** (-2.64)
Time in office	-0.676*** (-5.19)	-0.430* (-1.95)	-0.573 (-1.60)	-0.661*** (-4.92)
Recand	4.229*** (6.58)	4.061*** (6.96)	3.892*** (6.91)	4.030*** (6.40)
Observations	1091	1363	1363	1091
Municipalities / Instruments	275 / 50	275 / 57	275 / 46	275 / 54
Hansen Test	45.30 [0.194]	55.24 [0.12]	34.29 [0.406]	49.81 [0.19]
AR(1) Test	-5.88 [0.00]	-4.86 [0.00]	-4.01 [0.00]	-5.88 [0.00]
AR(2) Test	1.49 [0.136]	-0.08 [0.937]	0.31 [0.756]	1.53 [0.13]

NOTES: Two step results using robust standard errors corrected for finite samples. All estimations include a constant term. *** p<0.01, ** p<0.05, * p<0.1. Numbers in parenthesis are t-ratios and those in squared brackets are p-values.

Table 5. Simultaneous governance and the unemployment: cross section estimates

	<i>Freguesia's unemployment rate</i>			<i>Municipal unemployment rate</i>		
	OLS	WLS	WLS/FGLS	OLS	WLS	WLS/FGLS
	(1)	(2)	(3)	(4)	(5)	(6)
Votes (previous election)	0.3002*** (15.4)	0.0135*** (12.6)	0.02099*** (17.0)	0.3034*** (15.7)	0.0135*** (12.7)	0.0208*** (16.6)
Unemployment rate	0.1909*** (3.67)	0.0045 (1.47)	0.00032 (0.084)	-0.3928*** (-3.89)	-0.0210*** (-3.88)	-0.0243*** (-3.81)
Unemployment rate * Dum(SG)	-0.6180*** (-11.9)	-0.0371*** (-12.0)	-0.03446*** (-9.49)	-0.8239*** (-13.8)	-0.0427*** (-12.9)	-0.0392*** (-10.1)
Urban Areas	-3.5610*** (-7.42)	-0.1572*** (-7.50)	-0.15302*** (-6.97)	-3.8924*** (-8.24)	-0.1536*** (-7.49)	-0.1511*** (-7.02)
Recand	5.5224*** (9.47)	0.1910*** (5.73)	0.16166*** (4.02)	5.3960*** (9.34)	0.1937*** (5.84)	0.1674*** (4.04)
Time in office	-0.5848*** (-6.17)	-0.0341*** (-6.86)	-0.02080*** (-3.35)	-0.6770*** (-7.13)	-0.0366*** (-7.36)	-0.0226*** (-3.57)
Non party list	-6.4143*** (-6.67)	-0.2949*** (-6.88)	-0.40502*** (-7.78)	-7.1182*** (-7.60)	-0.3306*** (-8.36)	-0.4488*** (-9.04)
Observations	3996	3996	3996	3996	3996	3996
Adjusted R2	0.16	0.24	0.33	0.18	0.26	0.36

NOTES: All estimations include a constant term. *** p<0.01, ** p<0.05, * p<0.1. Numbers in parenthesis are t-ratios.

Appendix

Descriptive statistics (Panel data)

Variable	Observ.	Mean	SD	Minimum	Maximum
Votes (% of total)	2462	47.940	11.683	2.924	91.736
National Unemployment rate	2224	6.4509	1.5227	4.08	8.86
National Inflation rate	2224	12.372	9.5472	2.364	28.881
Per capita GDP (NUTS III) (thousands of euros)	1112	8.652	2.7036	4.2840	19.985
Municipal growth rate of wages	1381	2.6043	6.0014	-26.033	74.579
Municipal employment rate*	1381	16.306	9.7089	1.1319	87.229
Municipal Income Index**	1103	3.6264	11.819	0.19	190.79
Dum(SG)	2223	0.4215	0.493	0	1
Dum(SMG)	2223	0.1187	0.323	0	1
Dum(PS)	2221	0.2395	0.426	0	1
Dum(PSD)	2221	0.2854	0.451	0	1
Effective Number of Parties	2206	2.6549	0.512	1.1862	4.687
Population	2224	3.0566	0.744	1	4
Time in office	2203	2.801634	1.918209	1	8
Recand	2115	0.801891	0.398669	0	1

* The employment rate in each municipality is calculated dividing its number of employees by its total population.

** The index's base is the national average (equal to 100).

Descriptive statistics (Cross-sectional data)

Variable	Observ.	Mean	SD	Minimum	Maximum
Votes (% of total)	4000	51.913	15.074	1.71	96.55
<i>Freguesia's</i> Unemployment rate	4037	7.007	4.8313	0	38.3
Municipal Unemployment rate	4037	6.836	2.1945	2.5	22.1
Dum(SG)	4037	0.482	0.4997	0	1
Urban Areas	4037	0.239	0.4265	0	1
Recand	4015	0.853	0.3538	0	1
Time in office	4015	3.818	2.283	1	7
Non party list	4035	0.109	0.3117	0	1

Most Recent Working Paper

NIPE WP 33/2010	Martins, Rodrigo. e Francisco José Veiga , “ Economic Voting in Portuguese Municipal Elections ”, 2010
NIPE WP 32/2010	Gabriel, Vasco J. e Pataaree Sangduan , “An Efficient Test of Fiscal Sustainability”, 2010
NIPE WP 31/2010	Batini, Nicoletta, Vasco J. Gabriel, Paul Levine e Joseph Pearlman , “A Floating versus Managed Exchange Rate Regime in a DSGE Model of India”, 2010
NIPE WP 30/2010	Gabriel, Vasco J. e Luis F. Martins , “The cost channel reconsidered: a comment using an identification-robust approach”, 2010
NIPE WP 29/2010	Gabriel, Vasco J., Paul Levine, Joseph Pearlman e Bo Yang , “An Estimated DSGE Model of the Indian Economy”, 2010
NIPE WP 28/2010	Gabriel, Vasco J. e Luis F. Martins , “Cointegration Tests Under Multiple Regime Shifts: An Application to the Stock Price-Dividend Relationship”, 2010
NIPE WP 27/2010	Nogueira, Carlos Gama e Linda Gonçalves Veiga , “ Economic determinants of citizens’ support for the European Union”, 2010
NIPE WP 26/2010	Castro, Vitor e Ricardo M. Sousa , "How Do Central Banks React to Wealth Composition and Asset Prices?", 2010
NIPE WP 25/2010	Agnello, Luca e Ricardo M. Sousa , "Fiscal Policy and Asset Prices", 2010
NIPE WP 24/2010	Castro, V. , “The duration of business cycle expansions and contractions: Are there change-points in duration dependence?”, 2010
NIPE WP 23/2010	Aguiar-Conraria e Maria Joana Soares , “The Continuous Wavelet Transform: A Primer*”, 2010
NIPE WP 22/2010	Alexandre, Fernando, Pedro Bação, João Cerejeira e Miguel Portela , “Manufacturing employment and exchange rates in the Portuguese economy: the role of openness, technology and labour market rigidity”, 2010
NIPE WP 21/2010	Aguiar-Conraria, Luís, Manuel M. F. Martins e Maria Joana Soares , “The yield curve and the macro-economy across time and frequencies”, 2010
NIPE WP 20/2010	Kurt Richard Brekke, Tor Helge Holmås e Odd Rune Straume , “Margins and Market Shares: Pharmacy Incentives for Generic Substitution”, 2010
NIPE WP 19/2010	Afonso, Óscar, Pedro Neves e Maria Thompson , “Costly Investment, Complementarities, International Technological-Knowledge Diffusion and the Skill Premium”, 2010
NIPE WP 18/2010	Mourão, Paulo e Linda G. Veiga , "Elections, Fiscal Policy and Fiscal Illusion", 2010
NIPE WP 17/2010	Conraria, Luís A., Pedro C. Magalhães, Maria Joana Soares , "Synchronism in Electoral Cycles: How United are the United States? ", 2010
NIPE WP 16/2010	Figueiredo, Adelaide, Fernanda Figueiredo, Natália Monteiro e Odd Rune Straume , "Restructuring in privatised firms: a Statis approach", 2010
NIPE WP 15/2010	Sousa, Ricardo M. , “Collateralizable Wealth, Asset Returns, and Systemic Risk: International Evidence”, 2010
NIPE WP 14/2010	Sousa, Ricardo M. , “How do Consumption and Asset Returns React to Wealth Shocks? Evidence from the U.S. and the U.K”, 2010
NIPE WP 13/2010	Monteiro, Natália., Miguel Portela e Odd Rune Straume , "Firm ownership and rent sharing", 2010
NIPE WP 12/2010	Afonso, Oscar, Sara Monteiro e Maria Thompson. , "A Growth Model for the Quadruple Helix Innovation Theory ", 2010
NIPE WP 11/2010	Veiga, Linda G. , "Determinants of the assignment of E.U. funds to Portuguese municipalities", 2010
NIPE WP 10/2010	Sousa, Ricardo M. , "Time-Varying Expected Returns: Evidence from the U.S. and the U.K", 2010
NIPE WP 9/2010	Sousa, Ricardo M. , "The consumption-wealth ratio and asset returns: The Euro Area, the UK and the US", 2010
NIPE WP 8/2010	Bastos, Paulo, e Odd Rune Straume , "Globalization, product differentiation and wage inequality", 2010

NIPE WP 7/2010	Veiga, Linda, e Francisco José Veiga , “Intergovernmental fiscal transfers as pork barrel”, 2010
NIPE WP 6/2010	Rui Nuno Baleiras , “Que mudanças na Política de Coesão para o horizonte 2020?”, 2010
NIPE WP 5/2010	Aisen, Ari, e Francisco José Veiga , “How does political instability affect economic growth?”, 2010
NIPE WP 4/2010	Sá, Carla, Diana Amado Tavares, Elsa Justino, Alberto Amaral , "Higher education (related) choices in Portugal: joint decisions on institution type and leaving home", 2010
NIPE WP 3/2010	Esteves, Rosa-Branca , “Price Discrimination with Private and Imperfect Information ”, 2010
NIPE WP 2/2010	Alexandre, Fernando, Pedro Bação, João Cerejeira e Miguel Portela , “Employment, exchange rates and labour market rigidity”, 2010
NIPE WP 1/2010	Aguiar-Contraria, Luís, Pedro C. Magalhães e Maria Joana Soares , “On Waves in War and Elections - Wavelet Analysis of Political Time-Series”, 2010