THE COMPOSITION OF PUBLIC SPENDING
AND THE NATIONALIZATION OF PARTY
SYSTEMS IN WESTERN EUROPE

Autores: Ignacio Lago-Peñas (1)
Santiago Lago-Peñas (2)

P. T. N.º 8/06

(1) Pompeu Fabra University. Department of Social and Political Sciences, Barcelona, Spain. ignacio.lago@upf.edu

(2) (Contact Address). University of Vigo. Department of Applied Economics, Campus universitario, 32004 Ourense, Spain. slagop@uvigo.es

N.B.: Las opiniones expresadas en este trabajo son de la exclusiva responsabilidad de los autores, pudiendo no coincidir con las del Instituto de Estudios Fiscales.

ÍNDICE

1. INTRODUCTION
2. THEORETICAL ARGUMENTS
3. INCENTIVES FOR THE NATIONALIZATION OF PARTY SYSTEMS
4. THE COMPOSITION OF PUBLIC SPENDING AND THE NATIONALIZATION OF PARTY SYSTEMS
5. CONCLUSIONS AND EXTENSIONS
REFERENCES

SÍNTESIS. Principales implicaciones de política económica
ABSTRACT

Do political institutions shape the structure of public spending? Based on a sample of 141 elections in eighteen Western European countries over the period 1970-1998, this paper shows that governments’ margin of maneuverability to design and implement fiscal policies depends on the level of party linkage or the nationalization of party systems, defined as the extent to which parties are uniformly successful in winning votes across districts. The mechanism behind this argument is that in weakly nationalized countries there are additional transaction costs to change the budget as a consequence of the survival of local parties and interests. Therefore, the composition of public spending is more rigid here than in highly nationalized countries.

Key words: Electoral system, fiscal policy, linkage, nationalization, party system, public good, transaction costs, transfers.
1. INTRODUCTION

Although undervalued for decades as a consequence of the hegemony of Keynesian short-run policies based on demand impulses, the composition of public spending plays a crucial role nowadays. Several strands of economic literature reflects this change. Since the early nineties the theoretical and empirical literature on long-run economic growth has paid an increasing attention to the effects of the composition of government expenditures in both neoclassical models and endogenous models of economic growth (Barro, 1990; Easterly and Rebelo, 1993; Devarajan, Swaroop, and Zou, 1996; Tanzi and Zee, 1997). Moreover, since the seminal work by Aschauer (1989), the relationship between public investment and productivity and growth has been exhaustively analyzed using different methodologies.

Given the aforementioned empirical and theoretical relevance of the composition of public expenditure, two questions are key. First, does it differ across countries? Sanz and Velázquez (2001) answer this question in the case of the OECD countries over the period 1970-1998. According to their analysis on the convergence in government expenditure, there is a different steady-state for each country, involving permanent differences in the long term. Second, which are the determinants of the composition of public spending? Standard economic approaches are usually based on the median voter’s model and on variables like per capita income, public/private sector price ratio, the unemployment rate, total population, population density, population structure by age, or social inequality (Tridimas, 2001; Sanz and Velázquez, 2002). However, although insightful, economic variables are not enough to fully statistically account for this dependent variable (Sanz and Velázquez, 2002).

Research on political economy has recently begun to examine how political institutions explain national differences in fiscal policy choices. For instance, Arze et al (2005) show that fiscal decentralization increases the share of education and health expenditures in total government expenditures. Fiscal decentralization induces agents to demand increased production of publicly provided private good as opposed to pure public goods because of a better match between public choices and individual preferences.

---

1 The Instituto de Estudios Fiscales (www.ief.es) provided financial support for the project from which this article is drawn.
2 Among others, the use of VAR models (Otto and Voss, 1996), the estimation of parameters of aggregate production functions (García-Mílà et al, 1996), or the estimation of aggregate cost and benefit functions (Morrison and Schwartz, 1996).
3 Arze et al (2005) examine the relationship between fiscal decentralization and the functional composition of public expenditures. Using an unbalanced panel data set spanning 45 developed and developing countries over a period of 28 years, they show that decentralization increases the share of education and health expenditures in total government expenditures, especially
But the lion’s share of this research has been focused on the impact of electoral systems. Electoral rules are crucial in modern democracies. They shape party systems, in particular, district-level or local party systems (Cox, 1997; Duverger, 1954). Moreover, they also matter in issues such as corruption and effectiveness in government service provision (Persson and Tabellini, 2003; 2004; Persson, Tabellini and Trebi, 2003) and the nature of political cycles and macroeconomic policy (Alesina et al 1999; Persson, et al, 2004). And recent literature on fiscal policy has attributed a decisive impact to electoral systems on the size and composition of public spending.

There are, at least, two different theoretical approaches in the literature. On the one hand, Persson and Tabellini (1999, 2000, 2002) and Lizzeri and Persico (2001) defend that majoritarian systems are associated with higher targetable spending and lower “universal” expenditure. Majoritarian —as opposed to proportional— elections increase competition between parties by focusing it into some key marginal districts. Typically, these districts consists of more mobile voters, who can be more easily swayed by electoral promises. Hence, electoral competition is stiffer under majoritarian elections, as politicians try to please “swing voters” in the marginal districts, rather than swing voters in the population as a whole. This leads to more targeted redistribution, at the expense of public good provision.

On the other hand, Milesi-Ferreti et al (2000, 2002) and Scartascini and Crain (2001) defend that proportional systems are more geared to spending on transfers, with a limited scope for targeting them geographically, while majoritarian systems are more prone to purchases of goods and services, typically targeted along geographical lines. The underlying causal mechanism rests on the notion that proportional systems allow representation of a greater variety on interests. In a majoritarian system, where each district elects one representative, all representatives belong to the same social group. Hence, all elected representatives derive utility from the same type of transfers, but each derives utility from a different direct expenditure program. It follows that electors will have an incentive to vote for individuals with stronger preferences for direct expenditure relative to transfers, in order to bias government expenditure on public goods towards their district. In a proportional system, where each district elects more than one representative, more than one social group is represented in Parliament, and now each representative derives utility from a different type of transfer. Individuals have an incentive to vote for representatives with stronger preference for transfers, in order to bias the spending decisions of the government towards their own type of transfers.

in developing countries. Previous papers by Gerdtham et al (1994) and Falch and Rattso (1997) also analyzed this relationship.

A comprehensive survey of the literature can be found in Persson and Tabellini (2000, 2002).
In this paper we show that the focus should be on the degree of nationalization of party systems rather than on electoral systems when analyzing the governments’ margin of maneuverability to design and implement fiscal policies. The nationalization of party systems depends on the processes through the highly localized and territorialized politics is replaced by national electoral alignments and oppositions: programs and policies become national in scope and cancel out or at least reduce the scope of local problems, with the most relevant issues being transferred from the local to the national level (Caramani, 2004: 1). Cox (1999) calls this process linkage, and Chhibber and Kollman (1998, 2004) party aggregation: it can be defined as the extent to which parties are uniformly successful in winning votes across districts (Moenius and Kasuya, 2004: 543).

And there are no clear theoretical reasons to expect that electoral systems features such as district magnitude affect the size of national party systems. It depends on the incentives for candidates and politicians to coalesce around the same labels as politicians from different regions who have different ideologies and have different loyalties to previous and current government policies and leaders (Chhibber and Kollman, 2004: 20).

The second aim of this paper is to reveal the mechanism relating linkage and the composition of public expenditure. Two possibilities are explored: the relationship between the degree of linkage and the share of transfers to families on total budget; and the effect of linkage on the rigidity of the composition of public expenditure. In highly nationalized party systems, local or regional parties (and interests) virtually disappear from national politics. However, when there is a poor linkage, local or regional parties are independent and relevant actors in national politics. Since budgets are multilateral bargaining, the survival of subnational parties introduces additional transaction costs of change. While it is well known that choices on public budgets are subject to a strong inertia, we analyze whether weakly nationalized party systems tend to produce higher levels of rigidity.

To test these all those arguments we use a new political and economic data set on 141 elections in eighteen Western European countries over the period 1970-1998. The countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.

The plan of the paper is as follows. The next section presents our argument about the influence of the formation of national party systems on public spending and discusses the shortcomings of the literature we have sketched. Section 3 explains the incentives for the nationalization of party systems and

---

5 See the seminal contribution by Davis et al (1966).
tests the specific hypotheses generated by our model with cross-country data. Section 4 examines the impact of the nationalization of party systems on the composition of public spending. Section 5 concludes.

2. THEORETICAL ARGUMENTS

Budget process may be seen as a set of both formal and informal rules aiming at solving conflicts involving citizens, interest groups, politicians, bureaucrats, and ministers (Von Hagen and Harden, 1994; Gonzalez-Paramo, 2001). This view of budgets as the result of bargaining has two implications. First, budgets and, in particular, the composition of public expenditure are subject to transaction costs or, more specifically, bargaining costs. Bargaining costs are interpreted expansively to include all the costs associated with multilateral bargaining, competitive bidding, and other voluntary mechanisms for determining a mutually acceptable agreement (Milgrom and Roberts, 1990). This sort of transactions is incurred within budgets (or institutions, in general) whenever some individuals bargain with or act to influence the holder of a jurisdiction or whenever any group of actors attempts to purchase some property right valuable to them (Alt and Alesina, 1996: 649). Second, once a budget has been implemented, it generates constituencies of support in government, business and even the public and becomes difficult to dislodge or improve. Therefore, in terms of institutional robustness, the transaction costs of change provide a budget with something of a cushion, giving it a stability it might not otherwise enjoy in a transactions-cost-free world. In sum, understanding incrementalism in budgeting should pay attention not only to conventional wisdom on the extreme complexity of calculations required to revise every spending programs, confronting to all potential alternatives (Davis et al, 1964), but also to the literature on transaction costs.

Consequently, given this strong inertia in the composition of public expenditure, our argument is that political institutions matter when they modify transaction costs. As we demonstrate in the following pages, there are no reasons to expect that electoral systems significantly affect transaction costs. The institutional arrangement than alters the incidence of transactions costs is the degree of nationalization of party systems. When local interests survive in a party system as a consequence of a poor linkage, local or regional parties are relevant actors in national politics. Hence, in weakly nationalized party systems, transaction costs of change are potentially higher than in highly nationalized party systems. In other words, politicians should enjoy a higher rigidity or a lower margin of maneuverability to change the composition of public spending in the former case.
In this sense, the impact of the degree of nationalization of party systems on the composition of public expenditure has to be distinguished from the impact of the fragmentation of party systems or legislatures. In highly nationalized party systems, where only national parties exist, and independently of their number, the bargaining of budgets takes place in a unidimensional space, specifically the left-right schema. More parties means an increase in the bargaining costs, but all of them are located in the same space. According to the Black’s median voters theorem (Black, 1958), if legislators of a group who must solve a problem of budgeting have single-peaked preferences, then the ideal point of the median voter has an empty winset: there is no other alternative that any of the majority coalitions prefers to this point.

On the contrary, in weakly nationalized party systems, where subnational parties do not disappear from national politics, a second dimension comes into play: local and regional interests. The set of outcomes, or simply the “policy space” is two-dimensional, and this is the domain over which preferences are expressed. According to the McKelvey’s chaos theorem (McKelvey, 1976), in multidimensional spatial settings, except in the case of a rare distribution of ideal points that hardly ever occurs naturally, there will be no majority rule empty-winset point. Instead there will be chaos —no Condorcet winner, anything can happen, and whoever controls the order of voting can determine the final outcome6.

Since multidimensional bargaining or models are inherently more complex than unidimensional ones, budgets are subject to higher transaction costs in countries with a poor party linkage: the composition of public expenditure tends to be more difficult to change there. And highly fragmented legislatures are not necessarily weakly nationalized party systems. The effective number of electoral parties in Denmark, for instance, is above the mean in our sample of countries, but its degree of party linkage is clearly below the mean sample. But, obviously, although they are conceptually different, the correlation between these two variables is high.

The formation of a national party system in a country takes place in two consecutive and independent moments. The first one concerns how many parties there are at the local or district level. Voters cast their votes and the local or district-level party system is formed in each district of a country. The prequel to our story is the received wisdom within electoral studies that district magnitude is a major variable, if not the primary one, that determines how an electoral system affects party competition.

Electoral systems affect the coordination of political forces within districts when candidates or parties enter the race and voters distribute their votes among them. If the prospective competitors in a district are all primarily

---

6 See Shepsle and Bonchek (1991: chapter 5) for a formal exposition of this result. Their analysis is focused precisely on a problem of budgeting.
interested in winning a seat in the election at hand, and they will not enter if their chances are not good enough, then electoral coordination may end at the elite level. However, when some minor-party or independent candidates enter regardless of their chances at winning, then voters may be faced with the incentives to vote strategically. The general finding is embodied in the $M+1$ rule—$M$ is the number of seats allocated in an electoral district—, which says that, under some conditions, strategic voting will reduce contests with more than $M+1$ candidates or parties to contests in which at most $M+1$ competitors are seriously in the running for seats (Cox, 1997, 1999). Accordingly, the number of parties or candidates entering the race is a positive function of district magnitude: all else equal, the number of parties running in a district will tend to decrease (increase) as $M$ decreases (increases). Social cleavages are free to determine the number of competitors below this upper bound. Thus, systems may have few parties because there are few cleavages or because the upper bound is low; but systems should have many parties only when there are many cleavages combined with a permissive electoral system (e.g., Amorim Neto and Cox, 1997; Chhibber and Kollman, 2004: chapter 2; Cox, 1997; Jones, 1993; Lijphart, 1994; Ordeshook and Shvetsova, 1994; Rae, 1971; Riker, 1982; Taagepera and Shugart, 1989).

The second moment in the process of creating a national party system is linking the members of the various local party systems into national parties: votes received in various districts are aggregated nationwide. This process, that Cox (1997) has called linkage and Chhibber and Kollman (1998, 2004) party aggregation, can be defined according to Moenius and Kasuya (2004: 543) as the extent to which parties are uniformly successful in winning votes across districts. Although electoral rules directly affect district-level party systems, as we have seen, there is no clear theoretical reason to expect them to affect linkage or party aggregation, hence less reason to expect them to affect the size of the national party system (Cox, 1999: 156). Except in those few cases in which the country makes up a single electoral district, whether national party systems mirror local party systems is entirely another matter. Regardless of electoral rules, it depends on the degree to which candidates and parties make linkages across districts to establish larger political groupings or organizations based on common party labels (Chhibber and Kollman, 2004: 19).

The local argument or electoral coordination at the district-level does only provide a very vague upper bound on the number of parties nationally. According to Cox (1997: 186), a system with nothing but single-member plurality elections should have no more than $2D$ parties, where $D$ is the number of districts. United Kingdom, for example, has 646 single-member, simple-plurality districts. The number of parties should be no more than $2*646 = 1292$. Similarly, a system with nothing but $M$-seat PR elections should have no more than $(M+1)D$ parties, where $M$ is the number of seats allocated in an electoral district. The Netherlands, for instance, uses 1 one hundred fifty-member
district and awards seats to lists by the d’Hondt method of proportional representation. The number of parties should be no more than \((150 + 1) \times 1 = 151\).

This upper bound on the number of parties nationally sets linkage at its lowest extreme. Each party in a country fields candidates in just one district, so that every local party system is sui generis. In other words, each district has an entirely different set of parties and there is no overlap of parties’ district-level vote shares when votes are aggregated at the national level. In this case, the national party system is considerably larger than the average of the local party systems. At the opposite extreme, when there is the highest linkage, every party runs candidates in every district, so that every local party system is a microcosm of the national party system. Therefore, the set of parties running in each districts is identical, and each party receives the same proportion of votes across districts. In this case, the number of parties in the national party system nearly equals the average number in the local systems (Cox, 1999: 155; Moenius and Kasuya, 2004: 545).

In accounting for the number of parties nationally or for changes over time within countries, that is, the degree of party linkage or nationalization, explanations based solely on the electoral systems are strained. For example, the United States, Canada, India and Great Britain have single-member and simple-plurality electoral rules to award seats to lower houses of parliament, However, there are significant differences across the countries in the number of parties nationally and over time. In the United States, the number of national parties stabilized around two only after the New Deal. In Canada the effective number of parties getting votes in national elections was 3.5 in the first national elections held in 1867. In 1917 only 2 parties competed in elections for the lower house, whereas in 1995 the effective number of parties getting votes was approximately 4. In India the number of parties competing in national elections also has fluctuated, although there has been a steady increase since the 1970s with the effective number of parties rising for 3 in 1977 to almost 7 for the 1996 and 1999 elections. Finally, in Britain the effective number of parties receiving votes in 1885 was 2.17, increasing to 4.43 in 1918, and then settling to about 2.5 for much of postwar period before rising above 3 in the 1990s (Chhibber and Kollman, 2004: chapter 1). Obviously, the same electoral system cannot generate by itself different party systems or the same population diversity cannot be translated into a so divergent number of parties over time within each country.

Similarly, a lot of PR systems with multimember districts (Colombia, Costa Rica, El Salvador, Greece, Malta, Mauritius or even Austria, where the mean district magnitude is 13) have a lower effective number of parties getting votes in national elections than Canada, Great Britain and India (Cox, 1997: Appendix C). Again, one can only conclude that electoral systems are not the key variable to explain the number of parties nationally.
Given the two moments in the process of creating a national party system, we hypothesize that which type of fiscal policy prevails in each country and, more specifically, the rigidity in the composition of public spending does not depend on the electoral system, but on the persistence (and strength) of local parties (and subnational interests) in the process of national-level party system formation. That is, on the degree of linkage or nationalization of national party systems.

As Milesi-Ferreti et al (2002: 609) emphasize, decisions on fiscal policy entails a trade-off between allegiance to a social constituency and allegiance to a geographic constituency. Each one crystallizes in a different type of government spending: transfers and purchases of goods and services. The former are mostly targeted to groups of individuals with certain characteristics, such as the unemployed or the elderly, while the latter instead are typically targeted along geographical lines. On the one hand, in those countries in which there is a high linkage, and thus the national-level party system perfectly mirrors the party system of each district (or region), local or regional parties (and interests) virtually disappear from national politics. Politicians feel it necessary to join parties that link districts across the entire country or across a very wide range of the ideological space, while voters have incentives to abandon local parties to support nationally competitive parties. Hence, elected representatives derive utility from the same public goods, but they derive utility from a different type of transfer. This implies that national viewpoints prevail over local ones. And we cannot forget that transfers and purchases of goods are services are independent of the region of residence of those citizens who meet the criteria for that transfer (Milesi-Ferreti et al, 2002: 612). Therefore, highly nationalized party systems should be more geared to spending on transfers.

On the other hand, in those countries in which there is a poor linkage, and thus the national-level party system does not mirror the party system of each district (or region), local or regional parties are independent and relevant actors in national politics. Politicians feel it necessary to join parties that represent only their particular district or region or particular narrow slice of the ideological space, while voters have incentives to support local parties. Hence, elected politicians representing subnational parties derive now utility from a different public good than elected politicians representing national parties. This implies that, at least for local or regional parties, local viewpoints prevail over national ones. As Milesi-Ferreti et al (2002: 612) point out, spending on goods and services is local in interest. And obviously, the higher the fragmentation of the national party system, the higher the relevance of subnational parties in national politics and then the higher the impact of local interests. Therefore, poor nationalized party systems should be more prone to direct public expenditure.
The empirical predictions derived from our theoretical argument are different to those advocated by the literature, in particular by Persson and Tabellini (1999, 2000, 2002), on the one hand, and Milesi-Ferreti et al (2002), on the other. Two countries with the same electoral system, majoritarian or proportional, might have a different composition and/or rigidity of public expenditure. Similarly, two countries with a different electoral system might have the same or almost the same composition and/or rigidity of public expenditure. These notable differences between the empirical predictions of our argument and the literature are explained by the absence of a robust causal mechanism linking electoral systems and public expenditure. The process of linking the members of the various local party systems into national parties is analysed in the formal models of Milesi-Ferreti et al (2002) or Persson and Tabellini (1999, 2000, 2002). They explain the size and composition of government expenditure as the result of a two-stage game. First, how many parties are at the district level as a consequence of the permissiveness of electoral systems and, second, how the governments are formed and their decisions taken. But, (a) they assume that in majoritarian electoral systems the geographic distribution of different social groups is similar across districts (Milesi-Ferreti et al at 2002: 610 or Persson and Tabellini, 1999: 711, 2000: 210; 2002: 638) and then that the winners of the seats are the same everywhere. And (b) they assume that on proportional electoral systems the whole country makes up a single electoral district (Milesi-Ferreti et al, 2002: 613 or Persson and Tabellini, 1999: 708). Both assumptions are empirically flawed. In majoritarian electoral systems, the uniform distribution of social groups is more an exception than a regularity. The case of Canada is enlightening. In proportional electoral systems, Israel, Namibia and The Netherlands are the only three cases in the world in which the country makes up a single electoral district (Cox, 1997: chapter 3).

Therefore, electoral coordination at the district-level in these models provides a very precise upper bound on the number of parties nationally. A system with nothing but single-member plurality elections should have no more than 2D parties, where D is the number of districts. But since local party systems are identical, the upper bound is 2*1 = 2. Similarly, a system with nothing but M-seat PR elections should have no more than (M+1)*1 = M+1. In sum, every local party is a microcosm of the national party system and then party systems have a perfect linkage as the results of nationalization of party organizations. The formation of the national party system in a country takes place in only one moment and, as a consequence, electoral rules directly affect not only district-level party systems, but also the size of the national party system.
3. INCENTIVES FOR THE NATIONALIZATION OF PARTY SYSTEMS

Despite the importance of the coordination of potentially separate local parties and party systems to form a national party system, only recently have scholars begun to pay attention to this issue (Caramani, 2004; Cox, 1997, 1999; Chhibber and Kollman, 1998; 2004; Jones and Mainwaring, 2003; Moenius and Kasuya, 2004).

The incentives for the nationalization of party systems or, in other words, for linking or aggregating the members of the various local party systems into national parties are institutional and sociological. According to Cox (1997, 1999), institutional incentives pertain to economies of scale and have the following abstract form: some group seeks to accomplish a task that requires the help of a large number of legislative candidates; this group therefore seeks to induce would-be legislators from many different districts to participate in a larger organization.

Different versions of linkage or party aggregation emerge as the task is changed. Here we consider two (Cox, 1999: 156-159):

a) **Securing more legislative seats or a better chance at winning the presidency**

On the one hand, electoral laws implementing an upper tier to pool votes that are wasted or excess in a given district typically require an explicit legal coordination. In the German electoral system, for example, compensatory seats are distributed at the national level among those parties that secure at least 5% of the national vote (or win at least three district seats). Thus, upper tiers provide a strong incentive to politicians to ally across district boundaries and to voters to abandon locally competitive but nationally noncompetitive parties or to abandon nationally competitive parties in order to prevent a prospective coalition partner from failing below the critical threshold of votes.

On the other hand, similar incentives for cross-district coordination exist in those countries in which the winning candidate in presidential elections must get specified support levels in the various regions. For example, in Algeria.

b) **Securing the control of the central government**

The efforts for cross-district coordination one is willing to exert in order to control the central government depend on how centralized the power is in a country and to what extent the power is stake all at once electorally. In particular, as national governments exert more political and economic control over local areas candidates have greater incentives to associate themselves with national organizations, and voters have greater incentives to abandon locally
competitive but nationally noncompetitive parties (Chhibber and Kollman, 1998: 329). Thus, party systems become more national as governments centralize authority. Three institutional mechanisms encourage the nationalization of party systems in these terms:

- **The degree of political and economic centralization.** According to the empirical evidence provided by Chhibber and Kollman (1998, 2004) for Canada, Great Britain, India and the United States, the relative authority of national and subnational governments in a country helps to determine the success or failure of regional and minor parties and, therefore, the formation of a national party system. The basic argument is straightforward. Voters are more likely to support national political parties as the national government becomes more important for their lives. As this happens, candidates also are more likely to forsake local parties and assume the labels of national parties. These two effects are specially true in federal states where there can be a real back-and-forth between the authority of states and provinces and the national government. Thus, one expects a better linkage in states that are more unitary and worse linkage in states that are more federal.

- **Bicameralism.** Similarly, the presence of an upper house and the manner is which is elected affect linkage in the same terms, in particular when membership is geographically determined, bicameral system is strong and the upper and lower houses are elected using significantly different rules (Martínez and Lago, 2005). Thus, one expects better linkage in states that are unicameral and worse linkage in states that are bicameral (Cox, 1999: 150; Chhibber and Kollman, 2004: 30-32).

- **The nature of the executive (presidential versus parliamentary).** Presidential elections are usually considered as a key variable driving the linkage of legislative candidates across districts. The mechanism underlying this effect is that, when there are presidential elections, candidates for the lower house often want to link with national-party candidates. Thus, minor parties have more opportunities to gain representation to the lower house when there are no presidential elections (Jones, 1994; Mainwaring and Sugart, 1997; Shugart and Carey, 1992; Taagepera and Sugart, 1989). However, and according to the empirical evidence provided by Cox (1997: chapter 10), this argument is no so simple. Presidential elections will drive the system toward national bipartism (or encourage the nationalization of party systems) to the extent that the presidency is a nondivisible prize elected by rules that approximate a straight fight. That is, if all four conditions are met: a powerful presidency, a strong presidential election procedure, strongly linked presidential and legislative elections, and a strong legislative election procedure.
Finally, sociological incentives for the nationalization of party systems depends on the existence and distribution of social cleavages. Cleavages at the local level increase the chances of malcoordination (hence of an increase in the number of entrants) (Cox, 1997). At the national level, the story depends on the geographic distribution of voters (Kin and Ohn, 1992). If a third party’s supporters are concentrated in a particular region or district/s, then they may be able to compete successfully as one of the viable parties locally, even while remaining a third party nationally. Thus, one expect a worse linkage in countries where social diversity is concentrated and a better linkage in countries where social diversity is not concentrated or does not exit.

In considering the determinants of the degree of party linkage, we have taken as a case every legislative election in our sample of eighteen Western European countries between 1970 and 1998. Netherlands has been excluded. Since the whole country makes up a single electoral district there, party linkage is always perfect and therefore the national and the local party systems are the same independently of the institutional design and the social diversity discussed above. The total number of observations is 132. To our knowledge, this is the first time the determinants of the degree of party linkage are tested.

Our measure of the nationalization of party systems or party linkage, the dependent variable, is based on the inflation rate (I) introduced by Moenius and Kasuya (2004):

\[
I = \left( \frac{\text{ENP}_{\text{nat}} - \text{ENP}_{\text{avg}}}{\text{ENP}_{\text{avg}}} \right) \times 100
\]

where:
- \( \text{ENP}_{\text{nat}} \) = the effective number of parties at the national level, and
- \( \text{ENP}_{\text{avg}} \) = the average effective number of parties at the district level.

\( \text{ENP} \) measures how many “serious” parties are in the race. It is calculated as follows. For \( n \) parties receiving votes, \( \text{ENP} = \frac{1}{\sum_{i=1}^{n} p_i^2} \). The element \( p \) is the proportion of votes obtained by party \( i \) in the election (Laakso and Taagepera, 1979). Our data on district-level electoral results come from Caramani (2000).

\( I \) relates the size of the national-level party system to the average size of the district-level party systems. If the size of the national-level party system is larger than the average size of party systems across districts, the measure indicates that there is inflation of the party system from the district level to the national level. If the average size of the party system across districts is larger than the size of the party system on the national level, we observe party system deflation. In short, the higher the inflation or the lower the deflation rate, the poorer the linkage across district-level party systems.
The independent variables are six. First, **Federalism** has been coded as a dummy variable (1 for federal countries, 0 for unitary). The source is Lijphart (1999). Second, **Bicameralism** has been coded as a dummy variable (1 for bicameral countries, 0 for unicameral). Our source is again Lijphart (1999). Third, the **Upper Tier** variable equals the percentage of all assembly seats allocated in the upper tier(s) of the polity. It ranges for zero for democracies without upper tiers to a maximum of 50% for Germany. The source is Golder (2005). Fourth, similar to Amorim Neto and Cox (1997), our approach to code **Presidentialism** takes the influence a presidential election exerts on a legislative elections as depending on the proximity of the two elections. If we denote the date of the legislative election by $L_t$, the date of the preceding presidential election by $P_{t-1}$, and the date of the succeeding presidential election by $P_{t+1}$, then the proximity value is:

$$\text{PROXIMITY} = 2 \frac{|L_t - P_{t-1}|}{P_{t+1} - P_{t-1}}$$

This formula expresses the time elapsed between the preceding presidential election and the legislative election $L_t - P_{t-1}$ as a fraction of the presidential term $P_{t+1} - P_{t-1}$. Subtracting $\frac{1}{2}$ from this elapsed time fraction, and then taking the absolute value, shows how far away from the midterm the legislative election was held. The logic of the formula is as follows: The least proximal legislative elections are those held at midterm. The formula gives a proximity value of zero to these elections, which equates with the totally isolated elections of non-presidential elections. The most proximal nonconcurrent elections are those held just before or just after a presidential election. The formula gives them a proximity value that approaches one, the same value given to concurrent elections. Our data come from Golder (2005). Fifth, social heterogeneity is measured according to the most commonly employed measure of aggregate diversity: **Ethnic Fractionalization**. Fractionalization is defined as the probability that two individuals selected at random from a country will be from different ethnic groups:

$$\text{FRACT}_j = 1 - \sum_{i=1}^{N} s_{ij}^2$$

where $s_{ij}$ is the share of group i (i = 1 … N) in country j. The source is Alesina et al (2003). Finally, **District Magnitude**, operationalized as the average district magnitude in an electoral system, has been included. Caramani (2000) and Golder (2005) are our sources. Although there is no clear theoretical reason in

---

7 We have also investigated the impact of the linguistic fractionalization and various combinations of ethnic and linguistic heterogeneity, without finding significantly stronger results than those reported.
our model to expect an effect of electoral systems features on party linkage, the connection between district magnitude and the degree of nationalization of party systems is key in the argument of Persson and Tabellini (1999, 2000, 2002) or Milesi-Ferretti et al. (2000, 2002), Mujherjee (2003) or Scartascini and Crain (2001), at least implicitly. Given their assumptions of a similar distribution of social groups across districts in majoritarian systems and the existence of a single district in proportional systems, the consequence is that countries have just as large a national party system as one would expect were each local party system a microcosm of the whole (0% inflation).

Summary statistics for the variables in our model are provided in table 1. Not surprisingly, there is considerable variation in the inflation scores or the degree of nationalization of party systems: the standard deviation of linkage is higher than the mean. This implies that countries have substantially larger national party systems than one would expect where their local party systems largely the same throughout the nation (16.93% inflation).

Table 1
DESCRIPTIVE STATISTICS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev. (All)</th>
<th>Std. Dev. (Within)</th>
<th>Std. Dev. (Between)</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linkage</td>
<td>141</td>
<td>16.93</td>
<td>25.11</td>
<td>6.85</td>
<td>23.84</td>
<td>0</td>
<td>115.23</td>
</tr>
<tr>
<td>Federalism</td>
<td>141</td>
<td>0.32</td>
<td>0.47</td>
<td>0.00</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bicameralism</td>
<td>141</td>
<td>0.65</td>
<td>0.48</td>
<td>0.00</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Upper Tier</td>
<td>141</td>
<td>0.11</td>
<td>0.15</td>
<td>0.04</td>
<td>0.15</td>
<td>0</td>
<td>0.50</td>
</tr>
<tr>
<td>Presidentialism</td>
<td>141</td>
<td>0.19</td>
<td>0.32</td>
<td>0.17</td>
<td>0.27</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Ethnic Frac.</td>
<td>141</td>
<td>0.18</td>
<td>0.17</td>
<td>0.00</td>
<td>0.18</td>
<td>0.05</td>
<td>0.56</td>
</tr>
<tr>
<td>District Magnitude</td>
<td>141</td>
<td>17.47</td>
<td>35.13</td>
<td>1.50</td>
<td>33.78</td>
<td>1</td>
<td>150</td>
</tr>
</tbody>
</table>

Correlations among the variables are provided in table 2. The correlation between Linkage and District Magnitude is only -0.05 and is not statistically discernible from zero at about the 0.05 level or better. In other words, District Magnitude does not affect Linkage. Correlations among the other five independent variables and Linkage are of the expected sign and significant at the 0.05 level or better. The only exception is the Upper Tier variable. We hypothesized a negative sign, but the correlation is positive owing to Belgium. When Belgium is excluded, the correlation is -0.33.

---

8 Netherlands is included here.
Having discussed the data and operationalization of our variables and their correlations, we can turn to the issue of how we specify the relations of interest. In the analysis of party linkage or the degree of nationalization of party systems we run two different econometric specifications. Equation one includes one variable pertaining to the legislative electoral systems, District Magnitude; a sociological variable tapping into social heterogeneity (specifically, Ethnic Fractionalization); and the translation of this social diversity into institutional terms (specifically, Federalism). Equation 2 is a pure institutionalist specification in which Upper Tier, Presidentialism, Bicameralism, and District Magnitude are combined:

$$\text{Linkage}_{it} = \beta_0 + \beta_1 \text{Magnitude}_{it} + \beta_2 \text{Ethnic}_{it} + \beta_3 \text{Federalism}_{it} + \delta x_{it} + \mu_{it}$$  \[1\]

$$\text{Linkage}_{it} = \beta_0 + \beta_1 \text{Magnitude}_{it} + \beta_4 \text{UpperTier}_{it} +$$  \[2\]

$$+ \beta_5 \text{Presidentialism}_{it} + \beta_6 \text{Bicameralism}_{it} + \epsilon_{it}$$

The main results are displayed in table 3. Estimates of equation [1] are summarized in columns 1, 2, 3, 5, and 6. Those corresponding to equation [2] are shown in columns 4 and 7. In columns 1 to 4, Panel Corrected Standard Errors (Beck and Katz, 1995) are used instead of OLS Standard errors in order to deal with panel heteroskedasticity and serial autocorrelation. However, testing and controlling for potential cross-section correlation is discarded due to non-contemporaneous electoral cycles across countries. Estimating individual variances in order to estimate by FGLS is also ruled out due to the short number of individual observations.
Because between-variation of variables District Magnitude, Federalism and Ethnic Fractionalization is much wider than within-variation, we also calculated the between-group estimator corresponding to columns 2 and 3. Results are summarized in columns 5 and 6, respectively.

Finally, in column 7 individual fixed-effects are included into estimates to test potential omitted variable bias. However, independent variables are time invariant (bicameralism) or quasi-time invariant: between-variation is much wider than within-variation, as in the case of District Magnitude. Then, including both fixed-effects and time-invariant variables is not possible using standard procedures. And replacing fixed-effects with random-effects would be a bad option because those are assumed orthogonal to regressors (Beck and Katz, 2004). As an alternative to standard LSDV, the three-stage estimator (called xtfevd) proposed by Plümper and Troeger (2004a and 2004b) was used. Variables Bicameralism and District Magnitude are treated as time invariant.

The first econometric model explains about 7 percent of the variance in Linkage values. Not surprisingly, District Magnitude is not statistically significant: the number of seats to be filled in a district do not affect the nationalization of party systems. The second model, in which the variable Ethnic Fractionalization is added, produces a much better fit (an $R^2$ of 0.37). Ethnic Fractionalization has the expected sign and is statistically significant at the 0.01 level: the higher the ethnic diversity, the worse the linkage. The third econometric model, in which Ethnic Fractionalization is replaced with Federalism in order to avoid problems of multicollinearity, produces a worse fit (an $R^2$ of 0.18). Federalism has the expected positive sign and is statistically significant at the 0.01 level: Linkage is worse in federal states than in unitary states. In the fourth model only Bicameralism is statistically significant (at the 0.01 level): in bicameral countries linkage is worse than in unicaumeral countries. Upper tier and Presidentialism are not statistically significant, and only the latter has the expected (negative) sign. Finally, between-estimates in columns 5 to 7 confirm the previous findings.

---

9 As it is easy to demonstrate, the OLS estimator is a matrix weighted average of the within- and between-groups estimator. See, for instance, Greene (2003, 289-290).

10 While the effect of time-invariant variables cannot be estimated when individual fixed effects are also included, Monte Carlo simulations show that xtfevd performs better than the fixed-effect model when the between variation clearly exceeds the within variation (by at least factor 2.5). This is the case of variables Presidentialism and District magnitude. We thank Vera Troeger and Thomas Plümper for access to their STATA© program.

11 The number of observation drops from 132 to 115 because xtfevd discard initial observations when the Prais-Winsten AR(1) option is chosen, as we do.
### Table 3
**THE DETERMINANTS OF THE NATIONALIZATION OF PARTY SYSTEMS**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>District Magnitude</td>
<td>-0.21</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
</tr>
<tr>
<td>Ethnic Fractionalization</td>
<td>93.73***</td>
</tr>
<tr>
<td></td>
<td>(20.31)</td>
</tr>
<tr>
<td>Federalism</td>
<td>24.54***</td>
</tr>
<tr>
<td></td>
<td>(8.68)</td>
</tr>
<tr>
<td>Upper Tier</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidentialism</td>
<td>-0.81</td>
</tr>
<tr>
<td></td>
<td>(1.86)</td>
</tr>
<tr>
<td>Bicameralism</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.071</td>
</tr>
<tr>
<td>N</td>
<td>132</td>
</tr>
<tr>
<td>Estimation Method</td>
<td>OLS</td>
</tr>
<tr>
<td></td>
<td>with PCSE</td>
</tr>
</tbody>
</table>

**Notes:** Standard Errors are given in parentheses.

### 4. THE COMPOSITION OF PUBLIC SPENDING AND THE NATIONALIZATION OF PARTY SYSTEMS

In this section, we examine whether political institutions shape fiscal policy choices. First, we test if government spending on transfers is a function of the permissiveness of electoral systems or district magnitude. Second, we test our main hypothesis, which predicts that in weakly nationalized party systems, and given the additional transaction costs introduced by subnational parties, politicians enjoy a higher rigidity or a lower margin of maneuverability to change the composition of public spending than in highly nationalized party systems.

We have taken as a case every legislative election in our sample of eighteen Western European countries between 1970 and 1998. The data source for the fiscal and economic variables is the *OECD Statistical Compendium edition 02#2003*. This database has two advantages in comparison with other potential...
sources: the homogeneity of fiscal data and the precision in the definition of fiscal variables.

The procedure to test the effects of our key independent variables, alone and in combination with different control variables, is as follows:

\[
\text{Transfers}_{it} = \alpha + \beta_1 \text{Transfers}_{it-1} + \beta_2 \text{Linkage} + \beta_3 \text{Age} + \beta_4 \text{Unemployment} + \beta_5 \text{EOGDP} + \beta_6 \text{Federalism} + \beta_7 \text{Magnitude} + \varepsilon_{it}
\]

where:

- \( \text{Transfers}_{it} \) and \( \text{Transfers}_{it-1} \) are government transfers to families as a share of public expenditure in country \( i \) at times \( t \) and \( t-1 \) respectively (in percentage). Source: OECD. Using the acronyms from the OCDE:
  \( \text{Transfers} = (\text{SSPG} + \text{TRPG})/(\text{IGAA} + \text{TKPG} + \text{CGAA} + \text{SSPG} + \text{TRPG}) \).
  \( \text{SSPG} \) = Social benefits paid by government.
  \( \text{TRPG} \) = Other current transfers paid by government.
  \( \text{IGAA} \) = Fixed investment, government.
  \( \text{TKPG} \) = Capital transfers and transactions paid.
  \( \text{CGAA} \) = Government consumption.

- \( \text{Age} \) is the share of population over 65 years (in percentage). Source: OECD.

- \( \text{Unemployment} \) is the unemployment rate (in percentage). Source: OECD.

- \( \text{EOGDP} \) is Total Expenditure over GDP (in percentage). Source: OECD. OECD acronyms: \( \text{YPGTC} \).

- \( \text{Federalism} \) is a dummy variable equal to one for federal countries and 0 for unitary countries.

- \( \text{District Magnitude} \) is the average district magnitude in each electoral system.

Because of strong sluggishness in changes on the budget structure, the lagged endogenous is included as regressor. Variables \( \text{Age} \) and \( \text{Unemployment} \) have been also added to control for both within and between variation in the number of beneficiaries from the main transfer programs (pensions and unemployment compensation). Both variables are determinants of transfers and Social Security payments (Sanz and Velázquez, 2002). According to the aforementioned results by Arze et al. (2005), we introduce a dummy variable, \( \text{Federalism} \), for federal countries. Finally, variable \( \text{EOGDP} \) is included to control for a potential relationship between the level of public expenditure and its composition.

Spending categories included into the denominator in the variable \( \text{Transfers} \) accounts for more than 90% of average total public spending for all countries and years in the period 1970-98. Variable \( \text{EOGDP} \) also includes into the numerator items as interest payments and subsidies to firms. This definition of
the dependent variable as a share of public expenditure instead of in terms of the GDP is explained by two reasons. Firstly, we are not interested in the level of expenditure, but in its composition. Moreover, an increase in transfers over the GDP is compatible with a reduction of their share on budget if the growth in direct expenditure is higher. Secondly, since the seminal contributions by Adolph Wagner in the 19th century, a huge number of both theoretical and empirical papers on the determinants of the level of public expenditure on GDP have been published\textsuperscript{12}. Hence, institutional variables like the electoral system should be integrated into those theoretical and econometric available models in order to control for all potential factors explaining the level of expenditure in each country. And this is not an easy task (Jackson, 1993).

Two other variables were included in previous estimates to control for both differences in standards of living and economies of scale: per capita GDP expressed in Purchasing Power Parities and total population. Both were not significant once the lagged endogenous were included as a regressor. Summary statistics for the variables are provided in table 4.

For the statistical sets, we use a panel data composed of 91 observations. Several reasons explain why the number of observations drops from initial 141 to 91. The inclusion of lagged endogenous as regressor drops 17 observations. The lack of fiscal data for Switzerland and for some countries in the 70s is a second reason. Finally, extremely short electoral cycles are excluded. In all cases data for election years is discarded due to potential lags between changes on political variables and changes on budget structure and to avoid biases due to the manipulation of the budget composition around election moments (Barreira and Baleiras, 2004). Let be two consecutive elections in years $t$ and $t+s$, average values from years $t+1$ to $t+s-1$ are then used. As a result observations for one-year ($s=0$) or two-years ($s=1$) electoral cycles are dropped.

Serial autocorrelation dissapears once Transfers$\_1$ is included. Moreover, the Breusch and Pagan Lagrangian multiplier test shows that individual random effects are not necessary (p-value=0.246). The Cook-Weisberg test for heteroskedasticity was carried on. According to the results, the null hypothesis of constant variance should be rejected (p-value 0.012). On the contrary, multicollinearity is not a serious concern according to estimates of multiple correlation among regressors. Hence, Panel Corrected Standard Errors (Beck and Katz, 1995) are used instead of OLS Standard errors in order to deal with panel heteroscedasticity. However, testing and controlling for potential cross-section correlation is discarded again.

The main results are displayed in table 5. In the first model, Linkage has the expected sign—the weaker the nationalization of party systems, the lower the spending on transfers—but it is not statistically significant. Federalism and total expenditure over the GDP (EOGDP) are not statistically significant either. On the contrary, the share of population over 65 years and the unemployment rate are statistically significant at the 5% level: a one percent increase in the unemployment rate and in the share of population over 65 years raises the weight of transfers on total expenditure by about 0.14 and 0.28 points, respectively. Finally, the composition of public spending is subject to a strong rigidity: the lagged spending in transfers has a coefficient of 0.87. The second model, in which the variables Federalism and EOGDP are omitted, produces little change in the coefficients of the variables. Linkage is again not statistically significant.

Although an unitary coefficient for Transfers\(_{t-1}\) may be clearly discarded according to the Wald test (p-value=0.011), in estimation 3 the hypothesis \(\beta=1\) is imposed (i.e. we suppose an unit root process on the variable transfers). The model shows little change in the coefficients of Linkage and Unemployment, but produces an insignificant coefficient of AGE.

The fourth model, in which Linkage is replaced with District Magnitude, produces a coefficient on District Magnitude that is not statistically significant: electoral systems do not affect the composition of public expenditure. And the lagged share of transfers shows the same coefficient than in the previous models\(^{13}\).

---

\(^{13}\) Because between-variation of variables Linkage and District Magnitude is much wider than within-variation, we also calculated the between-group estimator corresponding to columns 2 and 4 (dropping the lagged endogenous). While the statistical significance of the latter increased, the corresponding p-value was over 0.20.

---

### Table 4

**DESCRIPTIVE STATISTICS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev. (All)</th>
<th>Std. Dev. (Within)</th>
<th>Std. Dev. (Between)</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfers</td>
<td>91</td>
<td>0.42</td>
<td>0.06</td>
<td>0.03</td>
<td>0.05</td>
<td>0.21</td>
<td>0.52</td>
</tr>
<tr>
<td>Linkage</td>
<td>91</td>
<td>15.16</td>
<td>15.16</td>
<td>5.52</td>
<td>23.77</td>
<td>0</td>
<td>115.23</td>
</tr>
<tr>
<td>Age</td>
<td>91</td>
<td>14.03</td>
<td>1.93</td>
<td>1.20</td>
<td>1.58</td>
<td>8.45</td>
<td>17.81</td>
</tr>
<tr>
<td>Unemployment</td>
<td>91</td>
<td>6.91</td>
<td>3.85</td>
<td>2.31</td>
<td>3.20</td>
<td>1.15</td>
<td>18.25</td>
</tr>
<tr>
<td>EOGDP</td>
<td>91</td>
<td>49.74</td>
<td>7.49</td>
<td>4.29</td>
<td>6.05</td>
<td>33.78</td>
<td>70.22</td>
</tr>
<tr>
<td>Federalism</td>
<td>91</td>
<td>0.30</td>
<td>0.46</td>
<td>0.00</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>District Magnitude</td>
<td>91</td>
<td>14.96</td>
<td>29.66</td>
<td>1.83</td>
<td>34.74</td>
<td>1</td>
<td>150</td>
</tr>
</tbody>
</table>
In the fifth column, the hypothesis predicting a higher rigidity of the budget structure in weakly nationalized party systems is tested. A new dummy variable (spline) is defined in order to split the sample into two according to the degree of party linkage: spline is equal to one when party linkage is above the median, (i.e., the lowest nationalized party systems) and 0 when it is below the median (i.e., the highest nationalized party systems). Then, the following econometric specification is estimated:

\[
\text{Transfers}_{it} = \alpha + \beta_3 \text{Age} + \beta_4 \text{Unemployment} + \beta_9 \text{spline}_it + \beta_{10} \text{spline} \cdot \text{Transfers}_{it-1} + \\
+ \beta_{11}(1-\text{spline}) \cdot \text{Transfers}_{it-1} + \mu_{it}
\]

The coefficient on this spline is negative, suggesting that spending on transfers is lower in weakly nationalized party systems than in highly nationalized party systems. But it is not statistically significant. The introduction of an interaction between the spline and the government transfers in t-1 explores to what extent rigidity of the budget composition depends on the degree of party linkage. The answer is affirmative: the lagged spending on transfers has a coefficient of 0.93 for weakly nationalized party systems, but only of 0.82 for highly nationalized party systems. In other words, about 93 percent of the lagged budget composition persists in the following year in weakly nationalized party systems, but only about 82 percent in highly nationalized party systems. Moreover, according to the results of a Wald test, the hypothesis \( \beta=1 \), can be rejected in the latter case (p-value=0.016), but not in the former (p-value=0.236).

Finally, model 6 tests the effect of an increase in the number of electoral parties, measured again according to the Laakso and Taagepera’s index, on the government spending on subsidies and transfers. The argument, provided and empirically supported by Mukherjee (2003: 707), is that, when the number of parties in a legislature increases, therein implying a greater representation of special interests and different constituencies, individual parties have stronger incentives to support spending on subsidies and transfers as it provides more "pork" to satisfy the demands of their constituencies.

Although there is a high correlation between party linkage and the number of electoral parties (+0.71), according to our argument a strong impact of the number of parties on the composition of public spending should not be expected. When the number of parties in a legislature increases, this does not imply that only national or social interests were represented. On the contrary, the higher the number of parties in a legislature, the higher the probability of finding subnational parties. And given that they represent local interests, highly fragmented legislatures should be more prone to public good spending. In sum, the relationship between the number of parties in a legislature and the composition of public spending is not so clear as Mukherjee claims. Our argument is strongly supported by model 6: the number of electoral parties is not statistically significant.
### Table 5

<table>
<thead>
<tr>
<th>Dependent variable: Transfers</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td>1</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.53</td>
</tr>
<tr>
<td></td>
<td>(2.25)</td>
</tr>
<tr>
<td>Transfers₁</td>
<td>0.87***</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>Linkage</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
</tr>
<tr>
<td>Age</td>
<td>0.28**</td>
</tr>
<tr>
<td></td>
<td>(0.14)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>0.14**</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
</tr>
<tr>
<td>EOGDP</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Federalism</td>
<td>-0.38</td>
</tr>
<tr>
<td></td>
<td>(0.44)</td>
</tr>
<tr>
<td>District Magnitude</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ENEP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Spline</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Spline* Transfers₁</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(1-Spline)* Transfers₁</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald test: β₁₀ = 1 (p-value)</td>
<td></td>
</tr>
<tr>
<td>Wald test: β₁₁ = 1 (p-value)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.896</td>
</tr>
<tr>
<td>N</td>
<td>91</td>
</tr>
</tbody>
</table>

*** p<0.01, **p<0.05, *p<0.1

Notes: OLS estimates. Values corresponding to Panel Corrected Standard Errors (PCSE) are given in parentheses.
5. CONCLUSIONS AND EXTENSIONS

According to our theoretical arguments and empirical findings, the degree of party linkage or the nationalization of party systems is more relevant than differences in electoral systems to explain fiscal choices. Since both factors are different from both theoretical and statistical standpoints, the choice of one of them as independent variable is a relevant issue.

A second result of the paper is that the degree of party linkage is not statistically significant to explain differences in the share of transfers on public expenditure for the European OECD countries over the period 1970-1998. Our findings do not support that the share of transfers to families over total public expenditure—proxy of “universal” public expenditure—was higher when subnational parties and interests disappear from national politics. However, this second conclusion is subject to further analysis. In this paper we have followed the same criteria than Milessi-Ferreti et al. (2002). Direct expenditure is assumed as targetable expenditure, and transfers to families are assumed to enjoy a limited scope for targeting them geographically. But this distinction is relatively crude as the following examples illustrate. First, direct expenditure on national public goods is enjoyed by citizens all over the country. Second, transfers to unemployed may be really targeted to lagged regions or regions in crisis. Third, transfers to families made by subcentral governments in federal countries just benefit their residents (so they have a geographical target). In our opinion, a more careful and detailed analysis of expenditure is necessary before discarding the hypothesis that the degree of party linkage is irrelevant to explain differences in the composition of public expenditure. This is a future extension of this paper. Probably we should change the scope of the mechanism. More than explaining the composition of public expenditure at the highest aggregation level, we should focus on individual expenditure programs.

On the contrary, we have found support for the relationship between the degree of party linkage and the rigidity of expenditure structure: when local or regional parties or interest disappear from national politics, politicians tend to enjoy a lower rigidity or a higher margin of maneuverability to change the composition of public spending. In other words, budget composition persists to a greater extent in weakly than in highly nationalized party systems. The mechanism behind this argument is that in weakly nationalized party systems, subnational parties are an additional relevant actor, making political changes in expenditure composition more difficult. This relationship should be analyzed in depth in future research in both theoretical and empirical grounds.

14 This is the case, for instance, of the Spanish Plan de Empleo Rural, designed to benefit unemployed workers in the primary sector. Most of them are resident in Andalusia.
Finally, we think that our results should stimulate the analysis of others plausible connections between the degree of party linkage and fiscal choices. For instance, it would be interesting to check the potential relevance of this factor to explain the success in fiscal consolidation process. Do countries with a more nationalized party system enjoy a higher capacity to expenditure cuts and then more fiscal discipline?
REFERENCES


BARREIRA, ANA P. and NUNO BALEIRAS, RUI. (2004): “Elections and the Public Expenditure Mix”, Universidade do Algarve, manuscript.


BECK, NATHANIEL and KATZ, JONATHAN. (1995): “What To Do (and not To Do) with Time-Series Cross-Section Data”, American Political Science Review núm.89, pps. 634-647.


LAAKSO, MARKKU and, TAAGEPERA, REIN. (1979): ‘`Effective´ number of parties. A measure with applications to West Europe’. Comparative Political Studies núm.12, pps. 3-27.


— 33 —


— 34 —


СНИДЕР, ИЭМУС М. и ЯКОВЛЕВ, ИРИНЕ. (2001): “Political and Economic determinants of Government Spending on Social Protection Programs”. MIT, manuscript.


SÍNTESIS
PRINCIPALES IMPLICACIONES DE POLÍTICA ECONÓMICA

La composición del gasto público —tanto económica como funcional— es un factor relevante para el diseño y evaluación de los efectos de la política presupuestaria. Por ello la existencia de diferencias permanentes en el tiempo en la composición del gasto entre países ha dado pie al estudio de sus determinantes. Las aproximaciones económicas estándar suelen partir del modelo de votante mediano e incluir en las especificaciones econométricas variables como la renta per cápita, la ratio de precios entre sector público y privado, la tasa de desempleo, la población total, la densidad o la estructura demográfica. Sin embargo, estas variables no explican plenamente las diferencias entre países.

En la búsqueda de factores adicionales, la investigación teórica y aplicada ha encontrado en las características de los sistemas electorales una variable a tener presente. En este documento mostramos que, más que en los sistemas electorales en sí, la atención debería enfocarse hacia el grado de nacionalización de los sistemas de partidos a la hora de analizar el margen de maniobra con que cuentan los gobiernos.

El segundo objetivo de este documento es examinar en qué forma ese grado de nacionalización del sistema de partidos afecta al presupuesto. Exploramos dos posibilidades: la relación del primero con la participación de las transferencias a los hogares en el gasto público; y el efecto del grado de nacionalización sobre la rigidez en la composición del gasto público. En el primer caso, la idea es que en los países con un grado de nacionalización más elevado, los intereses regionales tienen menor repercusión en la toma de decisiones públicas; lo que, a su vez, prima a los programas de transferencia universales respecto al gasto directo —consumo e inversión—, más vinculado al territorio. En el segundo caso, el punto de partida es la observación de que el proceso presupuestario es una negociación multilateral entre múltiples actores. En este contexto, la existencia de partidos de ámbito regional genera costes de transacción adicionales a la hora de introducir cambios en los programas de gasto y, por tanto, mayor rigidez en su composición.

Para contrastar estos argumentos usamos una base de datos económicos y políticos que integra 141 elecciones en 18 países occidentales europeos durante el período 1970-1998. Nuestros resultados demuestran que el grado de nacionalización del sistema de partidos no es estadísticamente significativo a la hora de explicar las diferencias en el nivel de las transferencias, pero sí para dar cuenta de la rigidez presupuestaria por el lado del gasto.

En todo caso, la primera de estas dos conclusiones debe ponerse en cuarentena, por los posibles problemas de medición en las variables. En el documento se sigue el mismo criterio que Milessi-Ferreti et al (2002): el gasto directo sería el gasto asignable territorialmente, las transferencias a los hogares serían gasto “universal” para el conjunto de ciudadanos de cada país. Sin embargo, esta distinción plantea problemas.
Algunos ejemplos serían el hecho de que el gasto en bienes públicos puros de ámbito estatal es gasto universal; las transferencias a desempleados pueden estar de facto diseñadas para favorecer especialmente a determinados territorios atrasados, o a aquellos cuyas economías experimentan un choque asimétrico negativo; las transferencias a familias ejecutadas por gobiernos subcentrales en países descentralizados sólo benefician a sus residentes, al tiempo que pueden estar siendo cofinanciadas por el gobierno central. En futuros trabajos quizá deberíamos cambiar el alcance del mecanismo. Más que explicar la composición del gasto a un nivel tan agregado como el que se ha planteado hasta ahora en la literatura, habría que centrar la atención en programas de gasto individuales.
NORMAS DE PUBLICACIÓN DE PAPELES DE TRABAJO DEL INSTITUTO DE ESTUDIOS FISCALES

Esta colección de Papel de Trabajo tiene como objetivo ofrecer un vehículo de expresión a todas aquellas personas interesadas en los temas de Economía Pública. Las normas para la presentación y selección de originales son las siguientes:

1. Todos los originales que se presenten estarán sometidos a evaluación y podrán ser directamente aceptados para su publicación, aceptados sujetos a revisión, o rechazados.


3. La extensión máxima de texto escrito, incluidos apéndices y referencias bibliográficas será de 7000 palabras.

4. Los originales deberán presentarse mecanografiados a doble espacio. En la primera página deberá aparecer el título del trabajo, el nombre del autor(es) y la institución a la que pertenece, así como su dirección postal y electrónica. Además, en la primera página aparecerá también un abstract de no más de 125 palabras, los códigos JEL y las palabras clave.

5. Los epígrafes irán numerados secuencialmente siguiendo la numeración arábiga. Las notas al texto irán numeradas correlativamente y aparecerán al pie de la correspondiente página. Las fórmulas matemáticas se numerarán secuencialmente ajustadas al margen derecho de las mismas. La bibliografía aparecerá al final del trabajo, bajo la inscripción “Referencias” por orden alfabético de autores y, en cada una, justándose al siguiente orden: autor(es), año de publicación (distinguiendo a, b, c si hay varias correspondientes al mismo autor(es) y año), título del artículo o libro, título de la revista en cursiva, número de la revista y páginas.

6. En caso de que aparezcan tablas y gráficos, éstos podrán incorporarse directamente al texto o, alternativamente, presentarse todos juntos y debidamente numerados al final del trabajo, antes de la bibliografía.

7. En cualquier caso, se deberá adjuntar un disquete con el trabajo en formato word. Siempre que el documento presente tablas y/o gráficos, éstos deberán aparecer en ficheros independientes. Asimismo, en caso de que los gráficos procedan de tablas creadas en excel, estas deberán incorporarse en el disquete debidamente identificadas.

Junto al original del Papel de Trabajo se entregará también un resumen de un máximo de dos folios que contenga las principales implicaciones de política económica que se deriven de la investigación realizada.
PUBLISHING GUIDELINES OF WORKING PAPERS AT THE INSTITUTE FOR FISCAL STUDIES

This series of *Papeles de Trabajo* (working papers) aims to provide those having an interest in Public Economics with a vehicle to publicize their ideas. The rules governing submission and selection of papers are the following:

1. The manuscripts submitted will all be assessed and may be directly accepted for publication, accepted with subjections for revision or rejected.

2. The papers shall be sent in duplicate to Subdirección General de Estudios Tributarios (The Deputy Direction of Tax Studies), Instituto de Estudios Fiscales (Institute for Fiscal Studies), Avenida del Cardenal Herrera Oria, nº 378, Madrid 28035.

3. The maximum length of the text including appendices and bibliography will be no more than 7000 words.

4. The originals should be double spaced. The first page of the manuscript should contain the following information: (1) the title; (2) the name and the institutional affiliation of the author(s); (3) an abstract of no more than 125 words; (4) JEL codes and keywords; (5) the postal and e-mail address of the corresponding author.

5. Sections will be numbered in sequence with arabic numerals. Footnotes will be numbered correlative and will appear at the foot of the corresponding page. Mathematical formulae will be numbered on the right margin of the page in sequence. Bibliographical references will appear at the end of the paper under the heading “References” in alphabetical order of authors. Each reference will have to include in this order the following terms of references: author(s), publishing date (with an a, b or c in case there are several references to the same author(s) and year), title of the article or book, name of the journal in italics, number of the issue and pages.

6. If tables and graphs are necessary, they may be included directly in the text or alternatively presented altogether and duly numbered at the end of the paper, before the bibliography.

7. In any case, a floppy disk will be enclosed in Word format. Whenever the document provides tables and/or graphs, they must be contained in separate files. Furthermore, if graphs are drawn from tables within the Excell package, these must be included in the floppy disk and duly identified.

Together with the original copy of the working paper a brief two-page summary highlighting the main policy implications derived from the research is also requested.
ÚLTIMOS PAPELES DE TRABAJO EDITADOS POR EL
INSTITUTO DE ESTUDIOS FISCALES

2000

1/00 Crédito fiscal a la inversión en el impuesto de sociedades y neutralidad impositiva: Más evidencia para un viejo debate.
Autor: Desiderio Romero Jordán.

2/00 Estudio del consumo familiar de bienes y servicios públicos a partir de la encuesta de presupuestos familiares.
Autores: Ernesto Carrillo y Manuel Tamayo.

3/00 Evidencia empírica de la convergencia real.
Autores: Lorenzo Escot y Miguel Ángel Galindo.

Nueva Época

4/00 The effects of human capital depreciation on experience-earnings profiles: Evidence salaried spanish men.
Autores: M. Arrazola, J. de Hevia, M. Risueño y J. F. Sanz.

5/00 Las ayudas fiscales a la adquisición de inmuebles residenciales en la nueva Ley del IRPF: Un análisis comparado a través del concepto de coste de uso.
Autor: José Félix Sanz Sanz.

6/00 Las medidas fiscales de estímulo del ahorro contenidas en el Real Decreto-Ley 3/2000: análisis de sus efectos a través del tipo marginal efectivo.
Autores: José Manuel González Páramo y Nuria Badenes Plá.

7/00 Análisis de las ganancias de bienestar asociadas a los efectos de la Reforma del IRPF sobre la oferta laboral de la familia española.
Autores: Juan Prieto Rodríguez y Santiago Álvarez García.

8/00 Un marco para la discusión de los efectos de la política impositiva sobre los precios y el stock de vivienda.
Autor: Miguel Ángel López García.

9/00 Descomposición de los efectos redistributivos de la Reforma del IRPF.
Autores: Jorge Onrubia Fernández y María del Carmen Rodado Ruiz.

10/00 Aspectos teóricos de la convergencia real, integración y política fiscal.
Autores: Lorenzo Escot y Miguel Ángel Galindo.

2001

1/01 Notas sobre desagregación temporal de series económicas.
Autor: Enrique M. Quilis.

2/01 Estimación y comparación de tasas de rendimiento de la educación en España.
Autores: M. Arrazola, J. de Hevia, M. Risueño y J. F. Sanz.

3/01 Doble imposición, “efecto clientela” y aversión al riesgo.

4/01 Non-Institutional Federalism in Spain.
Autor: Joan Rosselló Villalonga.

Autora: Mabel Amaya Amaya.
6/01 Shapley inequality decomposition by factor components. 
**Autores:** Mercedes Sastre y Alain Trannoy.

7/01 An empirical analysis of the demand for physician services across the European Union. 
**Autores:** Sergi Jiménez Martín, José M. Labeaga y Maite Martínez-Granado.

8/01 Demand, childbirth and the costs of babies: evidence from Spanish panel data. 
**Autores:** José M.ª Labeaga, Ian Preston y Juan A. Sanchis-Llopis.

9/01 Imposición marginal efectiva sobre el factor trabajo: Breve nota metodológica y comparación internacional. 
**Autores:** Desiderio Romero Jordán y José Félix Sanz Sanz.

10/01 A non-parametric decomposition of redistribution into vertical and horizontal components. 
**Autores:** Irene Perrote, Juan Gabriel Rodríguez y Rafael Salas.

11/01 Efectos sobre la renta disponible y el bienestar de la deducción por rentas ganadas en el IRPF. 
**Autora:** Nuria Badenes Plá.

12/01 Seguros sanitarios y gasto público en España. Un modelo de microsimulación para las políticas de gastos fiscales en sanidad. 
**Autor:** Ángel López Nicolás.

13/01 A complete parametrical class of redistribution and progressivity measures. 
**Autores:** Isabel Rabadán y Rafael Salas.

14/01 La medición de la desigualdad económica. 
**Autor:** Rafael Salas.

15/01 Crecimiento económico y dinámica de distribución de la renta en las regiones de la UE: un análisis no paramétrico. 
**Autores:** Julián Ramajo Hernández y María del Mar Salinas Jiménez.

16/01 La descentralización territorial de las prestaciones asistenciales: efectos sobre la igualdad. 
**Autores:** Luis Ayala Cañón, Rosa Martínez López y Jesus Ruiz-Huerta.

17/01 Redistribution and labour supply. 
**Autores:** Jorge Onrubia, Rafael Salas y José Félix Sanz.

18/01 Medición de la eficiencia técnica en la economía española: El papel de las infraestructuras productivas. 
**Autoras:** M.ª Jesús Delgado Rodríguez e Inmaculada Álvarez Ayuso.

19/01 Inversión pública eficiente e impuestos distorsionantes en un contexto de equilibrio general. 
**Autores:** José Manuel González-Páramo y Diego Martínez López.

20/01 La incidencia distributiva del gasto público social. Análisis general y tratamiento específico de la incidencia distributiva entre grupos sociales y entre grupos de edad. 
**Autor:** Jorge Calero Martínez.

21/01 Crisis cambiarias: Teoría y evidencia. 
**Autor:** Óscar Bajo Rubio.

22/01 Distributive impact and evaluation of devolution proposals in Japanese local public finance. 
**Autores:** Kazuyuki Nakamura, Minoru Kunizaki y Masanori Tahiria.

23/01 El funcionamiento de los sistemas de garantía en el modelo de financiación autonómica. 
**Autor:** Alfonso Utrilla de la Hoz.
24/01 Rendimiento de la educación en España: Nueva evidencia de las diferencias entre Hombres y Mujeres.
Autores: M. Arrazola y J. de Hevia.

25/01 Fecundidad y beneficios fiscales y sociales por descendientes.
Autora: Anabel Zárate Marco.

26/01 Estimación de precios sombra a partir del análisis Input-Output: Aplicación a la economía española.
Autora: Guadalupe Souto Nieves.

27/01 Análisis empírico de la depreciación del capital humano para el caso de las Mujeres y los Hombres en España.
Autores: M. Arrazola y J. de Hevia.

28/01 Equivalence scales in tax and transfer policies.
Autores: Luis Ayala, Rosa Martínez y Jesús Ruiz-Huerta.

29/01 Un modelo de crecimiento con restricciones de demanda: el gasto público como amortiguador del desequilibrio externo.

30/01 A bi-stochastic nonparametric estimator.
Autores: Juan G. Rodríguez y Rafael Salas.

2002

1/02 Las cestas autonómicas.
Autores: Alejandro Esteller, Jorge Navas y Pilar Sorribas.

2/02 Evolución del endeudamiento autonómico entre 1985 y 1997: la incidencia de los Escenarios de Consolidación Presupuestaria y de los límites de la LOFCA.
Autores: Julio López Laborda y Jaime Vallés Giménez.

3/02 Optimal Pricing and Grant Policies for Museums.
Autores: Juan Prieto Rodríguez y Víctor Fernández Blanco.

4/02 El mercado financiero y el racionamiento del endeudamiento autonómico.
Autores: Nuria Alcalde Fradejas y Jaime Vallés Giménez.

5/02 Experimentos secuenciales en la gestión de los recursos comunes.

6/02 La eficiencia de la universidad medida a través de la función de distancia: Un análisis de las relaciones entre la docencia y la investigación.
Autores: Alfredo Moreno Sáez y David Trillo del Pozo.

7/02 Movilidad social y desigualdad económica.
Autores: Juan Prieto-Rodríguez, Rafael Salas y Santiago Álvarez-García.

8/02 Modelos BVAR: Especificación, estimación e inferencia.
Autor: Enrique M. Quilis.

9/02 Imposición lineal sobre la renta y equivalencia distributiva: Un ejercicio de microsimulación.
Autores: Juan Manuel Castañer Carrasco y José Félix Sanz Sanz.

10/02 The evolution of income inequality in the European Union during the period 1993-1996.
Autores: Santiago Álvarez García, Juan Prieto-Rodríguez y Rafael Salas.

11/02 Una descomposición de la redistribución en sus componentes vertical y horizontal: Una aplicación al IRPF.
Autora: Irene Perrote.
12/02 Análisis de las políticas públicas de fomento de la innovación tecnológica en las regiones españolas.
Autor: Antonio Fonfría Mesa.

13/02 Los efectos de la política fiscal sobre el consumo privado: nueva evidencia para el caso español.
Autores: Agustín García y Julián Ramajo.

14/02 Micro-modelling of retirement behavior in Spain.
Autores: Michele Boldrini, Sergi Jiménez-Martín y Franco Peracchi.

15/02 Estado de salud y participación laboral de las personas mayores.
Autores: Juan Prieto Rodríguez, Desiderio Romero Jordán y Santiago Álvarez García.

16/02 Technological change, efficiency gains and capital accumulation in labour productivity growth and convergence: an application to the Spanish regions.
Autor: M.ª del Mar Salinas Jiménez.

17/02 Déficit público, masa monetaria e inflación. Evidencia empírica en la Unión Europea.
Autor: César Pérez López.

18/02 Tax evasion and relative contribution.
Autora: Judith Panadés i Martí.

19/02 Fiscal policy and growth revisited: the case of the Spanish regions.
Autores: Óscar Bajo Rubio, Carmen Díaz Roldán y M.a Dolores Montávez Garcés.

20/02 Optimal endowments of public investment: an empirical analysis for the Spanish regions.
Autores: Óscar Bajo Rubio, Carmen Díaz Roldán y M.a Dolores Montávez Garcés.

21/02 Régimen fiscal de la previsión social empresarial. Incentivos existentes y equidad del sistema.
Autor: Félix Domínguez Barrero.

22/02 Poverty statics and dynamics: does the accounting period matter?
Autores: Olga Cantó, Coral del Río y Carlos Gradín.

23/02 Public employment and redistribution in Spain.
Autores: José Manuel Marqués Sevillano y Joan Rosselló Villallonga.

24/02 La evolución de la pobreza estática y dinámica en España en el periodo 1985-1995.
Autores: Olga Cantó, Coral del Río y Carlos Gradín.

25/02 Estimación de los efectos de un "tratamiento": una aplicación a la Educación superior en España.
Autores: M. Arrazola y J. de Hevia.

26/02 Sensibilidad de las estimaciones del rendimiento de la educación a la elección de instrumentos y de forma funcional.
Autores: M. Arrazola y J. de Hevia.

27/02 Reforma fiscal verde y doble dividendo. Una revisión de la evidencia empírica.
Autor: Miguel Enrique Rodríguez Méndez.

28/02 Productividad y eficiencia en la gestión pública del transporte de ferrocarriles implicaciones de política económica.
Autor: Marcelino Martínez Cabrera.

29/02 Building stronger national movie industries: The case of Spain.
Autores: Víctor Fernández Blanco y Juan Prieto Rodríguez.

30/02 Análisis comparativo del gravamen efectivo sobre la renta empresarial entre países y activos en el contexto de la Unión Europea (2001).
Autora: Raquel Paredes Gómez.
31/02 Voting over taxes with endogenous altruism. 
Author: Joan Esteban.

32/02 Midiendo el coste marginal en bienestar de una reforma impositiva. 
Author: José Manuel González-Páramo.

33/02 Redistributive taxation with endogenous sentiments. 
Autores: Joan Esteban y Laurence Kranich.

34/02 Una nota sobre la compensación de incentivos a la adquisición de vivienda habitual tras la reforma del IRPF de 1998. 
Autores: Jorge Onrubia Fernández, Desiderio Romero Jordán y José Félix Sanz Sanz.

35/02 Simulación de políticas económicas: los modelos de equilibrio general aplicado. 
Author: Antonio Gómez Gómez-Plana.

2003

1/03 Análisis de la distribución de la renta a partir de funciones de cuantiles: robustez y sensibilidad de los resultados frente a escalas de equivalencia. 
Autores: Marta Pascual Sáez y José María Sarabia Alegría.

2/03 Macroeconomic conditions, institutional factors and demographic structure: What causes welfare caseloads? 
Autores: Luis Ayala y César Pérez.

3/03 Endeudamiento local y restricciones institucionales. De la ley reguladora de haciendas locales a la estabilidad presupuestaria. 
Autores: Jaime Vallés Giménez, Pedro Pascual Arzoz y Fermín Cabasés Hita.

4/03 The dual tax as a flat tax with a surtax on labour income. 
Author: José María Durán Cabré.

5/03 La estimación de la función de producción educativa en valor añadido mediante redes neuronales: una aplicación para el caso español. 
Author: Daniel Santín González.

6/03 Privación relativa, imposición sobre la renta e índice de Gini generalizado. 
Autores: Elena Bárcena Martín, Luis Imedio Olmedo y Guillermina Martín Reyes.

7/03 Fijación de precios óptimos en el sector público: una aplicación para el servicio municipal de agua. 
Autora: M.ª Ángeles García Valiñas.

8/03 Tasas de descuento para la evaluación de inversiones públicas: Estimaciones para España. 
Autora: Guadalupe Souto Nieves.

9/03 Una evaluación del grado de incumplimiento fiscal para las provincias españolas. 
Autores: Ángel Alañón Pardo y Miguel Gómez de Antonio.

10/03 Extended bi-polarization and inequality measures. 
Autores: Juan G. Rodríguez y Rafael Salas.

11/03 Fiscal decentralization, macrostability and growth. 
Autores: Jorge Martinez-Vazquez y Robert M. McNab.

12/03 Valoración de bienes públicos en relación al patrimonio histórico cultural: aplicación comparada de métodos estadísticos de estimación. 
Autores: Luis César Herrero Prieto, José Ángel Sanz Lara y Ana María Bedate Centeno.

13/03 Growth, convergence and public investment. A bayesian model averaging approach. 
Autores: Roberto León-González y Daniel Montolio.
14/03 ¿Qué puede esperarse de una reducción de la imposición indirecta que recae sobre el consumo cultural? Un análisis a partir de las técnicas de microsimulación. 
Autores: José Félix Sanz Sanz, Desiderio Romero Jordán y Juan Prieto Rodríguez.

15/03 Estimaciones de la tasa de paro de equilibrio de la economía española a partir de la Ley de Okun. 
Autores: Inés P. Murillo y Carlos Usabiaga.

16/03 La previsión social en la empresa, tras la Ley 46/2002, de reforma parcial del impuesto sobre la renta de las personas físicas. 
Autor: Félix Domínguez Barrero.

17/03 The influence of previous labour market experiences on subsequent job tenure. 
Autores: José María Arranz y Carlos García-Serrano.

18/03 Promoting student's effort: standards versus tournaments. 
Autores: Pedro Landeras y J. M. Pérez de Villarreal.

19/03 Non-employment and subsequent wage losses. 
Autores: José María Arranz y Carlos García-Serrano.

20/03 La medida de los ingresos públicos en la Agencia Tributaria. Caja, derechos reconocidos y devengo económico. 
Autores: Rafael Frutos, Francisco Melis, M.ª Jesús Pérez de la Ossa y José Luis Ramos.

21/03 Tratamiento fiscal de la vivienda y exceso de gravamen. 
Autor: Miguel Ángel López García.

22/03 Medición del capital humano y análisis de su rendimiento. 
Autores: María Arrazola y José de Hevia.

23/03 Vivienda, reforma impositiva y coste en bienestar. 
Autor: Miguel Ángel López García.

24/03 Algunos comentarios sobre la medición del capital humano. 
Autores: María Arrazola y José de Hevia.

25/03 Exploring the spanish interbank yield curve. 
Autores: Leandro Navarro y Enrique M. Quilis.

26/03 Redes neuronales y medición de eficiencia: aplicación al servicio de recogida de basuras. 
Autor: Francisco J. Delgado Rivero.

27/03 Equivalencia ricardiana y tipos de interés. 
Autores: Agustín García, Julián Ramajo e Inés Piedraescrita Murillo.

28/03 Instrumentos y objetivos de las políticas de apoyo a las PYME en España. 
Autor: Antonio Fonfría Mesa.

29/03 Análisis de incidencia del gasto público en educación superior: enfoque transversal. 
Autora: María Gil Izquierdo.

30/03 Rentabilidad social de la inversión pública española en infraestructuras. 
Autores: Jaime Alonso-Carrera, María Jesús Freire-Serén y Baltasar Manzano.

31/03 Las rentas de capital en Phogue: análisis de su fiabilidad y corrección mediante fusión estadística. 
Autor: Fidel Picos Sánchez.

32/03 Efecto de los sistemas de rentas mínimas autonómicas sobre la migración interregional. 
Autora: María Martínez Torres.

33/03 Rentas mínimas autonómicas en España. Su dimensión espacial. 
Autora: María Martínez Torres.
34/03 Un nuevo examen de las causas del déficit autonómico.
*Autor*: Santiago Lago Peñas.

35/03 Uncertainty and taxpayer compliance.
*Autores*: Jordi Caballé y Judith Panadés.

2004

1/04 Una propuesta para la regulación de precios en el sector del agua: el caso español.
*Autores*: M.ª Ángeles García Valiñas y Manuel Antonio Muñiz Pérez.

2/04 Eficiencia en educación secundaria e *inputs* no controlables: sensibilidad de los resultados ante modelos alternativos.
*Autores*: José Manuel Cordero Ferrera, Francisco Pedraja Chaparro y Javier Salinas Jiménez.

3/04 Los efectos de la política fiscal sobre el ahorro privado: evidencia para la OCDE.
*Autores*: Montserrat Ferre Carracedo, Agustín García García y Julián Ramajo Hernández.

*Autores*: José María Arranz y Carlos García-Serrano.

*Autores*: José María Arranz y Carlos García-Serrano.

6/04 La ley de Wagner: un análisis sintético.
*Autor*: Manuel Jaén García.

7/04 La vivienda y la reforma fiscal de 1998: un ejercicio de simulación.
*Autor*: Miguel Ángel López García.

8/04 Modelo dual de IRPF y equidad: un nuevo enfoque teórico y su aplicación al caso español.
*Autor*: Fidel Picos Sánchez.

9/04 Public expenditure dynamics in Spain: a simplified model of its determinants.
*Autores*: Manuel Jaén García y Luis Palma Martos.

10/04 Simulación sobre los hogares españoles de la reforma del IRPF de 2003. Efectos sobre la oferta laboral, recaudación, distribución y bienestar.
*Autores*: Juan Manuel Castañer Carrasco, Desiderio Romero Jordán y José Félix Sanz Sanz.

11/04 Financiación de las Haciendas regionales españolas y experiencia comparada.
*Autor*: David Cantarero Prieto.

12/04 Multidimensional indices of housing deprivation with application to Spain.
*Autores*: Luis Ayala y Carolina Navarro.

13/04 Multiple occurrence of welfare recipiency: determinants and policy implications.
*Autores*: Luis Ayala y Magdalena Rodríguez.

14/04 Imposición efectiva sobre las rentas laborales en la reforma del impuesto sobre la renta personal (IRPF) de 2003 en España.
*Autoras*: María Pazos Morán y Teresa Pérez Barrasa.

15/04 Factores determinantes de la distribución personal de la renta: un estudio empírico a partir del PHOGUE.
*Autores*: Marta Pascual y José María Sarabia.

16/04 Política familiar, imposición efectiva e incentivos al trabajo en la reforma de la imposición sobre la renta personal (IRPF) de 2003 en España.
*Autoras*: María Pazos Morán y Teresa Pérez Barrasa.
17/04 Efectos del déficit público: evidencia empírica mediante un modelo de panel dinámico para los países de la Unión Europea.
Autor: César Pérez López.

18/04 Inequality, poverty and mobility: Choosing income or consumption as welfare indicators. 
Autores: Carlos Gradín, Olga Cantó y Coral del Río.

19/04 Tendencias internacionales en la financiación del gasto sanitario.
Autora: Rosa María Urbanos Garrido.

20/04 El ejercicio de la capacidad normativa de las CCAA en los tributos cedidos: una primera evaluación a través de los tipos impositivos efectivos en el IRPF.
Autores: José María Durán y Alejandro Esteller.

21/04 Explaining budgetary indiscipline: evidence from spanish municipalities.
Autores: Ignacio Lago-Peñas y Santiago Lago-Peñas.

22/04 Local governmets' asymmetric reactions to grants: looking for the reasons.
Autor: Santiago Lago-Peñas.

23/04 Un pacto de estabilidad para el control del endeudamiento autonómico.
Autor: Roberto Fernández Llera

24/04 Una medida de la calidad del producto de la atención primaria aplicable a los análisis DEA de eficiencia.
Autora: Mariola Pinillos García.

25/04 Distribución de la renta, crecimiento y política fiscal.
Autor: Miguel Ángel Galindo Martín.

26/04 Políticas de inspección óptimas y cumplimiento fiscal.
Autores: Inés Macho Stadler y David Pérez Castrillo.

27/04 ¿Por qué ahorra la gente en planes de pensiones individuales?

28/04 La reforma del Impuesto sobre Actividades Económicas: una valoración con microdatos de la ciudad de Zaragoza.
Autores: Julio López-Laborda, M.ª Carmen Trueba Cortés y Anabel Zárate Marco.

29/04 Is an inequality-neutral flat tax reform really neutral?
Autores: Juan Prieto-Rodríguez, Juan Gabriel Rodríguez y Rafael Salas.

30/04 El equilibrio presupuestario: las restricciones sobre el déficit.

2005

1/05 Efectividad de la política de cooperación en innovación: evidencia empírica española.
Autores: Joost Heijs, Liliana Herrera, Mikel Buesa, Javier Sáiz Briones y Patricia Valadez.

2/05 A probabilistic nonparametric estimator.
Autores: Juan Gabriel Rodríguez y Rafael Salas.

3/05 Efectos redistributivos del sistema de pensiones de la seguridad social y factores determinantes de la elección de la edad de jubilación. Un análisis por comunidades autónomas.
Autores: Alfonso Utrilla de la Hoz y Yolanda Ubago Martínez.

4/05 La relación entre los niveles de precios y los niveles de renta y productividad en los países de la zona euro: implicaciones de la convergencia real sobre los diferenciales de inflación.
Autora: Ana R. Martínez Cañete.
5/05 La Reforma de la Regulación en el contexto autonómico. 
*Autor:* Jaime Vallés Giménez.

*Autores:* Luis Ayala Cañón, Antonio Jurado Málaga y Francisco Pedraja Chaparro.

7/05 Precios inmobiliarios, renta y tipos de interés en España. 
*Autor:* Miguel Ángel López García.

8/05 Un análisis con microdatos de la normativa de control del endeudamiento local. 
*Autores:* Jaime Vallés Giménez, Pedro Pascual Arzoz y Fermín Cabasés Hita.

9/05 Macroeconomics effects of an indirect taxation reform under imperfect competition. 
*Autor:* Ramón J. Torregrosa.

10/05 Análisis de incidencia del gasto público en educación superior: nuevas aproximaciones. 
*Autora:* María Gil Izquierdo.

11/05 Feminización de la pobreza: un análisis dinámico. 
*Autora:* María Martínez Izquierdo.

12/05 Efectos del impuesto sobre las ventas minoristas de determinados hidrocarburos en la economía extremeña: un análisis mediante modelos de equilibrio general aplicado. 
*Autores:* Francisco Javier de Miguel Vélez, Manuel Alejandro Cardenete Flores y Jesús Pérez Mayo.

13/05 La tarifa lineal de Pareto en el contexto de la reforma del IRPF. 
*Autores:* Luis José Imedio Olmedo, Encarnación Macarena Parrado Gallardo y María Dolores Sarrión Gavilán.

14/05 Modelling tax decentralisation and regional growth. 
*Autores:* Ramiro Gil-Serrate y Julio López-Laborda.

15/05 Interactions inequality-polarization: characterization results. 
*Autores:* Juan Prieto-Rodríguez, Juan Gabriel Rodríguez y Rafael Salas.

16/05 Políticas de competencia impositiva y crecimiento: el caso irlandés. 
*Autores:* Santiago Díaz de Sarralde, Carlos Garcimartín y Luis Rivas.

17/05 Optimal provision of public inputs in a second-best scenario. 
*Autores:* Diego Martínez López y A. Jesús Sánchez Fuentes.

18/05 Nuevas estimaciones del pleno empleo de las regiones españolas. 
*Autores:* Javier Capó Parrilla y Francisco Gómez García.

19/05 US deficit sustainability revisited: a multiple structural change approach. 
*Autores:* Óscar Bajo-Rubio, Carmen Díaz-Roldán y Vicente Esteve.

20/05 Aproximación a los pesos de calidad de vida de los “Años de Vida Ajustados por Calidad” mediante el estado de salud autopercibido. 
*Autores:* Anna García-Altés, Jaime Pinilla y Salvador Peiró.

21/05 Redistribución y progresividad en el Impuesto sobre Sucesiones y Donaciones: una aplicación al caso de Aragón. 
*Autor:* Miguel Ángel Barberán Lahuerta.

22/05 Estimación de los rendimientos y la depreciación del capital humano para las regiones del sur de España. 
*Autora:* Inés P. Murillo.

23/05 El doble dividendo de la imposición ambiental. Una puesta al día. 
*Autor:* Miguel Enrique Rodríguez Méndez.
24/05 Testing for long-run purchasing power parity in the post bretton woods era: evidence from old and new tests.

Autor: Julián Ramajo Hernández y Montserrat Ferré Caracedo.

25/05 Análisis de los factores determinantes de las desigualdades internacionales en las emisiones de CO₂ per cápita aplicando el enfoque distributivo: una metodología de descomposición por factores de Kaya.

Autores: Juan Antonio Duro Moreno y Emilio Padilla Rosa.

26/05 Planificación fiscal con el impuesto dual sobre la renta.

Autores: Félix Domínguez Barrero y Julio López Laborda.

27/05 El coste recaudatorio de las reducciones por aportaciones a planes de pensiones y las deducciones por inversión en vivienda en el IRPF 2002.

Autores: Carmen Marcos García, Alfredo Moreno Sáez, Teresa Pérez Barrasa y César Pérez López.

28/05 La muestra de declarantes IEF-AEAT 2002 y la simulación de reformas fiscales: descripción y aplicación práctica.

Autores: Alfredo Moreno, Fidel Picos, Santiago Díaz de Sarralde, María Antiqueira y Lucía Torrejón.

2006

1/06 Capital gains taxation and progressivity.

Autor: Julio López Laborda.

2/06 Pigou’s dividend versus Ramsey’s dividend in the double dividend literature.

Autores: Eduardo L. Giménez y Miguel Rodríguez.

3/06 Assessing tax reforms. Critical comments and proposal: the level and distance effects.


4/06 Incidencia y tipos efectivos del impuesto sobre el patrimonio e impuesto sobre sucesiones y donaciones.

Autora: Laura de Pablos Escobar.

5/06 Descentralización fiscal y crecimiento económico en las regiones españolas.

Autores: Patricio Pérez González y David Cantarero Prieto.

6/06 Efectos de la corrupción sobre la productividad: un estudio empírico para los países de la OCDE.

Autores: Javier Salinas Jiménez y M.ª del Mar Salinas Jiménez.

7/06 Simulación de las implicaciones del equilibrio presupuestario sobre la política de inversión de las comunidades autónomas.

Autores: Jaime Vallés Giménez y Anabel Zárate Marco.

8/06 The composition of public spending and the nationalization of party sistems in western Europe.