

LOCAL GOVERNMENTS' ASYMMETRIC REACTIONS TO GRANTS: LOOKING FOR THE REASONS^(*)

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INDEX

- I. MOTIVATION
- II. RELATED LITERATURE
- III. EMPIRICAL ANALYSIS
- IV. CONCLUSIONS
- REFERENCES

ABSTRACT

The aim of this paper is twofold. Firstly, a data set corresponding to Galician municipalities is used to test asymmetries in the effects of cuts and increases in grants on total spending. Then political factors (electoral cycle, colour and political strength of local governments) and financial factors (relative levels of taxes and debt) are examined as possible explanations of them. Results strongly support the hypothesis of asymmetry. Recipients compensate part of the loss in grants by increasing other sources of revenues. Moreover, asymmetric responses to cuts in capital grants (earmarked) and current grants (unconditional) are not significantly different. This fiscal replacement form of asymmetry is explained by two factors: incumbent's ideology and financial capacity of getting into debt. Leftist incumbents and municipalities with a lower stock of debt are more prone to asymmetric choices. Once both factors are controlled, asymmetry disappears.

Key words: Local governments, Grants, Fiscal federalism, Spain.

JEL Classification: H71, H72, H77.

I. MOTIVATION

As stated in the body of work done on fiscal federalism, the very nature of grants is highly relevant in predicting their effects on subcentral fiscal choices. For instance, while block grants generate just income effects, matching grants also involve price effects. However, taking into account the nature of grants is not enough (Oates, 1999). Papers by Stine (1994), Gamkhar and Oates (1996), and Goodspeed (1998), among others, have shown the importance of differentiating between rises and falls in grants when evaluating their consequences on fiscal choices made by recipients. Moreover, although this literature on asymmetries in the effects of grants is usually related to the analysis of the “flypaper effect”¹, the question of asymmetry is not limited to the case of non-matching grants.

Why should asymmetries in the effects of grants be expected? Gramlich (1987) points out that cutting established spending programs boosted in the past by higher grants might be too costly from an electoral standpoint. By the same token, Stine (1994) and Volden (1999) point out the role played by special interest groups and bureaucracy that favor certain spending programmes. Stine (1994) also posits that the existence of fiscal illusion may explain a larger increase in own-source revenue to offset the loss of aid than would be predicted if response were symmetrical.

Nevertheless, the sign of the asymmetry might be just the opposite if taxpayers prefer fiscal restraint when faced with a permanent loss of aid (Stine, 1994). Hines and Thaler (1995) suggest that this kind of “super-flypaper effect” could be explained by assuming that taxpayers are loss averse, that is, much more sensitive to decreases in their welfare than to increases, and that they do not treat funds as fungible. As Heyndels and Van Driessche (1998) show, people would categorize in different accounts additional personal income (“private account”) and additional grants (“public account”). If the political cost of raising a tax were greater than the political benefit of a similar cut, and lack of fungibility causing grants to governments and private income to be different for households, asymmetry would be convincingly explained.

Therefore, both the sign and causes of asymmetry are questions to be answered by empirical research. While there are a number of works devoted to the former, only Volden (1999) goes into the econometric analysis of the latter. In particular, he confirms the relevance of “welfare boards” –its existence proxies what he calls “bureaucratic states”– to explain asymmetries in the effects of grants.

¹ The number of empirical works on the flypaper effect is huge. See, among others, the seminal paper by Courant *et al* (1979), and surveys by Barnett (1985), Wycoff (1991), and Bailey and Conolly (1998).



The hypothesis suggested in my paper is that asymmetries may be also explained by politics and the financial situation of granted governments. The response to a cut in grants will not be the same depending on the proximity of elections, incumbent's ideology, the political support enjoyed by the government, and current levels of taxes and debt.

For instance, while rightist incumbents might be more prone to reduce expenditures in order to compensate cuts in grants, leftist governments would prefer increasing other revenues. By the same token, the cost of cutting expenditures or raising taxes might be delayed if elections are near or political support to the incumbent is relatively low. On the other hand, fiscal stressed municipalities would enjoy less capacity to soften the effects of cuts in grants on expenditures than municipalities with lower levels of taxes and accumulated debt. In sum, fiscal reactions might well be different depending on the political and financial framework.

Analyzing the determinants of asymmetries is important for both policy design and methodology. Let us assume that data shows that factors indicated above are effectively relevant. On the policy ground, grantors should then take into account not only the nature of grants or the direction of changes in them, but also the political and financial state of granted governments in order to evaluate the expected consequences of modifications in grants policy. On the methodological ground, when the existence of asymmetries is not considered, econometric estimates reflect the average effect of changes –positive and negative– in grants. Discerning between increases and cuts supposes a methodological improvement. However, average effects are again estimated: one for rises and another for decreases. Including interactions between grants and other variables, as in Volden (1999), yields more precise estimates of the effects of changes in grants on fiscal choices and casts additional light on the determinants of asymmetries. Results obtained by Volden (1999) are illustrative. When interactions are not included into regressions, strong evidence of asymmetry for all states is found. Once interactions are included, asymmetries in fiscal choices made by non-bureaucratic states are discarded and, then, bureaucracy is identified as the main cause of asymmetries.

In order to test these arguments, panel data from a broad sample of Galician municipalities during the period 1985-1995 is used. Attention is paid to the effects of changes in both current and capital grants on total expenditures. Variability in the evolution of grants and in factors to be tested as determinants of asymmetries makes the panel appropriated for my purpose.

The paper is structured into five sections, including this one. In section two, literature on the asymmetric effects of grants is surveyed. In section three, econometric specification, data and econometric methodology is discussed. Section four presents the main results. Section five concludes.

II. RELATED LITERATURE

Most of previous studies on the asymmetric effects of grants depart from the functional relationship

$$Y = f(I, G, X_j) \quad [1]$$

where Y is taxes (T) or mostly expenditure (E), I is private income, G is grants, and X_j is a set of control variables. These relationships are then translated into the following econometric specification for panel data²

$$Y_{it} = \alpha_{i0} + \beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1})D_{it} + \beta_3 I_{it} + \sum_{h=1}^n \alpha_h X_{hit} + \varepsilon_{it} \quad [2]$$

with $D_{it} = 1$ if $G_{it} < G_{it-1}$ and $D_{it} = 0$ otherwise

In some cases lags of explanatory variables are included, or only subsets of expenditures or grants are considered.

According to Heyndels (2001), four types of situation should be made clear when examining the effects of grants on expenditures and taxes:

1. "Symmetry" means that the effects of falls and rises in grants on fiscal choices are the same in absolute values.
2. The "fiscal replacement form of asymmetry" involves a fall (rise) in spending (taxes) in response to a fall in grants lower than in the symmetric case. Recipients compensate part of the loss in grants by increasing taxes.
3. The "fiscal restraint form of asymmetry" involves a fall (rise) in spending (taxes) in response to a fall in grants higher than in the "symmetric case".
4. Finally, the "fiscal inducement form of asymmetry" involves a fall (rise) in spending (taxes) in response to a fall in grants higher than the reduction in grants.

Taking equation [2] as a reference, symmetry in the effects of falls and rises in grants involves $\beta_2 = 0$ in both expenditures and taxes equations. For instance, let us suppose that $\beta_1 = 0.5$ for E . One less euro in grants would reduce expenditures by $0.5 + \beta_2$ euros. If $\beta_2 = 0$ then we have the symmetric case. If $\beta_2 < 0$ expenditures fall by less than 50 cents. When $\beta_2 > 0$ expenditures fall by more than 50 cents. Finally, if $\beta_2 > 0.5$ expenditures decrease more than grants and taxes would be lower than before the reduction in grants. Table 1 synthesizes all possibilities.

In table 2 empirical studies are classified according to the budget side analyzed and the kind of asymmetry found. Gamkhar (2002) provides an excellent survey of studies published until 2000. Since then, Heyndels (2001) and Levaggi and Zanola (2003) have deepened into this question.

² Gamkhar and Olson (2001) compare it to other possibilities of modeling asymmetric responses. This econometric specification, originally proposed by Stine (1994), is supported by their analysis.

Table 1
A TAXONOMY OF ASYMMETRIES

| | Expenditures ⁽¹⁾ | | Taxes ⁽²⁾ | |
|--------------------------------------|---|-------------------------|---|-------------------------|
| Simmetry | $\left \frac{\Delta E}{\Delta G} \right = \left \frac{\nabla E}{\nabla G} \right $ | $\beta_2 = 0$ | $\left \frac{\nabla T}{\Delta G} \right = \left \frac{\Delta T}{\nabla G} \right $ | $\beta_2 = 0$ |
| Fiscal replacement form of asymmetry | $\left \frac{\Delta E}{\Delta G} \right > \left \frac{\nabla E}{\nabla G} \right $ | $\beta_2 < 0$ | $\left \frac{\nabla T}{\Delta G} \right < \left \frac{\Delta T}{\nabla G} \right $ | $\beta_2 < 0$ |
| Fiscal restraint form of asymmetry | $\left \frac{\Delta E}{\Delta G} \right < \left \frac{\nabla E}{\nabla G} \right $ | $\beta_2 > 0$ | $\left \frac{\nabla T}{\Delta G} \right > \left \frac{\Delta T}{\nabla G} \right $ | $\beta_2 > 0$ |
| Fiscal inducement form of asymmetry | $\left \frac{\Delta E}{\Delta G} \right < \left \frac{\nabla E}{\nabla G} \right > 1$ | $\beta_1 + \beta_2 > 1$ | $\left \frac{\nabla T}{\Delta G} \right > \left \frac{\Delta T}{\nabla G} \right < 1$ | $\beta_1 + \beta_2 > 0$ |

Notes: Δ indicates rise and ∇ fall. G are grants; E expenditures; and T taxes.

$$(1) \quad E_{it} = \alpha_{i0} + \sum_{j=1}^n \alpha_j X_{jit} + \beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1}) D_{it}.$$

$$(2) \quad T_{it} = \alpha_{i0} + \sum_{j=1}^n \alpha_j X_{jit} + \beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1}) D_{it}$$

with $D_{it} = 1$ if $G_{it} < G_{it-1}$ and $D_{it} = 0$ otherwise.

Table 2
PREVIOUS EMPIRICAL STUDIES

| | Kind of asymmetry | Grants type | Grantor | Granted | Country |
|---------------------------|-------------------|---|---------------------|---------------------------|--------------------|
| Stine (1994) | Inducement | Total grants | Federal government | Counties | USA |
| Stine (1994) | Replacement | Total grants | State | Counties | USA (Pennsylvania) |
| Gamkhar and Oates (1996) | Symmetry | Specific matching grants Non-matching grants | Federal government | States | USA |
| Goodspeed (1998) | Restraint | Non-matching grants | State | School districts | USA (New Jersey) |
| Volden (1999) | Replacement | Specific matching grants | Federal government | States | USA |
| Gamkhar (2000) | Replacement | Specific matching grants | Federal government | States and municipalities | USA |
| Heyndels (2001) | Replacement | Unconditional grants | Regional government | Municipalities | Belgium (Flanders) |
| Levaggi and Zanola (2003) | Inducement | Unconditional grants | Central government | Regions | Italy |

Although asymmetries are found in all the studies except in those of Gamkhar and Oates (1996), their type and size change significantly. What could explain this heterogeneity? According to Volden (1999) and Gamkhar (2002), the probability of detecting a fiscal replacement form of asymmetry for specific grants and spending programs is higher than in the case of block grants and total expenditures. Elected officials might wish to spread the grants cut across spending programs in order to avoid blame for deep spending cuts or tax increases. However, the nature of grants and spending does not seem a definitive explanation. Although restraint and inducement forms of asymmetry are related only to non-matching grants, papers by Heyndels (2001) and Stine (1994) demonstrate that total grants or unconditional grants may generate fiscal replacement as well. Moreover, Gamkhar and Oates (1996) find symmetric effects in the case of both matching and non-matching rate grants. Behavioral tendencies pointed out by Hines and Thaler (1995) could neither explain alone the wide variety of results.

In my opinion, a better understanding of differences in sign and size of asymmetries among fiscal tiers or countries requires an improvement in our capabilities to understand their causes. The nature of grants or the level of aggregation may be important, but also political, institutional, and financial variables. Once all potential mechanisms behind asymmetric responses were pinpointed, explaining differences in responses will be easier.

Additionally, econometrics is an important issue. For instance, Goodspeed (1998) shows how their results change significantly depending on the inclusion of time fixed effects or the use of first differences, and Gamkhar (2000) proves that different lengths of lags for explanatory variables incorporated to the model drives to divergent results. Levaggi and Zanola (2003) found problems of heteroskedasticity, perhaps because the size of granted governments differ significantly, and serial autocorrelation, probably due to intertemporal relationships among fiscal variables (Lago-Peñas, 2003). Contemporaneous cross-section correlations should be also tested, because timing in grants cuts may be similar. In addition, papers by Chernick (1979), Islam and Choudury (1990), Gamkhar and Oates (1996), Becker (1996), and Knight (2002) show the need to deal with the problem of grants endogeneity. Several arguments may explain inverse causality. Firstly, grants formula may relate the amount of aid received to tax effort and then expenditures. Secondly, grantors may assume that political benefits attached to grants are higher in high-spending jurisdictions, insofar as tax efforts reveal local preferences on public goods. Thirdly, higher spending may involve larger staffs. And the latter may imply more capacity to managing grants programs and lobbying granting agencies. In sum, a careful econometric treatment of data is crucial.

With respect to the causes of asymmetry, this paper focuses on two sets of explicative variables: political variables and financial variables. Although there are



already a number of works on the political economy of fiscal choices³, the question of asymmetry in the effects of grants has not been examined from this perspective. The idea to be tested in this paper is that responses of local governments to cuts in grants depend on ideology, electoral timing, and political support. The unpopular effects of cuts in grants on expenditures might be compensated to a greater extent if: i) the incumbent is leftist (Tavares, 2004); ii) elections are near (Poterba, 1994); and iii) political fragmentation leads to a formal coalition of parties as incumbent, or involves the need for governments in minority to get momentary supports from other political forces (Perotti and Kontopoulos, 2002; Tovmo and Fatch, 2002). Insofar as maintaining expenditures involves increasing own revenues, compensation will tend to be stronger if local governments are able to get into debt Spain's case, recipients enjoy high tax autonomy, and fiscal illusion applies⁴.

In this way, Castells *et al* (2004) show that the process of fiscal adjustment done by a wide sample of Spanish municipalities during the nineties was influenced very much by the political situation. Coalition and minority governments tend to delay fiscal adjustments when they face a shock in tax capacity, and a 70% of their shock is covered by an increase in the level of debt. Moreover, leftist governments tend to react through increases in tax effort to a greater extent than rightist governments. Finally, they find asymmetries in the response of local governments to shocks in their level of tax revenues. In absolute values, the reduction of tax effort in front of a positive shock on tax capacity is smaller than the increase of tax effort in front of a negative shock.

In any case, political variables may be relevant not just when explaining fiscal adjustments to shocks in grants, they should be also included as potential determinants of differences in expenditure levels. See Boix (2000) on incumbent's ideology, Blais and Nadeu (1992) on electoral cycles, and De Hann and Beekhuis (1999) on political fragmentation.

Finally, the effect of grants may differ depending on previous levels of taxes and debt in comparative terms. This is a question usually neglected in the literature on the effects of grants on fiscal variables⁵. However, governments from municipalities with higher levels of taxes and debt would enjoy less capacity to soften the effects of grants cuts on expenditures than others with lower levels of taxes and stocked debt. Moreover, yardstick comparisons made by voters force

³ See excellent surveys by Alesina *et al* (1998) and Castells *et al* (2004).

⁴ Bosch and Suárez-Pandiello (1994) and Solé-Ollé (2001) effectively found evidence of fiscal illusion in the case of Spanish municipalities.

⁵ One exception is the paper by Darby *et al* (2004). Using a data set from fifteen OECD countries, they try to estimate the effects of cuts in grants on subcentral expenditures. Countries are alternatively grouped by the degree of taxation autonomy and borrowing autonomy to test if it might explain differences in reactions to the cuts in grants. Both hypothesis are discarded.

governments to take into account fiscal choices made by other municipalities. For instance, using a wide set of Catalan municipalities, Solé-Ollé (2002) shows that local tax mimicking is more significant in electoral years, when the incumbent is rightist, and when political support enjoyed by the incumbent is lower.

III. EMPIRICAL ANALYSIS

Empirical analysis departs from equation [1], using expenditures as explained variable. Variable E is defined as total municipal expenditures and I is per capita households' income. Total grants (G) are divided into two categories: current grants (CG) and capital grants (KG). While CG are unconditional block grants, KG are earmarked and, in some cases, matching-grants. All monetary variables are deflated and expressed in euros per capita. A Spanish public consumption deflator is used. Unfortunately, there is only municipal data on households' income for 1996. Therefore, provincial growth rates of per capita households' income to 1996 municipal data have been applied⁶. Table 3 shows data sources of all variables used in this section.

The rest of explicative variables are the following:

- Incumbent's ideology ($LEFT$). $LEFT = 1$ for leftist governments and $LEFT = 0$ otherwise.
- The electoral cycle (CY). $CY = 1$ in an electoral year, and $CY = 0$ otherwise.
- The electoral support enjoyed by the incumbent party (MA). $MA = 1$ when $N \geq N^*$ and 0 if $N < N^*$, where N is the number of seats of the incumbent party and N^* is the threshold for absolute majority. When one political party does not enjoy absolute majority, the support of other political forces –formal coalitions or momentary supports– is needed to rule. The need of bargaining with other political actors involves a lower autonomy when dealing with cuts in grants.
- Relative taxes (RT). $RT = \frac{T}{I} - \left(\frac{1}{n} \cdot \sum_{i=1}^n \frac{T_i}{I_i} \right)$ where T are per capita local taxes, I is per capita households' income, and n is the number of municipalities into the same bracket of population. In the Spain's case, the array

⁶ Data for municipality i in year t is calculated according to the formula: $I_{it} = \frac{I_{i1996}}{\prod_{m=t+1}^{1996} (1 + g_{pm})}$

where g_{pm} is the nominal growth rate corresponding to province p in year m . There are four provinces. Provincial growth rates for 1986 were not available.

of mandatory services provided by municipalities increases with population size. Legal thresholds are imposed in 5.000, 20.000 and 50.000 populations. Accordingly, four brackets may be defined.

- Relative debt (*RD*). $RD = \frac{IP}{CR} - \left(\frac{1}{n} \cdot \sum_{i=1}^n \frac{IP_i}{CR_i} \right)$ where *IP* are interest payments for the debt, *CR* current revenues, and *n* is the number of municipalities into the same bracket of population. While the stock of debt is likely the most relevant to define local governments' margins of manoeuvre, data is not available. Financial capacity for getting into debt is then proxied by the weight of interest payments on current revenues⁷.
- Dummies *D*, *DCG*, and *DKG*. *D* = 1 when total grants rise and 0 otherwise, *DCG* = 1 when current grants rise and 0 otherwise, *DKG* = 1 when capital grants rise and 0 otherwise.

Table 3
DATA SOURCES

| Name | Definition | Data Source |
|------|--|--|
| CG | Current grants | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| E | Total expenditures | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| CY | Electoral cycle | |
| D | Dummy variable to control cuts in total grants | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| DCG | Dummy variable to control cuts in current grants | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| DKG | Dummy variable to control cuts in capital grants | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| G | Granted revenues | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| I | Per capita households' income | Instituto Galego de Estatística (www.ige.xunta.es) and Instituto Nacional de Estadística (www.ine.es) |
| KG | Capital grants | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |

(Keep.)

⁷ Vallés *et al* (2003) adopt a similar solution.

(Continuation.)

| Name | Definition | Data Source |
|------|----------------------|--|
| LEFT | Incumbent's ideology | Ministerio del Interior (www.mir.es) |
| MA | Political support | Ministerio del Interior (www.mir.es) |
| P | Population | Instituto Nacional de Estadística (www.ine.es) |
| RD | Relative debt | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) |
| RT | Relative taxes | Conselleria de Economía e Facenda (www.cixtec.es/conselleria) Instituto Galego de Estatística (www.ige.xunta.es) and Instituto Nacional de Estadística (www.ine.es) |

Data description

Initial database comprises all 313 Galician municipalities observed from 1985 to 1995. The main justification for using information from just one of the 17 Spanish regions is that available data is not homogeneous between regions. Difficulties in building a broad and reliable database are cumbersome when municipalities from several regions want to be taken into account.

Moreover, the lack of data for some municipalities in some years makes the panel unbalanced. Availability of information is also the reason for using data for the period 1985-1995.

The evolution of aggregated data is shown in table 4. Simple means are used. Grants are the main source of revenues for municipalities. More than 60% of non-financial expenditures is financed by means of grants (row 1). Depending on the year, current grants vary between 41% and 50% (row 2), and capital grants between 13% and 26% (row 3).

If figures are weighted by households' income, municipal expenditures are around 3% of private income (row 4), and taxes around 1% (row 5). Note that previous figures would change if weighted means –using municipal population as weight– were used. Per capita local expenditures and taxes significantly grow with population.

Rows 6 to 8 of table 4 show the percentage of municipalities suffering a cut in grants. Remember that all monetary variables are deflated and expressed in euros per capita. Percentages are quite high, particularly at the end of the sample. Economic downturn in 1993-1995 (the Spanish economy grew by -1.0% in 1993) would be the main explanation for those wide cuts in grants.

Table 4
DYNAMICS OF GRANTS AND EXPENDITURES 1986-1995 (Simple means)

| Year | G/E | CG/E | KG/E | G/I | E/I | Cuts in G | Cuts in CG | Cuts in KG |
|------|-------|-------|-------|--------|--------|-----------|------------|------------|
| 1986 | 0.617 | 0.482 | 0.135 | 0.0192 | 0.0315 | 37.31% | 34.01% | 30.77% |
| 1987 | 0.581 | 0.443 | 0.138 | 0.0172 | 0.0299 | 54.48% | 63.01% | 34.55% |
| 1988 | 0.615 | 0.438 | 0.177 | 0.0193 | 0.0312 | 20.97% | 17.48% | 26.42% |
| 1989 | 0.648 | 0.464 | 0.184 | 0.0203 | 0.0313 | 15.19% | 10.16% | 35.37% |
| 1990 | 0.681 | 0.493 | 0.188 | 0.0213 | 0.0314 | 16.35% | 7.20% | 34.00% |
| 1991 | 0.616 | 0.416 | 0.200 | 0.0206 | 0.0328 | 34.92% | 32.33% | 34.50% |
| 1992 | 0.762 | 0.504 | 0.258 | 0.0261 | 0.0341 | 20.98% | 12.11% | 35.94% |
| 1993 | 0.678 | 0.431 | 0.246 | 0.0230 | 0.0336 | 60.23% | 71.07% | 54.23% |
| 1994 | 0.636 | 0.417 | 0.219 | 0.0199 | 0.0314 | 65.08% | 63.52% | 57.94% |
| 1995 | 0.650 | 0.423 | 0.227 | 0.0199 | 0.0314 | 51.22% | 32.34% | 56.89% |

Econometric specification

The general econometric specification used is more sophisticated than [2] in order to incorporate additional regressors and interactions:

$$E_{it} = \alpha_{i0} + \beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1})D_{it} + \beta_3 I_{it} + \sum_{h=1}^p \alpha_h X_{hit} + \sum_{h=1}^q \gamma_h W_{hit} (G_{it} - G_{it-1})D_{it} + \lambda E_{it-1} + \varepsilon_{it} \quad [3]$$

with $D_{it} = 1$ if $G_{it} < G_{it-1}$ and $D_{it} = 0$ otherwise

In the equation X and W are two non-coincident sets of variables. The former is incorporated to explain the level of variable E . Interactions are included to test the relevance of variables W_h to explain asymmetries. When G is rising, the effect of grants on expenditures is $\beta_1 G_{it}$. On the contrary, when G is decreasing, the effect is $\beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1}) + \sum_{h=1}^q \gamma_h W_{hit} (G_{it} - G_{it-1})$. While β_2 does not clarify the reasons of asymmetric responses, parameters γ_h capture the influence of political and financial factors on asymmetric behavior. If variables W_h are omitted, the estimated effect of grants would be $\beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1})$ and $\beta_2 (G_{it} - G_{it-1})$ should be interpreted as the "average" marginal asymmetric effect of grants. Individual effects are included to control for potential cross-section heterogeneity. Lagged endogenous variable is included to deal with sluggishness in adjustments.

Econometric work is structured into three steps. Firstly, a reduced specification excluding terms related to asymmetry is estimated by OLS. Secondly, several tests are carried out to detect potential heterogeneity of intercepts and slopes, multi-

collinearity, serial autocorrelation, heteroskedasticity, endogeneity of regressors, and contemporaneous correlation of the errors. According to results, estimation method and specification are chosen. After analyzing basic results, interactive terms are included in order to explain the sources of asymmetric responses. Lastly, differences between current grants and capital grants are analyzed.

Due to econometric reasons, municipalities with less than 50% of observations available were excluded. As it will be shown, disturbances are panel heteroskedastic and contemporaneously correlated across panels. Computing the corresponding variance-covariance matrix is problematic when there are many municipalities with few observations. Therefore, the number of municipalities drops from 313 to 264 (-15.7%) and the number of observations from 2603 to 2391 (-8.1%) Because lagged values of variables are used, the first observation corresponds to 1986.

Econometric results

Estimates of equation 3 are shown in table 5. Estimation method is OLS. Individual fixed-effects are highly significant. Estimates of [1] are reported in table 6. A Wald test on the need of individual effects was carried out. The hypothesis of homogeneity of intercepts should be rejected (p-value=0.000).

Multicollinearity and serial autocorrelation are not a problem. Multiple correlations among regressors in row 1 are relatively low. Assuming a common AR(1) process with the same ρ_i and using OLS residuals (e_{it}), the following con-

sistent estimator for panel data was estimated: $\hat{\rho} = \frac{\sum_{i=1}^n \sum_{t=2}^t e_{it} \cdot e_{it-1}}{\sum_{i=1}^n \sum_{t=2}^t e_{it}^2}$. The hypothe-

sis of common autocorrelation coefficients was verified by using a Wald test. Estimated parameter is very low ($\hat{\rho} = -0.07$).

Exogeneity of G_t and $(G_t - G_{t-1})D_t$ was verified by means of the Hausman test. In both cases, corresponding p-value was high (0.270 and 0.192, respectively). Hence, the null hypothesis of exogeneity is not rejected. On the contrary, the Brown-Forsythe test of equal variances in each subgroup of OLS residuals detected panel heteroskedasticity (p-value=0.000). Moreover, two additional tests were carried out: the Breusch and Pagan's test of cross-section dependence⁸,

⁸ $\lambda_{LM} = T \sum_{i=2}^n \sum_{j=1}^{i-1} r_{ij}^2$ where r_{ij} is the sample estimate of the pair-wise correlation of the residuals.

See Breusch and Pagan (1980). Both correlations among OLS residuals and FGLS residuals were alternatively used. Because the panel is unbalanced, the number of individual observations (T) is proxied by the average. Serial correlation holds when using a balanced panel of municipalities with full information.

and the simple alternative proposed by Pesaran (2004) for panels with a large cross section dimension⁹. Both revealed the presence of contemporaneous correlations (p-value=0.00 in both cases). It was not removed when time fixed effects were included into regressions.

The variance estimator proposed by White (1980) deals with ordinary not panel heteroskedasticity, and it does not account for contemporaneous cross-section correlations. And there are a number of pitfalls associated with the application of SUR weighted least squares (sometimes referred to as the Parks estimator) with a small number of time periods as in this case (Beck *et al*, 1993; Beck and Katz, 1995; Beck, 2001). As a practical solution, those authors suggest to retain OLS parameter estimates (still consistent), replacing standard errors by panel-corrected standard errors (PCSE). The new covariance matrix is the following, where covariances σ_{ij} are calculated by using OLS residuals:

$$\text{Var}(\hat{\beta}) = \left(\sum_{i=1}^n X_i' X_i \right)^{-1} \left(\sum_{i=1}^n \sum_{j=1}^n \sigma_{ij} X_i' X_j \right) \left(\sum_{i=1}^n X_i' X_i \right)^{-1} \quad [5]$$

The need for using PCSE limits the nature of regressors included into regressions and the way of modeling individual effects. Time invariant control variables, such as surface or population in the short-run, are incompatible with individual fixed effects. They are simply absorbed into the fixed-effect. Although the individual random-effects treatment will allow the model to contain those observed time invariant characteristics, PCSE errors are just available for the individual fixed-effects model.

Results show very different effects of rises in grants and private income. While one more euro in grants increases expenditures by around 0.9 euros, the same increase in private income is translated into a very low rise in local public expenditures (0.01). Both coefficients are highly significant (p-value=0.000). Secondly, results show a highly significant “fiscal replacement form of asymmetry” (p-value=0.000). Taking estimates from row 1, while one more euro rises expenditures by 0.885 euros, one less euro would cut expenditures by just 0.672 euros.

Homogeneity of slopes was tested to verify that they were not significantly different for municipalities of different sizes. Population may be important for at least two reasons: economies of scale in the provision of local public services¹⁰, and differences in the range of powers of municipalities. As it was pointed out above, the array of mandatory services provided by Spanish municipalities increases with population size. Legal thresholds are imposed in 5.000, 20.000 and 50.000 populations. Four dummy variables (P_1 to P_4) were then defined to de-

⁹ $CD = \sqrt{\frac{2T}{n(n-1)} \left(\sum_{i=2}^n \sum_{j=1}^{i-1} r_{ij} \right)}$.

¹⁰ See Bosch and Solé-Ollé (2002) for the Spanish case.

limitate four brackets: P_1 values 1 for municipalities with a population lower than 5000, and 0 otherwise; P_2 values 1 for municipalities with a population between 5001 and 20000, and 0 otherwise; and so on. Econometric specification was the following

$$E_{it} = \alpha_{i0} + \beta_1 G_{it} + \beta_2 (G_{it} - G_{it-1})D_{it} + \beta_3 I_{it} + \sum_{h=2}^4 \delta_h P_h G_{it} + \sum_{h=2}^4 \delta_{2h} P_h (G_{it} - G_{it-1})D_{it} + \sum_{h=2}^4 \delta_{3h} P_h I_{it} + \varepsilon_{it} \quad [4]$$

Homogeneity would involve $\delta_{12} = \delta_{13} = \delta_{14} = \delta_{22} = \delta_{23} = \delta_{24} = \delta_{32} = \delta_{33} = \delta_{34} = 0$. According to results from a Wald test, this hypothesis may not be rejected at 1% level of significance. Results are not shown in table 5.

Although residuals are not correlated, lagged endogenous variable is included in row 3 in order to test sluggishness in adjustments. Unfortunately, with a short time span including individual fixed-effects and lags of the explained variable as regressor biases OLS estimates. Using a GMM estimator would have been a better choice (Arellano and Bond, 1991; Arellano, 2003). However, results clearly reject the need of incorporating E_{t-1} as regressor (p-value=0.647).

In row 4 total grants are divided into current and capital grants. While the marginal propensity to spending in the case of capital grants is 0.910, it falls until 0.768 in the case of current grants. Confidence intervals for both coefficients at 95% are (0.661, 0.876) and (0.837, 0.982), and the hypothesis of equality of coefficients may be rejected according to a Wald test (p-value=0.057). Moreover, asymmetry in the effects of grants seems stronger in the case of capital grants (-0.226 *versus* -0.165). However, the hypothesis of equality should not be rejected in this case (p-value=0.577). Corresponding confidence intervals are (-0.373, -0.079) and (-0.299, -0.030) respectively.

In rows 5 to 9 political variables are included to explain expenditure levels. Sample is reduced due to votes of censure. According to data gathered by Márquez (2004), 48 observations must be dropped due to change of incumbents during the term of office. As expected, expenditures tend to be lower in the case of one-single party majority governments (*MA*), and higher in electoral years (*CY*) and when incumbents are leftist (*LEFT*). However, statistical significance of variables is very low. Only variable *CY* is significant at 10% in rows 5 and 9. High p-values remain in rows 6 to 9 of table 5.

Interactions with political variables are included in row 6. Only the interaction $LEFT_t(G_t - G_{t-1})D_t$ is statistically significant. Corresponding p-value is 0.006 and coefficient is -0.323. Insofar as p-value corresponding to the term $(G_t - G_{t-1})D_t$ rises dramatically in row 6 (p-value=0.509), asymmetry can be fully explained by political ideology. Leftist incumbents are more prone to a fiscal replacement form of asymmetry. Asymmetry induced by political ideology is much more relevant:



the estimated coefficient of $LEFT_t(G_t-G_{t-1})D_t$ is -0.313. For a leftist incumbent and setting aside the effect of financial variables, one more euro rises expenditures by 0.951 euros, while one less euro cuts expenditures by just 0.628 euros, on average. For non-leftist governments there are no asymmetries. It has been verified that this result is not explained by multicollinearity. The analysis of simple and multiple correlation among regressors revealed a high correlation between $MA_t(G_t-G_{t-1})D_t$ and $(G_t-G_{t-1})D_t$. In order to test its influence on results, both regressors were dropped alternatively. Previous conclusions did not change in any of two resulting regressions (row 7 and 8).

The relevance of financial variables is tested in row 9. Because data for calculating RT_{1985} was not available, the sample covers the period 1987-1995 only. The interaction corresponding to taxes is scarcely significant, but interaction $RD_{t-1}(G_t-G_{t-1})D_t$ is significant at 5% level. According to the sign of the estimated coefficient, the higher the level of debt, the lower the asymmetry. Incumbents with higher levels of debt would enjoy less capacity to compensate cuts in grants.

Do results mean that municipalities ruled by non-leftist incumbents and with a level of debt over the average could experience a "fiscal inducement form of asymmetry"? The answer is negative. Descriptive statistics corresponding to interaction $RD_{t-1}(G_t-G_{t-1})D_t$ reveal that it varies between -1.494 and +0.048. Because the estimated coefficient of $RD_{t-1}(G_t-G_{t-1})D_t$ is +0.037 asymmetry induced by the stock of debt would be between -0.055 and +0.002. Anyway, the coefficient corresponding to $(G_t-G_{t-1})D_t$ in row 9 is scarcely lower than in row 5. It drops from -0.211 to -0.202 and it is still highly significant (p-value=0.051). Therefore, asymmetric reactions are just partially explained by financial variables.

Table 5
ECONOMETRIC ESTIMATES OF EQUATION [3]

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|--------------------|------------------------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|------------------|-------------------|
| I_t | 0.011 (0.000) [0.000] | 0.012 [0.000] | 0.013 (0.000) | 0.012 [0.000] | 0.009 [0.000] | 0.009 [0.000] | 0.009 [0.000] | 0.010 [0.000] | 0.009 [0.000] |
| G_t | 0.885 (0.000) [0.000] | 0.909 [0.000] | 0.826 (0.000) | | 0.960 [0.000] | 0.951 [0.000] | 0.951 [0.000] | 0.949 [0.000] | 0.958 [0.000] |
| CG_t | | | | 0.768 [0.000] | | | | | |
| KG_t | | | | 0.910 [0.000] | | | | | |
| $(G_t-G_{t-1})D_t$ | -0.213 (0.000) [0.000] | -0.213 [0.000] | -0.166 (0.000) | | -0.211 [0.000] | -0.059 [0.509] | -0.068 [0.186] | | -0.202 [0.051] |

(Keep.)

(Continuation.)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|------------------------------|-------|--------------------|------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| $(CG_t - CG_{t-1})DCG_t$ | | | | -0.165 [0.017] | | | | | |
| $(KG_t - KG_{t-1})DKG_t$ | | | | -0.226 [0.003] | | | | | |
| E_{t-1} | | | 0.017 (0.649) | | | | | | |
| MA_t | | | | | 0.003 [0.830] | 0.000 [0.985] | 0.001 [0.959] | 0.002 [0.899] | 0.003 [0.857] |
| CY_t | | | | | 0.042 [0.089] | 0.032 [0.203] | 0.033 [0.202] | 0.032 [0.220] | 0.044 [0.090] |
| $LEFT_t$ | | | | | 0.010 [0.576] | -0.013 [0.523] | -0.019 [0.520] | -0.013 [0.527] | -0.003 [0.840] |
| $MA_t(G_t - G_{t-1})D_t$ | | | | | | -0.010 [0.895] | | -0.063 [0.180] | |
| $CY_t(G_t - G_{t-1})D_t$ | | | | | | -0.106 [0.277] | -0.106 [0.277] | -0.115 [0.224] | |
| $LEFT_t(G_t - G_{t-1})D_t$ | | | | | | -0.323 [0.006] | -0.324 [0.006] | -0.333 [0.003] | |
| $RT_{t-1}(G_t - G_{t-1})D_t$ | | | | | | | | | -0.095 [0.161] |
| $RD_{t-1}(G_t - G_{t-1})D_t$ | | | | | | | | | 0.037 [0.040] |
| R^2 | 0.887 | 0.889 | — | 0.888 | 0.898 | 0.900 | 0.899 | 0.899 | 0.899 |
| Sample size | 2391 | 2391 | 2082 | 2391 | 2343 | 2343 | 2343 | 2343 | 2096 |
| Estimation Method | OLS | OLS ^(*) | GMM | OLS | OLS | OLS | OLS | OLS | OLS |

Notes: Below coefficients appears, in parenthesis, p-values corresponding to standard t-statistics and, in brackets, those corresponding to robust t-statistics calculated using Panel Corrected Standard Errors (PCSE). R^2 is the coefficient of determination. OLS means Ordinary Least Squares and GMM Generalized Method of Moments. (*) Including time fixed-effects.

IV. CONCLUSIONS

This paper demonstrates that reactions to rises and cuts in grants by a wide sample of Galician municipalities are not symmetric. Marginal propensity to spend when grants are rising is around 0.9. Marginal propensity to cut expenditures when grants are falling will be around 0.7. This is what in section 2 is called a “fiscal replacement form of asymmetry”. This result is in line with those by Heyndels (2001) for Flemish municipalities and Stine (1994) Pennsylvania coun-



ties. Moreover, while asymmetry seems to be higher for capital grants than for current grants, this difference is not statistically significant.

How do municipalities compensate part of the loss in grants by increasing taxes or debt? According to econometric results, incumbent's ideology and the stock of debt in relative terms are enough to explain asymmetries. On the contrary, electoral support enjoyed by the incumbent party, electoral cycle, and previous level of taxes are not statistically significant. Leftist incumbents ruling a municipality characterized by a stock of debt below the average would be more prone to maintain expenditures when grants drop. On the contrary, symmetry applies in the case of municipalities ruled by non-leftist incumbents.

Those results have extreme importance for both policy design and methodology. On the policy ground, they mean that grantors should take into account the incumbent's ideology and the stock of debt in relative terms in order to evaluate the expected consequences of modifications in grants policy. On the methodological ground, when the existence of asymmetries is not considered, econometric estimates reflect the average effect of changes –positive and negative– in grants. Including interactions between grants and other variables yields more precise estimates of the effects of changes in grants on fiscal choices and casts additional light on the determinants of asymmetries.

Lastly, the observation of acute divergences in the kind and size of asymmetries for different fiscal tiers or countries should boost research efforts. Suggesting and testing potential explicative mechanisms, as done in this paper, is the first step. Combining differences in the relevance of those mechanisms with divergences in the nature of grants and in other institutional factors, such as controls on subcentral indebtedness or subcentral tax autonomy, in order to construct a general explanation should be the next one.

REFERENCIAS

- ALESINA, A.; PEROTTI, R., and TAVARES, J. (1998): "The Political Economy of Fiscal Adjustments", *Brookings Papers on Economic Activity*, 1, 197-266.
- ARELLANO, M., and BOND, S. R. (1991): "Some Tests of Specification for Panel data. Monte Carlo Evidence and An Application to Employment Equations", *Review of Economic Studies*, 58, 277-297.
- ARELLANO, M. (2003): *Panel Data Econometrics*, Oxford: Oxford University Press.
- BAILEY, S. J., and CONOLLY, S. (1998): "The Flypaper Effect: Identifying Areas for Further research", *Public Choice*, 95, 335-361.
- BARNET, R. R. (1985): "On the Flypaper Theory of Local Government Response to Grants-in-Aid", *Environment and Planning C: Government and Policy*, 3, 341-348.
- BECK, N.; KATZ, J. N.; ÁLVAREZ, M; GARRETT, G., and LANGE, P. (1993): "Government Partisanship, Labor Organization, and Macroeconomic Performance: A Corrigendum", *American Political Science Review*, 87, 945-948.
- BECK, N., and KATZ, J. N. (1995): "What To Do (and not To Do) with Time-Series Cross-Section Data", *American Political Science Review*, 89, 634-647.
- BECK, N. (2001): "Time-Series Cross-Section Data: What have We Learned in the Last Few Years?", typescript.
- BECKER, E. (1996): "The Illusion of Fiscal Illusion", *Public Choice*, 86, 85-102.
- BLAIS, A., and NADEAU, R. (1992): "The Electoral Budget Cycle", *Public Choice*, 74, 389-403.
- BOIX, C. (2000): "Partisan Governments, the International Economy, and Macroeconomic Policies in Advanced Nations, 1960-93", *World Politics*, 53, 38-73.
- BOSCH, N., and SUÁREZ-PANDIELLO, J. (1994): *Hacienda local y elección pública: el caso de los municipios españoles*, Bilbao: FBBVA.
- BOSCH, N., and SOLÉ-OLLÉ, A. (2002): *On the Relationship between Local Authority Size and Expenditure: Lessons from the Design of Intergovernmental Transfers in Spain*, mimeo.
- BREUSCH, T. S., and PAGAN, A. R. (1980): "The Lagrange Multiplier Test and its Application to Model Specifications in Econometrics", *Review of Economic Studies*, 47, 239-253.
- BROWN, M. B., and FORSYTHE, A. B. (1974): "Robust Tests for the Equality of Variances", *Journal of the American Statistical Association*, 69, 364-367.
- CASTELLS, A.; ESTELLER, A., and VILALTA, M. (2004): "Full Characterization of the Political Economy of Fiscal Adjustment: Evidence from Spanish Municipalities", Institut d'Economia de Barcelona (IEB), typescript.

- CHERNIK, H. (1979): "An Economic Model of the Distribution of Project Grants", in MIESZKOWSKI, P., and OAKLAND, W. H. (Eds.): *Fiscal federalism and Grants-in-Aid*, Washington, DC: The Urban Institute.
- COURANT, P. N.; GRAMLICH, E. M., and RUBINFELD, D. (1979): "The Stimulative Effects of Intergovernmental Grants: Or Why Money Sticks Where It Hits", in MIESZKOWSKI, P., and OAKLAND, W. (Eds.): *Fiscal Federalism and Grants-in-Aid*, Washington, D.C.: The Urban Institute, 5-21.
- DARBY, J.; MUSCATELLI, A., and ROY, G. (2004): "Fiscal federalism, Fiscal Consolidations and Cuts in Central Government Grants: Evidence from an Event Study", typescript.
- DE HAAN, J., and BEEKHUIS, G. (1999): "The Weak Government Thesis: Some New Evidence", *Public Choice*, 101, 163-176.
- GAMKHAR, S. (2000): "Is the Response of State and Local Highway Spending Symmetric to Increases and Decreases in Federal Highway Grants", *Public Finance Review*, 28, 3-25.
- (2002): *Federal Intergovernmental Grants and the States: Managing Devolution*, Cheltenham: Edward Elgar.
- GAMKHAR, S., and OATES, W. E. (1996): "Asymmetries in the Response to Increases and Decreases in Intergovernmental Grants: Some Empirical Findings", *National Tax Journal*, 49, 501-512.
- GAMKHAR, S., and OLSON, J. (2001): "Asymmetric Responses in Economic Models", *Journal of Policy Modelling*, 23, 553-568.
- GOODSPEED, T. (1998): "The Relationship Between State Income Taxes and Local Property Taxes: Education Finance in New Jersey", *National Tax Journal*, 51, 219-238.
- GRAMLICH, E. M. (1987): "Federalism and Federal Deficit Reduction", *National Tax Journal*, 51, 219-238.
- GREENE, W. H. (1997): *Econometric Analysis (Third Edition)*, New Jersey: Prentice Hall.
- HEYNDELS, B. (2001): "Asymmetries in the Flypaper Effect: Empirical Evidence for the Flemish Municipalities", *Applied Economics*, 33, 1329-1334.
- HEYNDELS, B., and VAN DRIESSCHE, F. (1998): "Mental Accounting in Public Sector Budgeting: An Empirical Analysis for the Flemish Municipalities", *Eastern Economic Journal*, 24, 381-94.
- (2002): "How Municipalities react to Budgetary Windfalls", *Economic of Governance*, 3, 211-226.
- HINES, J. R., and THALER, R. H. (1995): "The Flypaper Effect", *Journal of Economic Perspectives*, 9, 217-226.
- ISLAM, M. N., and CHOUDHURY, S. A. (1990): "Testing the Exogeneity of Grants to Local Governments", *The Canadian Journal of Economics*, 23, 676-692.

- KNIGHT, B. (2002): "Endogenous Federal Grants and Crowd-out of State Government Spending: Theory and Evidence from the Federal Highway Aid Program", *The American Economic Review*, 92, 71-92.
- LAGO-PEÑAS, S. (2003): "Capital Grants and Regional Public Investment in Spain: Fungibility of Aid or Crowding-in Effect?", *Estudios sobre la Economía Española*, EEE162, FEDEA (www.fedea.es).
- LEVAGGI, R., and ZANOLA, R. (2003): "Flypaper Effect and Sluggishness: Evidence from Regional Health Expenditure in Italy", *International Tax and Public Finance*, 10, 535-547.
- MARQUEZ, G. (2004): "Futuro y perspectivas del gobierno local en Galicia", typescript.
- OATES, W. E. (1999): "An Essay on Fiscal Federalism", *Journal of Economic Literature*, 37, 1120-1149.
- PEROTTI, R., and KONTOPOULOS, Y. (2002): "Fragmented Fiscal Policy", *Journal of Public Economics*, 86, 191-222.
- PESARAN N. H. (2004): "General Diagnostic Tests for Cross-Section dependence in Panels", *CESifo Working Paper*, 1249.
- POTERBA, J. M. (1994): "State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics", *Journal of Political Economy*, 102, 799-821.
- TAVARES, J. (2004): "Does Right or Left Matter? Cabinets, Credibility and Fiscal Adjustments", *Journal of Public Economics*, forthcoming.
- TOVMO, P., and FALCH, T. (2002): "The Flypaper Effect and Political Strength", *Economics of Governance*, 3, 153-170.
- SOLÉ-OLLÉ, A. (2001): "Budget Spillovers in a Metropolitan Area: Typology and Empirical Evidence", *Document de Treball 2001/5*. Institut d'Economia de Barcelona.
- (2002): "Tax Mimicking and Electoral Control: An Empirical Analysis of Local Tax Setting in Spain", comunicación presentada en el *IX Encuentro de Economía Pública*, Vigo 7 y 8 de febrero de 2002.
- STINE, W. F. (1994): "Is Local Government Revenue Response to Federal Aid Symmetrical? Evidence from Pennsylvania County Governments in an Era of Retrenchment", *National Tax Journal*, 47, 799-816.
- VALLÉS, J.; PASCUAL, P., and CABASÉS, F. (2003): "Endeudamiento municipal y efectividad de las restricciones institucionales de disciplina crediticia (1988-2000)", *Hacienda Pública Española*, 166, 9-47.
- VOLDEN, C. (1996): "Asymmetric Effects of Intergovernmental Grants: Analysis and Implications for Welfare Policy", *Publius: The Journal of Federalism*, 29 (3), 51-73.
- WYCOFF, P. G. (1991): "The Elusive Flypaper Effect", *Journal of Urban Economics*, 30, 310-328.

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Páginas 38.
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Páginas 28.
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Páginas 40.
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Páginas 28.
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Páginas 40.

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Páginas 24.

2002

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Páginas 52.
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Páginas 48.
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Páginas 40.
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Páginas 36.

2003

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Páginas 44.
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Páginas 56.
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Páginas 40.
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Páginas 40.
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Páginas 44.
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Páginas 40.

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Páginas 32.
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Páginas 48.
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Páginas 48.
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Páginas 44.
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Páginas 52.
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Páginas 80.
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Páginas 44.
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Páginas 36.
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Páginas 40.
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Páginas 32.
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Páginas 60.
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Páginas 40.
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Páginas 44.

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Páginas 48.
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Páginas 44.
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Páginas 44.
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Páginas 44.
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Páginas 76.
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Páginas 52.
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Páginas 44.

2004

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Páginas 40.
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Páginas 44.
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Páginas 72.
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Páginas 60.

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Páginas 56.
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Páginas 52.
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Páginas 48.

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Páginas 68.
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