

The Spanish Sovereign Debt Crisis

The Impact of Politics on Fiscal Outcomes in Subnational Governments

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ABSTRACT

This thesis investigates fiscal policies of subnational governments in Spain, a country whose regions are currently mired in a crisis of solvency. Many previous studies have suggested that political factors play an important role in determining deficits, spending, and debt. This paper examines the effect of such political factors as the party in power, the electoral cycle, the competitiveness of regional politics, and the degree of autonomy a region has, on fiscal outcomes, especially discretionary spending. The results show that much of the variation in fiscal outcomes can be explained by economic factors. However, some of the political factors are also relevant. The competitiveness of regional politics, especially whether the regional government is a coalition, or has just come to power, does affect fiscal outcomes, though not always as previous literature has found. Certain aspects of the Spanish system, like transfers from the federal government to regional governments, are also significant, in most cases in accordance with the literature. However, while this paper examines specifically what affects discretionary spending, here the results are less conclusive, and more work may be needed to determine not only what affects discretionary parts of spending, but what makes certain programs discretionary or non-discretionary.

1. Introduction

This thesis investigates fiscal policies of subnational governments in Spain, a country whose regions are currently mired in a crisis of solvency. Subnational debt crises have plagued countries more and more in the past few decades as these entities have gained more control over their own finances, and this problem has been exacerbated in many places due to the most recent global economic crisis. State and local governments from Latin America, to Eastern Europe, and even the US, have had to deal with constraints on their ability to finance their own spending. Barring a change in the policies governing subnational governments' ability to determine their own spending and tax policies, this will not be the last time that countries have to deal with unsound fiscal policies at this level, so a fuller understanding of these crises may help to at least partially guard against them.

The Spanish case is particularly interesting for several reasons. First, Spain's regions gained a degree of autonomy only about 30 years ago, so the federalist system there is new and still evolving. Thus, a study of debt in these regions (called "Comunidades Autónomas," meaning Autonomous Communities) may show how these changes in the federal system have changed the state of regional debt policies. Additionally, the current crisis seems to follow no obvious pattern, with the states facing imminent insolvency including some of the wealthiest and most industrialized regions in the country as well as several primarily agricultural regions, and the list of fiscally sound states likewise including both very wealthy and developed states, and other states dependent on agriculture or fishing.

If economic factors are not the principal determinants of fiscal health in the current crisis in Spain (which is actually still occurring, as the country fell into recession again in 2012 following a brief recovery after the 2008-2010 recession), then what kind of factors are? The literature suggests that political factors, such as whether the ruling party is liberal or conservative, or even the level of

competitiveness of regional politics, may also play a large role. Spain provides an appropriate testing ground for this hypothesis. Since the 1980s, when the liberal Partido Socialista Obrero Español (or Spanish Socialist Workers Party, PSOE for short) was dominant, regional politics have changed dramatically, and since the second half of the 1990s the conservative Partido Popular (or Popular Party, PP for short) has proven a far more viable opposition. Furthermore, the provinces are far from being homogeneous politically, with some regions traditionally more conservative, and others traditionally more liberal. Finally, the three states which are home to Spain's three minority language groups enjoy an even higher level of autonomy - two of them are among the most secure states, while the other is one of those nearest to insolvency. For this reason, there is enough political variation among the provinces, and over time, to test the relevance of these political factors in determining fiscal health.

Current literature is divided on what we may expect to find. Many studies have suggested that political factors play an important role in determining deficits, spending, and debt. However, many of these studies focused on national governments, who enjoy a relatively large amount of autonomy on issues of spending and taxation in comparison to many subnational governments, including those of Spain's regions. Other papers, including a study by Seitz (2000) that looked at the German Länder (the German regions), found that political factors were insignificant after controlling for economic factors. This is relevant, because the level of autonomy granted to the Länder resembles the level granted to the Autonomous Communities. However, it must be emphasized again that the specifics of which provinces are or are not in danger of becoming insolvent provide reason to doubt that this will be the case in Spain.

This paper will use data on political outcomes, economic health, and fiscal health from within the 17 Spanish Autonomous Communities. The data comes from a variety of sources, including the

Spanish national statistical agency, regional budget reports, and a private reporter of election results from all of Spain's regional elections since the creation of the Republic after Franco's death.

The results show that on top of the economic controls, some of the political factors, like the party that controls the regional parliament, whether or not the regional government is ruled by a coalition or a government that just came to power, and the ratio of transfer income to total income, affect some political outcomes. However, the sign of these effects is not always as we would expect given previous literature and our own rationale. Additionally, none of these factors significantly affects all of the fiscal outcomes we examine. We look in particular at factors that affect discretionary spending behavior, but do not really find a coherent picture here. Further research might not only look further into determinants of discretionary spending, but on what makes certain government programs “discretionary” and others “non-discretionary.”

The rest of this thesis will be organized as follows. Section 2 will discuss in more detail the existing literature on subnational debt. Section 3 will explain the federalist system in Spain and how it has evolved. Section 4 will present the data that will be used. Section 5 will detail the methodology which will be used to search for the impact of political factors on fiscal health. Section 6 will present the results and discuss. Section 7 will conclude.

2. Related Literature

As authors of some of the first studies on determinants of government spending patterns note, until the 1980s economists didn't often worry about why governments made certain decisions, since most models assumed that governments were choosing the fiscal policy that was optimal for society. However, the persistent deficits of the 1970s convinced economists that this assumption might not only

be too simplistic, but might lead them to come to predictions significantly different from reality. Some of the first authors to study the determinants of government policy include Roubini, Sachs, Honkapohia, and Cohen (1989). They studied the fiscal policies of OECD countries in from 1960 - 1979, and found that after the oil crisis of 1973, the countries who had the most difficulty reducing their deficits after the crisis tended also to be those with the weakest government, meaning that the ruling coalitions had many partners and the governments had short tenures. Borrelli and Royed (2006) took issue with much of Roubini and Sachs's methodology, and found that their hypothesis seemed not to hold in normal economic times, but that these political factors did seem to be relevant during crises. Similarly, Haan, Sturm, and Beekhuis (1999) found that many of the factors Roubini and Sachs found to be significant were not, but that the number of parties in a coalition was significantly correlated with fiscal deficits. Alesina and Tabellini (1990) and Rattsø (2004) examined different variables, but like Roubini and Sachs found that political factors such as the level of polarization, the level of political stability (that is, the tenure of governments, as examined by Roubini and Sachs), the strength of the government, and the level of control governments have over public spending, to have small but statistically significant effects on public deficits.

Blais, Blake, and Dion (1993) investigated whether the political leanings of the ruling party or coalition were determinants of public debt. Although one may think that liberal governance should be correlated with higher spending and deficits the results seem to be more mixed. Blais, Blake and Dion found that left-leaning governments did tend to spend more than right-leaning governments, but this result was very small, and moreover it took time to manifest itself and was only true for majority governments. Meanwhile, Cusack (1996) and Blais et al (1996) found the same result, with no caveats - that is, they found that liberal governments do run higher deficits than conservative governments. Rattsø (2004) and Carlsen (1997) found that left-leaning governments don't respond as well to crises, as they are less willing to cut spending. This paper will similarly investigate whether or not there are

differences between the fiscal policies of the conservative, socialist, and various regionalist parties in Spain.

None of these papers studied the policies of subnational governments. This is quite important, because national governments have far more power over their own spending and taxation than subnational governments, and so their behavior is likely to be different than that of subnational governments. Papers that have dealt with subnational debt include Clingermeyer and Wood (1995), Seitz (2000), Feld and Kirchgässner (2004), and Leibfritz (2009), all of which have examined different explanatory variables that will inform the model used in this thesis. Clingermeyer and Wood found that in the US, such diverse factors as federal spending habits, the political leanings of the ruling party, the interest rate, and the point in the election cycle were all correlated with differences in regional spending; divided governments did not spend differently from unified governments. In Switzerland, where the cantons also have a lot of autonomy, Feld and Kirchgässner found that the level of autonomy and direct democracy (in Switzerland there are referenda on tax policy), and institutional controls can all help discipline regional governments – the parallel to the Spanish case is perhaps the amount of control the regional governments are granted over government programs within their borders. In studies of the less federalist system in Belgium, Leibfritz found that getting revenues through transfers and "equalization" policies make regional governments less disciplined. Spanish regions are also funded to a large extent by transfers, so this same type of analysis could be performed using data from Spanish regional budget. In the similar environment of the German Länder, Seitz found no political factors that influenced deficit spending decisions after controlling for economic factors. A similar result in this study, while seemingly unlikely given the current diversity of fiscal states in the regions and the fact that the most distressed regions don't seem to be economically homogeneous, would nevertheless be interesting, as it would suggest that regions with certain economic characteristics are faring poorly in the current system.

The study that most closely mirrors this thesis was conducted by Argimón and Hernández de Cos (2012) on Spanish regional spending practices. The authors addressed the question of whether or not liberal governments actually run higher deficits than conservative governments, and found that they do. They also found that there is a significant amount of inertia to budget deficits - high deficits tend to lead to more high deficits. However, much of the focus of this study focused on the effects of the different budgetary rules. For instance, they examined the difference between Autonomies that use the Foral tax system in which taxes are entirely collected by the regional governments and then ceded to the federal government, and those that use the Common system and receive large transfers from the federal government, as well as the effect of the Budget Stability Law of 2007 which limited the size of the deficits regional governments can have. I will seek to add to these results by also considering the political climate, including how strong the government is, how volatile regional politics are, and differences at different points in the electoral cycle, as well as how autonomous the regions are.

Another strand of literature has studied the effectiveness of budget rules such as the cap on the size of regional government deficits relative to their GDP that was passed in 2007 in Spain. Poterba (1994), Hemming and Kell (2001), and Plekhanov and Singh (2007) all found that budgetary rules can be effective in dealing with crises. However, Plekhanov and Singh stated that in systems with a high degree of regional autonomy, centrally-imposed rules are often less effective than regionally-imposed rules, while Hemming and Kell found that transparency is a far better check on reckless spending than rules, as rules can often be too inflexible, and encourage "creative" accounting.

The question of the role of transfers in subnational fiscal crises has also been studied, since a transfer system makes states unaccountable for the revenue side of their budgets. Rodden (2002) and Fornasari, Webb, and Zou (2000) used data from Latin America and OECD countries to show that if regions are funded mostly by transfers, they spend less responsibly, especially for those regions that the

authors classified as being able to borrow freely. Sorribas-Navarro (2009) used similar data from a smaller number of countries, most in Europe, and found that transfers can work if they are based on a formula and are not discretionary. She also found that regions behave more responsibly if they are granted greater autonomy and there is no history of bailouts from the central government.

The weaknesses of the Spanish system as a whole, hinted at above, have been studied fairly extensively. Almendral (2002) showed that granting greater autonomy over taxes hasn't helped in Spain, because as they are assured historical levels of transfers, they have used this power almost exclusively to grant exemptions and deductions to the elderly, new homebuyers, and parents. Beynet, Fuentes, Gillingham, and Hagemann (2011) suggest that the budgetary rules still encourage pro-cyclical spending behavior, and must be reformed. Ullastres (1997) says that the government should do away with transfers by allocating each tax either entirely to the central government or entirely to the regional government. García-Milà and McGuire (2002) and Monasterio (2010) both addressed the distinction between the Foral system and the Common system, although Monasterio came to the conclusion that the Foral regions should have to transfer more to the federal government, while the other study concluded that the Common regions should become more like the Foral regions. This thesis will attempt to address these questions about the Spanish system, particularly by examining the effectiveness of the Budgetary Stability Law of 2007. It will also seek to show whether or not the two regions that use the Foral tax system have been more fiscally secure than other regions. Additionally, it will investigate the effect of increased transfer income on fiscal outcomes.

How well will Spain be able to address these problems? How in particular will make regional government more accountable for their actions when much of their revenues still comes from transfers? The literature suggests that it will be difficult. Persson and Tabellini (1996) showed that federal transfer policies tend to align with majority opinion in the poorest regions. However, García-Milà, Goodspeed,

and McGuire (2002) showed that the wealthy regions often spend as though they expect to be receiving as much as they put into the system. Bolton and Roland (1997) argued that in this scenario, the wealthiest regions may inevitably declare independence, especially if they can expect to join the European Union afterwards. Indeed, the separatist movement in Catalonia, one of Spain's wealthiest regions, seems to be stronger than it has been in many years. Spain will need to address its structural inefficiencies in a way that does not hurt the poorest regions, while still appeasing the wealthier regions who are perhaps understandably frustrated that they seem to get less out of the system than they pay in.

3. Federalism in Spain

One of the first large changes to the organization of the Spanish government following Franco's death in 1975 was the creation of the Spanish Autonomous Communities. More specifically, what was created was a path that the regions could follow to gain autonomous status - a path that all of the regions had followed by the early 1980s. Autonomy conferred to the regions of Spain a status similar to that enjoyed by the US states. This had been one of the principal reforms of the Spanish republic of the 1930s, and restoring a federal system was a primary goal of the new republic. Eventually Spain would be divided into 17 Autonomous Communities and two Autonomous Cities, with the divisions following historical, linguistic, cultural, and geographic lines.

Several regions were given a "fast track" to gain autonomous status. These were the homes of Spain's three minority language groups: Galicia, Catalonia, and the Basque Country; Andalusia was also allowed to use the fast track because support for gaining autonomy was already very high. These four communities did not have to gain approval for their plan for autonomy, but were instead allowed to begin forming regional governments along the lines laid out in the Constitution as soon as it was ratified

in 1978. The Basque Country and Catalonia held their first elections in 1980, Galicia held elections in 1981, and Andalusia did so in 1982; all of the other regions held their first elections in 1983. Subsequently, the four fast track regions continued to be granted rights that were not afforded to the other regions in Spain, notably control over the administration of the health care and education systems within their borders. This privilege was also granted to three other regions: Navarre, Valencia, and the Canary Islands once they had formed their governments in 1983. The ten other regional governments were restricted to exercising only the rights expressly afforded them in the Constitution. In 2002, these ten regions were finally granted all the rights of the fast track regions, and a certain amount of equality was restored (Almendral, 2002, pp. 5-6).

The Constitution is quite specific in how most aspects of the Autonomous Community governments should be set up¹. Each Autonomy has a legislature, and is led by an executive elected by the legislature, as in a parliamentary system; each Autonomy also has its own judiciary. The primary spending duties of the autonomies are public works and infrastructure, environmental protection and agriculture, culture, social assistance, and health and hygiene. However, there is a framework in place under which these responsibilities can evolve. The Constitution specifies many responsibilities which are only granted to the federal government, and anything not listed as a duty of either the national or regional governments may be assumed by the regional governments, after the Autonomy has existed for at least five years, and with the approval of the federal government. The two large responsibilities that the Autonomies have since assumed are control over the running of the health care and education systems within their borders. Seven regions were granted this power immediately upon forming a government, which all had done by 1983; the other ten regions had to wait until 2002, when the federal government granted this right to them as well. These two programs tend to consume approximately

¹ For information on the Constitution's treatment of the Autonomous Communities, see articles 143 through 158 of the Spanish Constitution of 1978.

80% of their budgets, while infrastructure and public works projects also constitute a substantial share of regional budgets (Almendral, 2002, p. 5). Other spending on museums and sports, agriculture or fishing and environmental protection, and other smaller programs, consume fairly small fractions of these budgets.

The Autonomies are fairly constrained in their ability to influence their revenues. However, almost all of their revenues come from transfers from the federal government, which they are mostly unable to influence. Thus, though the regions are responsible for administering a wide variety of important programs, the federal government bears the primary responsibility for ensuring that these activities are funded. With a new regime in place since 2009, the Autonomous Communities receive 50% of income tax revenues collected within their borders, 50% of revenues from the value-added tax, 58% of excise taxes collected on sales of alcohol, gasoline, and tobacco, and 100% of revenues collected from taxes on wealth, gambling, electricity, vehicles, transfers and official documents, and inheritances and gifts. (Under the regime in place from 2002 to 2009, the regions only received 33% of income tax revenues, 35% of VAT revenues, and 40% of excise tax revenues.) The law also provides for the use of a "Compensation Fund" to aid communities that aren't as well off; that is, those with relatively lower revenues (*MINHAP*, 2010). Since the two largest sources of revenue, the income tax and VAT, are very dependent on incomes, provinces with lower per-capita incomes receive aid from the Compensation Fund. Autonomies are also given the right to levy taxes, but they are very limited in the kinds of taxes they can levy. The most onerous restriction is that they can't levy taxes on anything that is already taxed at the federal or municipal level, and since taxes levied by these entities are quite extensive, this seriously limits the ability of regional governments to generate their own revenues. The one niche that the regional governments have found they can occasionally fill involves taxes which are meant to accomplish some sort of social objective, often environmental protection, in addition to revenue generation. However, even these are usually challenged by the federal government, and because of the

small amount of revenue they generate and the cost of administering them, it may not be worth it for Autonomies to create taxes of their own (Almendral, 2002, pp. 14-15).

Between 1997 and 2002, the Spanish government reformed the way taxes are administered. Previously, taxes were collected by the regions, turned over to the federal government, and then certain proportions were transferred back to the regional governments. In principal, if the states collected more than the forecasted revenue, they would be able to keep the surplus. However, their only way of increasing revenues was to improve collection, which hardly gave them control over tax revenues. After the reforms, federal and regional governments began to truly “share” the taxes, as the Autonomies were given the right to partially rewrite the tax law within their borders. For instance, they now can set the rates of many taxes, and create deductions or tax credits. In practice, however, most Autonomies have not adjusted tax rates, and still collect taxes at the standard federal rates. However, the Autonomous Communities have always been reluctant to be seen as the cause for a tax hike. Under the new law they are still assured that they will receive transfers in line with historical trends, and so instead of raising tax rates and angering their citizens, they have mostly used their new powers to increase deductions. This they can do without worrying too much about the effects on revenues, because of the federal assurance that federal transfers will make up for any shortfalls (Almendral, 2002, pp. 15-17). The states were also given control over the administration – that is, the collection – of many of the states taxes. The federal government’s intention in transferring these powers to the states was to make them more involved in the taxation process, and therefore more accountable for their spending. By 2002 this process had been completed, and in that year the 10 regions that had not had control over health care and education spending gained control over those two major expenditures.

It has already been stated that the tax law was changed from 1997 to 2002 in order to give regional governments access to more of the funds collected within their borders. Another revision to

the tax code called the Budget Stability Law was passed in 2007 to attempt to impose fiscal discipline upon all levels of government. Before 2007, most regions had run small deficits even though Spain experienced long periods of strong economic growth. Under the new regime, if national GDP growth is above 3%, all levels of governments, including regional governments, are required to run surpluses. If growth is between 2% and 3%, the budget must at least be in balance, and if growth is lower, regional governments may run deficits that, combined, cannot exceed 0.25% of national GDP (multilateral agreements govern specific regional balances). If they cannot meet this requirement, they must submit adjustment plans to the federal government, and must gain approval from the central government for any debt issuance until they get their deficits under control. Government approval is often dependent upon how ambitious the adjustment plans are. The rules also require that the debt have a maturity of greater than one year, and that servicing costs be kept small (Beynet et al., 2011, pp. 31-32).

During the thirty-plus years since the Constitution first created pathways for regions to gain Autonomous status, they have not always been completely uniform in the rights given them, and in the way they spend. In fact, Spain is a country with a remarkable level of diversity, economically and culturally. Most notable is that there are three other languages that are native to Spain and are spoken by large segments of the population. On top of being able to form regional governments immediately, they were also given the responsibility of overseeing health care and education within their borders before most other regions. Additionally, three other regions gained these powers as soon as they had formed governments, which all had done by 1983: the Canary Islands, Valencia, and Navarre. Because of this, spending habits in these provinces may differ from those in the other ten, at least until 2002 when all provinces were given these same spending powers.

The different minority language groups, and the distinct cultures and even nationalisms associated with each of them, may cause other differences in spending habits. Gallego is spoken as a

first language throughout the rural areas of Galicia; in the cities, more people speak Spanish in the home. Catalan, besides being spoken as a first language by a small majority of citizens of Catalonia, is spoken widely both in the Balearic Islands, and in the Valencian Community (the two regions have supposedly distinct dialects, called "mallorquí" and "valenciano," respectively). Basque was particularly strongly repressed under Franco, and is only just now experiencing a resurgence. Less than half of residents of the Basque Country speak Basque well, but most young people do. Basque is also spreading in the northern part of Navarre, which historically was the center of Basque power. Strong nationalisms exist within the Basque Country and Catalonia, and to a lesser extent in these other provinces. It is a possibility that these strong regional identities may influence spending decisions, if perhaps governments seek to assert their relevance over that of the federal government by increasing their spending on projects for their citizens.

More practically, three Autonomous Communities have different tax laws than the other fourteen. Navarre and the Basque Country both have the ability to set most of their own taxes. While most regions have been given the right to set their own tax rates and create their own exemptions, these two regions need not adhere in any way to the framework set by the federal government when it comes to personal or corporate income taxes, the wealth tax, the gift and inheritance tax, and the transfers tax. In Navarre, the government of the Autonomous Community sets these taxes. In the Basque Country, it is not the regional government, but the governments of each of the three provinces that comprise the Autonomous Community, that set the taxes. Despite the freedom afforded them, generally the three Basque provinces have identical tax codes, and these tax codes, as well as that of Navarre, tend to be very similar to the federal tax code. After they have collected the revenues, the two regions transfer a lump-sum to the federal government to finance its spending (Marsilla, 2013). These rights were granted in 2002 to the Basque Country and in 2003 to Navarre. Previously literature has shown argued that this system has allowed these regions to avoid the fiscal hardships many of the other

Spanish regions are currently suffering; this paper will address the question of whether or not these two "Foral regime" regions have indeed exhibited different behavior than the fifteen other "Common regime" regions.

The Canary Islands also have a unique tax code, which the Spanish government put in place due to their relatively remote location. Practically, these islands are at a disadvantage when it comes to attracting business, and so the Spanish government amended the tax code in 1991, and again in 2000, to grant them certain exemptions. In particular, in 1991 the federal government stopped collecting the Value Added Tax in the Canary Islands, and instead began collecting a special sales tax with lower rates and exemptions for basic necessities. Additionally the law created a number of incentives to encourage investment in the islands. In 2000, a special economic zone was created in certain areas of the Canary Islands to encourage investment in manufacturing and services. This was done by providing companies in these industries within the special zone with a number of tax exemptions and deductions (*Lowtax.net*). Given that this system would not transfer well to the rest of Spain, given that it is motivated by the Canary Islands' isolation, this paper will not evaluate the merits of this tax code.

The recent economic crisis in Spain has exposed huge problems in the federalist system in Spain. Historically the regional governments have had the ability to issue bonds to fund deficits, and most have run deficits over the years. The Budget Stability Law of 2007 was passed to limit the size of these deficits by requiring any region running a deficit to submit an adjustment plan to the federal government in order to gain permission to issue debt. However, since the crisis, the deficits have ballooned, regions are having to submit these adjustment plans, and many regions are having trouble finding financing even after they gain permission to issue debt. The IMF declared the subnational debt crisis to be one of the biggest potential risks to the Spanish economy (which is already mired in its second recession since 2007) (Coll, 2011). As the crisis in the Autonomous Communities became more

severe in the summer of 2012, the government created the Autonomy Liquidity Fund, with a total of €18 billion set aside to provide aid to the regional governments. Beginning in the summer, the Autonomies began requesting aid from the fund, and by the end of the year, Valencia, Murcia, Catalonia, Andalusia, Castile-La Mancha, the Canary Islands, the Balearic Islands, Asturias, and Cantabria had together used over 95% of the available funds (*El Mundo*, 2012, 26 Nov.). For 2013 another fund has been prepared, this one with €23 billion, and the governments of Andalusia, Cantabria, Catalonia, Murcia, and Valencia have already announced that they intend to seek funds. Extremadura, Aragón, La Rioja, Madrid, Galicia, Navarre, and the Basque Country have stated that they will not need any government bailout. The other regions have not yet decided whether or not they will need aid from the government, opting to wait to see the terms the government will offer and whether or not they will be able to raise funds in the market (*La Vanguardia*, 2012, 16 Dec.).

Interestingly, the communities that accepted bailout funds in 2012, and those that are planning to accept in 2013, are disparate in many ways. They are agricultural, as in the case of Andalusia or Murcia, they are industrialized, like Catalonia or Valencia, and they are somewhere in between, like Asturias or Cantabria. Catalonia, the Balearic Islands, and Cantabria have higher per-capita incomes than most regions; Andalusia, Castile-La Mancha, Murcia, and the Canary Islands have some of the lowest per-capita incomes in the country. For this reason, it is very difficult to explain why the fiscal crisis is affecting some but not all of the regions by comparing the economies of the distressed regions with those of the secure regions. The crisis seems to target regions at all stages of development, and does not seem to afflict only the poorest regions. Additionally, one should note that the Balearic Islands and Cantabria are among the most politically conservative Autonomies in Spain, while Andalusia, Castile-La Mancha, and Asturias are bastions of the Socialist party; Catalonia and the Canary Islands generally have been governed by right-leaning regionalist parties. Yet all required a bailout in 2012.

Therefore it seems that Conservative, Liberal, and regionalist governments alike can all lead their regions into fiscal distress.

Even with the support of bailouts from the federal government to stave off bankruptcy, the regions that are having difficulties are having huge problems dealing with the size of their deficits. The largest portions of their budgets are funding for the health care and education systems, which are difficult to cut. Education is, of the two, the easier to deal with, since the regions can't unilaterally change the way health care service is provided. The governments of several regions have acted to cut education budgets by increasing teacher hours and neglecting to renew teacher contracts or to hire new teachers. However, the powerful unions have responded to these measures, and many others taken by the regional and national governments, with strong condemnations and strikes (Sanz de Miguel, 2011). On top of that, revenues are down due to the economic recession, and with the governments cautious about the possibility of their actions worsening the recession, it is not certain that they will be able to, or will have the will to, bring deficits down enough to restore their ability to fund themselves by borrowing in the market.

The current crisis is sure to cause further change in the federalist system in Spain. Catalonia has led a campaign by some of the more independent-minded or wealthy regions to gain more control over their own finances, and to reduce the size of the wealth transfer from wealthier to poorer regions. The Spanish government will likely want to assess what caused the current crisis and what steps can be taken to ensure that a subnational debt crisis is less likely in the future. Hopefully this study will help to shed light on this issue.

4. Data

Unfortunately, there is no statistical agency in Spain that collects extensive economic data for all of the Autonomous Communities and for Spain as a whole. For this reason, multiple data sources are needed to collect information on all of the variables used in this study. This is unlikely to cause a large issue in the consistency of data collection, because each data source tends to specialize in a certain type of data. Thus all budget data is coming from the same organization, for instance, and all demographic data from another source.

Information on electoral outcomes and other political factors is taken from a private data source which has information on every regional election in Spain since the death of Franco. The first elections in most regions were in 1983. The relevant variables include the political leanings of the party in power, including whether the party is a regionalist party or not, and several variables indicating the level of competitiveness of regional politics, including whether the government is a coalition or a minority government, the vote share of the ruling party and coalition, and whether or not the ruling party got the largest share of the vote, as well as whether or not the ruling party is in its first cycle in power, and where in the electoral cycle each data point is.

Figures 3 and 4 give a sense of the political leanings of the seventeen regions, and changes in the balance of power over the last 30 years. They show that in a few regions, regionalism is very prevalent. Some regions are staunchly liberal or more conservative, but in a majority of the Autonomies, the liberal PSOE enjoyed a period of dominance, followed by a period that spans to the present when the conservative PP became a much more viable opposition. Leading up to the crisis, the liberal PSOE had the poor fortune to have just previously reasserted itself, and in the past few years the center-right PP has come to control more regions than ever before.

Information on economic factors, especially GDP and population figures to calculate GDP-per-capita, come from the Instituto Nacional de Estadísticas, or National Statistics Institute (INE for short).

Unfortunately, the earliest data points were calculated in Pesos, while more recent figures are obviously presented in Euros, so the exchange rate in the 1990s was used to convert the earlier data points into Euros. Naturally no such problem exists with the population figures - the INE has calculated the figures for all years between the decennial censuses for the entire period of interest. Other economic factors like interest rates and inflation come from the Banco de España Economic Indicators series of datasets, namely the Prices and Interest rates and indices of Spanish competitiveness datasets.

Figures 5 and 6 show regional government deficits and spending. The data comes from the Ministerio de Hacienda y Administraciones Públicas (MINHAP), which is the ministry that deals with public administrations. This particular data comes from the Liquidation of Autonomous Community Budgets dataset of the ministry's Territorial Funding Statistics. Although the MINHAP's datasets fortunately extend back to 1984, there is far more detailed information on the source of revenues and where money was spent from 2002 on. Equivalent data on federal spending comes from a special MINHAP dataset called the Base de Datos Económicos del Sector Público Español (BADESPE), which is run by a semi-autonomous department of the ministry. This creates an unfortunate discontinuity, since even though both sets of data come from the Ministry of Public Administrations, it is impossible to verify that the two numbers were calculated using the exact same methods. Still, any differences between the two sets of numbers are likely to be small.

Figure 5 gives a sense of how average deficits changed over time during the period 1984 - 2010. It shows that deficits have generally been small relative to GDP, and in many years the regions have actually run surpluses on average. However, in the past few years deficits have increased dramatically, getting worse every year from 2008 - 2010. Given the amount of trouble the regions are having financing their deficits, the 2010 regional deficit/GDP ratios may look surprisingly small. However, one

has to keep in mind that these are regional governments, and they are quite simply not able to handle the kind of deficit that national governments routinely run.

Figure 6 serves to give a bit of a sense of how the federalist system in Spain has evolved since its inception in the early 1980s by showing how the regional governments' revenues/GDP and expenditures/GDP have evolved over that time period. They have trended steadily up the entire time from around 5% of GDP in 1984 to just under 20% of GDP before the recent crisis. The past few years have seen revenues drop fairly substantially, while expenditures have remained more stable. The large deficits are clearly caused by a reduction in revenues that was not accompanied by a concurrent reduction in expenditures.

Delving a bit further into the data, we can attempt to get a sense of what factors may be related to the fiscal outcomes of deficits and spending. For instance, figures 7 and 8 explore the relationship between the ruling party and these fiscal outcomes. It appears, from figure 7, that deficits are similar in regions controlled by conservative and liberal parties. However, figure 8 seems to show that regions controlled by conservative parties spend less as a percentage of GDP than regions controlled by liberal parties.

We can also look at whether or not there is any influence of the competitiveness of regional politics on spending and deficits. This paper will primarily focus on any difference in the fiscal practices of minority governments or non-minority governments; of coalition governments or non-coalition governments; of governments ruled by a party other than the one that received the most votes and those ruled by the party that did win the most votes; and of regions where the ruling party took power in the last election and those where the ruling party has been in power for more than one cycle. Tables 1 and 2 show some of the more interesting results from these tests. Namely, new governments seem to

spend less as a percentage of GDP than governments that have been in power for more than one cycle, and coalition governments seem to run far smaller deficits than non-coalition governments.

One of the most important economic factors that this paper will control for is regional GDP growth, and a simple graph of GDP growth and the average deficit-to-GDP ratio shows why this is such an important control. Figure 9 suggests a very strong direct relationship between high GDP growth and government surpluses; conversely, negative GDP growth has been correlated with regional government budget deficits. Thus, while it seems that some political factors may be related to fiscal outcomes, economic factors are also clearly very important.

While the main dependent variables in this paper are deficit/GDP and spending/GDP, this paper was actually motivated by the current fiscal crisis, especially the bailouts of many of Spain's regional governments. An obvious question arises: could we have predicted which regions would be more likely to receive a bailout? A full answer to this question must be left for a more rigorous statistical test. However, we can ask quite simply, are the regions being bailed out in a visibly worse fiscal state than those not being bailed out? Table 1 shows that, on average, the deficit-to-GDP ratio of the regions that accepted a bailout in 2012 was about double that of the regions that did not. Thus, looking at factors that lead to higher deficits seems like a good way of identifying factors that have caused the current crisis.

Before moving on to look at the methodology that this paper will use, one final statistical test will both inform the creation of the model and shed further insight on each of the variables of interest in this study. We can think of each observation of deficit/GDP or spending/GDP in terms of its variance from the overall mean. Because this study uses panel data, we can divide this variance into variance within years - that is, the variance of each observation from the mean for that year - and variance across

years. Alternatively, we could think of the total variance of being comprised of variance within regions and variance across regions. To express this more rigorously, we can say:

$$\sum_{r=1}^{17} \sum_{y=1}^{27} (\text{def}/\text{GDP}_{ry} - \text{def}/\bar{\text{GDP}})^2 = 17 \sum_{r=1}^{17} ((\text{def}/\bar{\text{GDP}})_{*y} - \text{def}/\bar{\text{GDP}})^2 + \sum_{r=1}^{17} \sum_{y=1}^{27} ((\text{def}/\text{GDP})_{ry} - (\text{def}/\bar{\text{GDP}})_{*y})^2$$

where r is the region, and y is the year. The left-hand term thus represents the total variance of the observations. The first term on the right-hand side is the variance across years, and the second term is the variance within years. Of course, it is easy to do the same decomposition this time dividing the total variance between variance across regions and variance within regions:

$$\sum_{r=1}^{17} \sum_{y=1}^{27} (\text{def}/\text{GDP}_{ry} - \text{def}/\bar{\text{GDP}})^2 = 27 \sum_{y=1}^{27} ((\text{def}/\bar{\text{GDP}})_{r*} - \text{def}/\bar{\text{GDP}})^2 + \sum_{r=1}^{17} \sum_{y=1}^{27} ((\text{def}/\text{GDP})_{ry} - (\text{def}/\bar{\text{GDP}})_{r*})^2$$

If political factors are relevant determinants of fiscal outcomes, then one would expect that there would be a lot of variance within years and across years, as the political climate changes every cycle, and politics is at no point homogeneous. If the politics of a certain region change frequently, then there should also be a lot of variance both across regions and within regions. If this decomposition shows that most of the variance is across years, and there is little within years, this would imply that economic factors, which tend to change with time but to be very similar in each region at a particular time, are far more important than political factors in determining fiscal outcomes.

To simplify notation, I'll refer to the total variance as SST, the variance across years (or regions) as SS_AY (or SS_AR), and the variance within years (or regions) as SS_WY (or SS_WR). We should first look at the two dependent variables of most interest, the deficit/GDP and spending/GDP ratios. Table 3 displays the results of this decomposition. The table shows that the variance in spending/GDP seems to come from within and across both regions and years. Variance in the deficit/GDP is a bit more puzzling,

as it looks like there is much variance both across years and within years, yet almost all of the variance is within regions, and there is very little variance across regions. This suggests that the long-term average deficit/GDP ratio is very similar in all regions, but within any years, there is significant variation. This suggests that at any one time, there is enough variation in the deficit-to-GDP ratio for us to examine the causes of this variation; we need not look only at factors that change each year but are similar in each region, like regional GDP growth.

We can use the same test to see how both the economic controls and the political variables of interest vary. Table 4 shows the results of these tests. GDP growth tends to be fairly constant within each year and to vary mostly across years, which suggests that any large variations in the dependent variables within years are unlikely to be explainable by GDP growth alone. GDP-per-capita mostly varies across years, but also has some variance within regions, so we cannot yet say that it seems unlikely that this could explain the variations in the dependent variables. All of the political variables show significant variance across regions and within years, meaning that at any one time, there is a lot of variation in these variables. There is also a lot of variation within regions, but little across years, suggesting that the average values of each variable are actually very similar. This type of variance is similar to that observed in the dependent variables, and while one really can't tell much about the relations between the dependent and independent variables from these statistical tests, they at least suggest that there could be some sort of significant relationship to observe.

5. Methodology

The basic methodology that will be used is fairly straightforward, and is based off of the methodology used in studies like Clingermeyer and Wood (1995) and Seitz (2000). Those models were simple OLS, and were formatted thus:

$$Z_{ry} = E_{ry} + P_{ry} + X_r + u_{ry}$$

Where the dependent variable Z_{ry} is a measure of the fiscal health of region r in year y , E_{ry} is a vector of economic controls in region r and year y , P_{ry} is a vector of political factors, X_r is the fixed effect for region r , and u_{ry} is the error term.

The model in this paper will make an alteration to the way the variables are classified. Instead of classifying any variable as either an economic control or a political factor, this model will classify variables as region- and time-variant, time-invariant, or region-invariant. A region- and time-variant variable varies both within regions over time and across regions in any given year, such as regional GDP-per-capita. A region-invariant variable is constant across regions within any given year, but changes from year to year, like inflation. A time-invariant variable is constant over time within any one region, but varies across regions, like the Foral tax regime dummy. Table 5 shows a full list of the variables with their classification as time- and region-variant, region-invariant, or time-invariant.

A base regression including only the time- and region-variant variables, along with regional fixed effects, will be run first. Then a series of regressions will be run that will each add one of the other variables, to check their significance. Obviously regional fixed effects cannot be used when the region-variant variables are run.

I will also investigate the importance of regional control over spending within their borders by examining the effect of the level of “discretionary spending,” or spending over which the regional governments have effective control, on the fiscal outcomes of interest. In classifying spending as “discretionary” and “non-discretionary,” I believe I have made few choices that will be very contentious. Discretionary spending includes the cost of the regional administration, security services, social and cultural programs, infrastructure, various regulatory activities, and education. Non-discretionary income includes transfers to other governments, health care, and debt servicing. Most of the

components are fundamental obligations of the region, and spending on these issues have always been left to their discretion; the only exception is education, which is a federal program administered by the states, but the pre-crisis rise of education spending and post-crisis cuts show that regional governments exercise significant discretion over the amount of money spent on education.

Discretionary spending/total spending is used as an independent variable in this base model. This variable is used to proxy for the amount of autonomy a region has, since autonomy is a factor that has been shown previously to have an effect on fiscal outcomes (Liebfritz, 2009). However, this paper will also seek to use discretionary spending as a dependent variable. More specifically, one may realize that for Spain's regional governments, some spending, chiefly health care spending, is not at their discretion. Any changes in outcomes due to changes in these non-discretionary areas of regional budgets therefore can't be a result of political factors, since such spending is exogenous. Thus, what we really want to focus on is the portion of spending that is not exogenous relative to GDP; since the deficit-to-GDP ratio is the primary measure of fiscal health, we would also ideally like to create a "discretionary deficit," and examine the determinants of this fiscal outcome.

The next model will therefore use as the dependent variable discretionary spending/GDP. The same model will be run, with one major restriction: the disaggregated budget data used to create the discretionary spending variable is available only from 2002 until 2010. The sample size will be smaller, which may reduce the probability of finding significance. However, any results will be far more applicable to the current situation, given that all of the data is from within a decade of the regional debt crisis. This will also change the model in several ways. First, the Euro adoption dummy variable and the Tax and spending law change dummy can no longer be used, since Euro adoption occurred in 1999 and the major tax and spending overhaul occurred in 2002. Additionally, the regional revenues/GDP ratio

should be included as a control, because a government responding to no political incentives would still be expected to increase discretionary spending as revenues rise relative to GDP.

The main weakness of looking at discretionary spending/regional GDP is that we can't tell what is going on with non-discretionary spending or with deficits. Even though this ratio may be changing, and that is alone is an interesting result, we cannot tell what the overall effect of this change is on the fiscal balance. For that reason, I will also introduce a variable that I will call "discretionary funds," which is equal to the difference between non-discretionary spending and total revenue. Discretionary funds is therefore the money that the regional government has left over to spend on discretionary programs after spending on non-discretionary programs. In order to examine the extent to which they are exceeding (or not) their discretionary funds, I will examine the ratio of discretionary spending to discretionary funds. When this ratio is greater than one, the region is running a deficit, and values far larger than one would suggest that deep cuts in discretionary programs would be required in order to balance the budget. This ratio is close to what we are looking for in a "discretionary deficit." A series of regressions, using the same model as was used with discretionary spending, will be run to examine correlations between discretionary spending/discretionary funds and the economic and political controls.

6. Results and Discussion

The original motivation for this study was the current fiscal crisis in Spain's regional governments. And while the study is not limited in its scope to the current crisis, it would be good to know that it actually does help to explain it. Namely, by looking at the factors that cause deficits to be larger or smaller relative to GDP, are we gaining knowledge about the 2008 crisis? Do the regions that are accepting bailouts actually have larger deficits relative to GDP than the regions that are not

accepting bailouts? If this is the case, then factors that affect the size of deficits are relevant in explaining the current crisis. If not, then while a discussion of the causes of deficits is still important, we cannot then say that we have a better understanding of the causes of the current fiscal crisis in Spain.

It is quite simple to make a case that large deficits are or are not causing regions to seek bailouts. We can simply run a one-tailed t-test on the null hypothesis that regions that would go on to accept a bailout in 2012 had larger deficits in 2010 than those who did not go on to ask for a bailout. Table 6 shows the output using data from only 2010, and data from 2007 – the year before Spain entered recession – until 2010. In both cases, the test allows us to reject the null hypothesis at the 10% confidence level and we conclude that regions that were bailed out in 2012 had been running larger deficits in the years leading up to the crisis.

Now we can look at the actual model in order to begin investigating the economic and political determinants of fiscal outcomes. Tables 7, 8, and 9 show the results of the first model, using the regional deficit/GDP ratio as the dependent variable. Table 7 shows results of the basic regression, which has as independent variables only variables that are both time- and region-variant. It also includes regressions both with and without region and year fixed effects, and with and without lagged GDP terms. This was done to determine an ideal baseline model to use for examining all other variables. The independent variables are all relatively uncorrelated, with no correlation above 0.5, and most below 0.2, so we can be confident that there should be no problems with collinearity. The results show that the economic controls, GDP-per-capita, GDP growth, and the three lagged GDP growth terms, are all significant at the 10% level (the level of significance that will be used for all analysis in this paper), and the signs of the coefficients are as expected; wealthier regions are able to finance higher deficits, and positive economic growth reduces deficits. The exception is when year fixed effects are used, as in columns 5 and 6, when these controls are not significant, which suggests that the economic controls are

collinear with the year variable. Indeed the correlation between GDP-per-capita and year is 0.67. Thus, while using year fixed effects increases the R-squared of the model, we actually seem to lose information by using them, since we can no longer tell what it is that is changing from year to year. In the regressions that follow, only regional fixed effects will be used.

We can see from Table 7 that few of the political factors end up being significant in determining deficits. The electoral cycle is not significant, nor are transfers, nor is the level of discretionary spending relative to total spending – a measure of the region’s autonomy. The *LARGEST* variable is significant and has a negative sign. This means that when a region is ruled by the largest party, the deficit/GDP ratio tends to be between 0.43 and 0.275 percentage points lower than when a smaller party manages to form a coalition and lead the government; this effect is equivalent to increasing per-capita GDP by 25% to almost 50%, and given that the mean deficit over the entire time period is about 0.36% of GDP, the effect could be enough to eliminate the deficit. The most interesting result is that the *COA* variable, indicating that a region has a coalition government, is significant and has a negative sign. In previous literature, some studies have found this variable to be significant (for instance, Roubini et. al., 1989), while others have found it to be insignificant. However, all studies that found that coalitions tend to behave differently than non-coalitions found that coalitions run *larger* deficits than non-coalitions. Table 7 shows that in Spain, the reality is exactly the opposite: coalitions run deficit/GDP ratios that are, on average, about 0.45 percentage points lower than those of non-coalitions; again, given that the average deficit is just 0.36% of GDP, this means that the effect of a coalition government could be enough to eliminate the deficit, all else equal. Perhaps in Spain, coalitions, as opposed to passing more spending to keep the members of every party happy, experience a certain amount of legislative gridlock.

Table 8 shows the effects of all of the region-invariant variables. Regional fixed effects were used for each regression. Many of these variables are significant. However, in most of these cases it is

difficult to claim that the relationship is causal – that is, that a change in the independent variable causes a change in the deficit/GDP ratio. Rather, it is likely that both variables are correlated with a third variable. For instance, the *INTEREST* variable is significant and the sign is positive. Are we to believe that an increase in the cost of borrowing causes regional governments to run larger deficits? Far more likely is that both deficits and interest rates are correlated with the macroeconomy, and that both are low in good times, and rise during crises. Other significant variables, like the federal deficit/GDP ratio and the Budget Stability Law dummy, are likewise probably not causally related to *RDEFGDP*, but rather all are correlated with overall economic conditions. The *BSL* variable in particular is almost collinear with the crisis variable, so it's almost certain that, rather than causing deficits to rise, as the positive sign of coefficient indicates, the *BSL* variable has a positive coefficient because the Budget Stability Law was passed right before the recession caused abnormally high deficits at the regional level. In the same way, the negative coefficient on the *NCONS* variable most likely reflects the fact that the PP has mostly been in power during good economic times when deficits were small. However, there may be a causal argument to explain the significance of the *POST02* dummy indicating the 2002 change in tax and spending laws. The coefficient estimate suggests that this law change caused a decrease in the deficit/GDP ratio of 0.6 percentage points – an effect far larger than the effect of being ruled by a coalition government. By making regions responsible for spending on health care and education, one may have expected deficits to rise. Additionally, not long after this law changed, the recession hit, so if the law had no effect we might still expect economic conditions to cause a positive coefficient for this variable. That the coefficient is negative suggests that this law actually did work as intended, and made regional governments more responsible by transferring more authority to them.

Table 9 shows the effects of the three time-invariant variables. Neither the *LANG* nor the *FORAL* dummy are significant, meaning that the minority language regions and the regions that use the Foral tax system don't have larger or smaller deficits than the rest of Spain's regions. The Article 151 dummy

is significant before 2002 and insignificant afterwards, as one would expect. This dummy indicates those regions that had the responsibility to spend on health care and education even before 2002, and the deficit/GDP ratio of these seven regions was about 0.35 percentage points higher than that of the other ten regions; in a period when the average deficit/GDP ratio was about 0.31%, this is a large effect. After the 2002 law change gave this power to all regions, this disparity disappeared.

Tables 10, 11, and 12 show the results of the same model using the regional spending/GDP ratio as the dependent variable. Again, GDP-per-capita and GDP growth are significant, though the lagged growth terms are not. In the case of spending, the results show that conservative-leaning parties tend to spend over a percentage point less relative to GDP than liberal parties, relative to a period average spending/GDP ratio of about 12%. The *TRANSTOT* variable is also significant, and the coefficient shows that a region that receives ten percentage points more of its revenues from transfers than an otherwise identical region will spend about a percentage point more relative to GDP. This is to be expected, since the federal government seeks to make transfers meet the needs of regional governments, and so it makes sense that the more regions rely on transfers, the more they spend, expecting the federal government to make up for any shortfall. Table 11 shows that again many of the region-invariant variables are significant, and most affect spending as we would expect. Lower interest rates are correlated with higher spending, though this likely at least partially reflects the fact that interest rates were highest in the early 80s, when regional governments still had not assumed all of their spending powers. The *POST02* variable shows that after significant spending powers were transferred to some of the states in 2002, the spending/GDP ratio increased by almost 7 percentage points, which is economically very significant. In the case of *NSPENDGDP* and *NCONS*, the sign is opposite what we might expect. If national spending habits create a culture of higher spending, we would expect the coefficient on the *NSPENDGDP* variable to be positive, yet Table 11 shows that a one percentage point increase in the federal spending/GDP ratio is correlated with a 0.15 point decrease in the regional

spending/GDP ratio. In truth, though, the negative coefficient makes sense, as it most likely reflects the fact that over time, more and more spending has been transferred from the federal government to the regional governments. In the same way, it is likely that the positive coefficient on the *NCONS* variable reflects the fact that the liberal PSOE ruled during the entire 1980s and early 1990s, when regional spending was still relatively low. In Table 12, one can see that, as we would expect, the Article 151 regions spent over 7 percentage points more relative to GDP than other regions – this also makes sense given that after 2002, the spending/GDP ratio rose by almost 7% as other regions gained the spending powers given in Article 151 of the Constitution. After 2002, the Article 151 regions still spent more, but the difference decreased significantly, and they had spending/GDP ratios only 1.5 points higher than other regions. It is also interesting to note that the regions that use the Foral system spend almost five percentage points more relative to GDP than other regions, and together with the fact that they do not run greater deficits than other regions, this suggests that having complete control over their tax codes has allowed them to easily raise the revenues necessary to deal with higher spending.

One must take into account the possibility of autocorrelation of errors when running regressions using a panel dataset. To test for this, one can calculate the Durbin-Watson statistic. The test must be run for each regression using data from one region at a time, and the statistic is compared against an upper and lower bound lower bound determined by the number of years and the number of independent variables. I calculated the Durbin-Watson statistic for each region using the base regression, both with and without lagged GDP terms, and with the deficit/GDP and the spending/GDP ratios as the dependent variables, and found that in all cases the statistic was within the bounds. Thus that we do not reject the null hypothesis that errors are not correlated with time.

In a country like Spain, where the regional governments face many restrictions on spending, the spending/GDP ratio may not be quite as interesting to look at as the ratio of discretionary

spending/GDP. After all, if all spending is non-discretionary, then the only thing affecting regional spending is federal policy, and all regional political factors, even if they are significant, cannot be causally related. Thus, to test the effect of regional politics on spending, it would be best to exclude all non-discretionary spending. Table 13 shows the results of the analysis of discretionary spending/GDP, based on data from 2002 – 2010. Robust standard errors were used to correct for any potential heteroskedasticity, as there are not enough years of observations to calculate the Durbin-Watson statistic. As one would expect, a one percentage point increase in regional revenues/GDP is correlated with an increase in discretionary spending/GDP of between 0.3 and 0.7 percentage points. Coalition governments have discretionary spending/GDP ratios almost one percentage point higher than non-coalitions, in comparison to an average discretionary spending/GDP ratio of about 11%; this accords with previous literature that showed coalitions to be more free-spending than non-coalitions. The coefficient of the *NEWGOVT* is about -0.5, meaning that governments that have just come to power have discretionary spending/GDP ratios about 5% less than the average. This suggests that when governments first come to power, they are cautious about keeping discretionary spending down, or that they attempt to dismantle pet programs of the previous government. Interestingly, none of the region-invariant variables are significant. However, two region-variant variables, *LANG*, and *ART151*, are significant and have coefficients of about -1.0, meaning their discretionary spending levels are about one percentage point lower relative to GDP than those of other regions, *ceteris paribus*. In the case of the *ART151* variable this is especially puzzling, given that Table 12 showed that these regions have higher spending/GDP ratios than other regions from 2002 to 2010. However, overall these regions, because of their affluence, pay more in transfers to other governments than many other regions do, and this is what causes them to have lower discretionary spending/GDP ratios than other regions. In fact, the minority language regions also pay more in transfers than many of the other regions, and this is the

most likely cause of the negative coefficients on all three variables. The Foral regions also pay high transfers, but the coefficient on this variable

The case of the two regions with the Foral system shows why the ratio of discretionary spending/GDP can be misleading, since it would have led us to believe that the Foral system causes them to spend less, when in fact the high transfers they pay cause them to have relatively high regional spending. The ratio of discretionary spending to “discretionary funds,” or revenues left over after spending on non-discretionary items, may be more revealing. Table 14 shows the results of the regressions using this ratio as the dependent variable. It is difficult to make sweeping statements based on these results. Three variables, the *MINORITY*, *LARGEST*, and *NEWGOVT* variables all have large and significant coefficients in some of the regressions, but in other regressions the coefficients are insignificant. When they are significant, the coefficient values are about -6.2, -4.5, and -5.5 respectively, meaning that in these regressions, having one of these forms of government reduces the ratio of discretionary spending/discretionary funds by about 5% (since on average this ratio is about 100%), which is a large effect, but these variables are not always significant. None of the time- or region-variant variables are significant. In fact, GDP-per-capita is not significant in some specifications, though in most it does have a significant positive coefficient. This is as we would expect; wealthier regions tend to try to provide more services for their citizens.

Overall, using discretionary spending as a dependent variable is not as informative as one might have hoped. It seems obvious that if regional political factors are influencing deficits and spending, it is because they are influencing the discretionary part of spending, but the results don't quite prove that. It is possible that this is due to the limited sample size used (the discretionary spending variable is only available for the years 2002 - 2010). However, it is likely that there is more work needed in determining what other factors affect discretionary spending. For example, it could be the case that since

governments create budgets at the beginning of the year, they have a hard time deviating from the approved budget in response to changes in the macroeconomic situation. Or it could simply be the case that much of what was here classified as discretionary spending is so politically sensitive that it is essentially non-discretionary.

7. Conclusion

This study has demonstrated that economic factors certainly play a major role in fiscal outcomes, with the wealth of a region and GDP growth proving significant in accordance with what we would expect. Some measures of the competitiveness of regional politics were also significant. Coalitions, which previous literature has shown tend to behave less responsibly than non-coalitions, in Spain actually seem to have run smaller deficits than other governments. Conversely, they have also had higher discretionary spending. This implies that regions with coalitions have less non-discretionary spending. It could be that regions with coalitions tend to have less mandatory transfer spending; however, some of the poorest regions (those that do not have to pay transfers to other governments) such as Castile and Leon, Castile-la Mancha, and Extremadura, generally elect absolute majorities. The alternative explanation is that lower historical deficits have led to lower debt-servicing costs in the 2000s. New governments also seem to spend more conservatively than established governments, though previous literature has suggested that new governments often spend recklessly, either in an effort to curry favor with constituents, or because they believe they will only be in power for one term and thus feel comfortable saddling the next administration with high deficits. Previous studies generally showed that more competitive regional politics made governments, if anything, less fiscally responsible, but in Spain it seems to have made them more cautious. Other earlier studies have looked at whether conservative parties actually act more fiscally conservative than their liberal counterparts. In Spain, it

seems that the liberal and conservative parties don't run significantly different deficits, but the conservative parties do seem to spend less than liberal parties.

Much has been made about the effect of the Spanish system of regional taxation and expenditures on fiscal outcomes. Previous studies have looked at the effectiveness of the Budget Stability Law, the differences between the Foral tax system and the Common tax system, and the effect of federal transfers to the regional governments on their spending behavior. This study has found little evidence that the BSL has been effective, but this is probably to be expected given that the Spanish economy entered a recession the year after the law was passed. Certainly the fact that Foral regions spend significantly more than other regions while not running higher deficits suggests that the Foral tax system allows regions to collect more in revenues. The fact that this is done even though the two Foral regions have made their tax codes almost identical to the federal tax code the rest of the regions use means that this boost in revenues comes not from higher rates, but from better collection and fewer loopholes. In effect, the fact that these regions are completely responsible for their finances (and are seen as such by their citizens) seems to have made them more interested in gathering the revenues they need than in trying to gain favor with the people by reducing taxes. Some studies have suggested that the Basque Country and Navarre only have such favorable outcomes because they don't give enough of their revenues to the federal government so it is not clear whether this system can be extended to all of the regions.

The ratio of transfers to total revenues - what we might call a measure of a region's dependence on transfers - was positively correlated with total spending, as other studies have also found. This suggests that the less responsible regions are for their own revenues, the more they spend; the fact that the *TRANSTOT* variable was not also correlated with higher deficits means that regional governments have probably been correct in assuming that the federal government will increase transfers if they

increase spending. Thus, transfers do seem a cause of irresponsible behavior, and the federal government seems so far to have accidentally become complicit in this behavior.

It seems that Spain's conservative parties are not all that much more fiscally conservative than liberal parties, at least at the regional level. They do not run significantly smaller deficits than their liberal counterparts, nor do they have less discretionary spending than liberal parties. The one difference between the conservative and liberal parties is that conservative parties do seem to spend less overall relative to GDP. We must wonder, however, why these parties do not have smaller deficits when they have less spending. The answer may be that they are using this reduction in spending not to improve the fiscal balance, but rather to fund tax credits and other tax loopholes. They have most likely not been reducing tax rates (which is probably less distortionary than creating tax credits and deductions), since we know that regions have not used their newly-acquired ability to set tax rates.

Many of the other factors that we looked at were insignificant. The electoral cycle did not affect fiscal outcomes, nor did the ratio of discretionary spending to total spending - a measure of a region's autonomy. Factors like interest rates and the level of fiscal discipline demonstrated by the Spanish national parliament may have affected outcomes, but it is nearly impossible to distinguish between these effects and overall macroeconomic trends that are correlated with both sets of variables.

Since Spain's regional governments do not have complete autonomy over their spending or their revenues, further research should most likely focus on the effect of increased autonomy, both on the expenditures side and on the revenues side, on fiscal outcomes. For example, it would be helpful in making sense of these results to investigate whether certain areas of regional spending that are nominally at the discretion of the regional government are actually, from a political perspective, non-discretionary. This could help to explain why, during the recent crisis, discretionary spending did not decline relative to GDP, even as governments were beginning to experience real fiscal distress. A future

study might, instead of looking at what affects discretionary spending/GDP, look instead at what causes politicians to view certain spending programs as either discretionary or non-discretionary. This will become more and more relevant not just for subnational governments but for national governments as well, as populations age and traditionally non-discretionary spending programs comprise higher proportions of total spending.

Data Appendix

Variable Name: *RDEFGDP*

Data Source: MINHAP Territorial Funding Statistics, Desglose de Gastos and Desglose de Ingresos; INE Spanish Regional Accounts

Coverage: All regions for all years from 1984 - 2010

Variable description: Deficit-to-GDP ratio for Spain's regional governments ($RSPENDGDP - RINCGDP$)

Descriptive statistics:

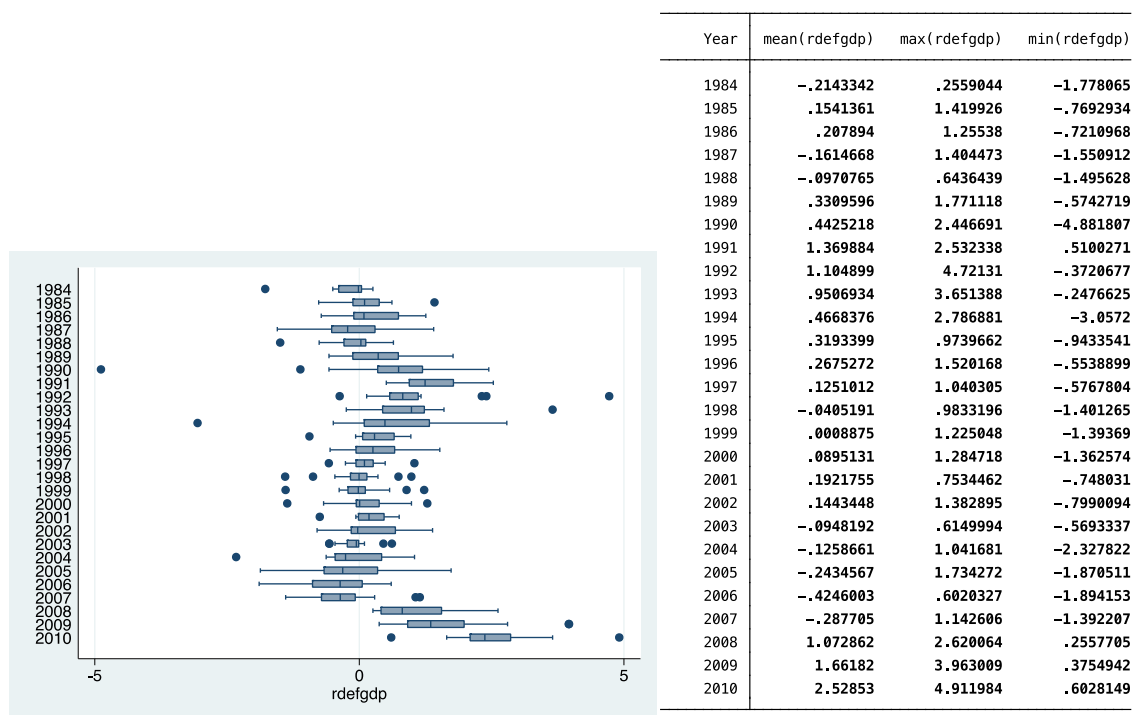
Mean: 0.3607438

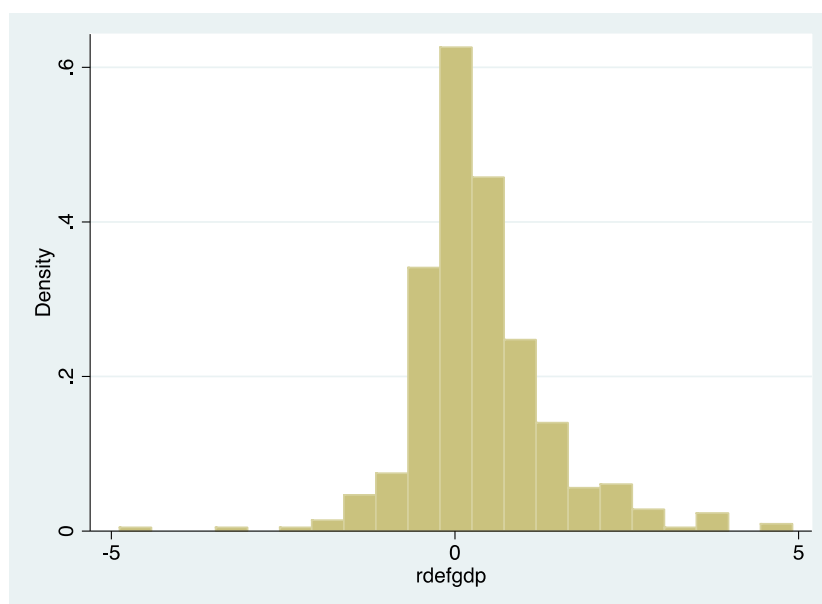
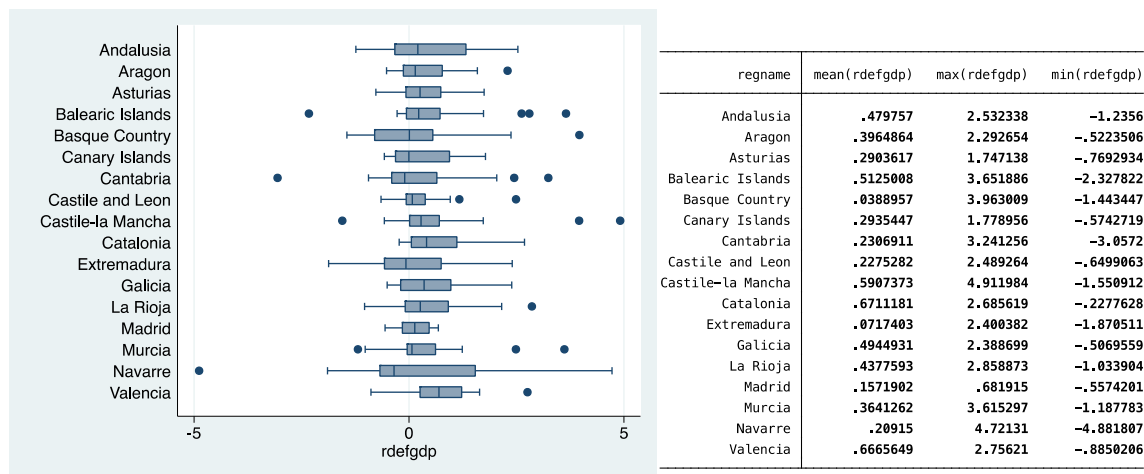
Median: 0.1843104

Standard deviation: 0.9920572

Min: -4.881807

Max: 4.911984





Variable name: *RINCGDP*

Data source: MINHAP Territorial Funding Statistics, Desglose de Ingresos

Name of variable in original source: *Ingresos: Operaciones no financieras*

Coverage: All regions for all years from 1984 - 2010

Variable description: Revenues-to-GDP ratio for Spain's regional governments

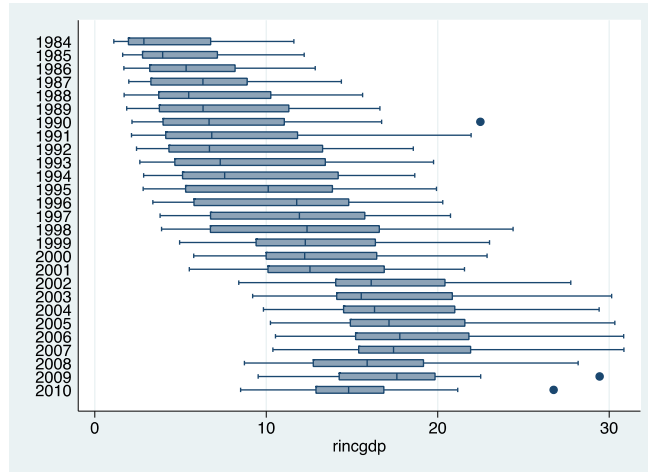
Descriptive Statistics:

Mean: 11.94238

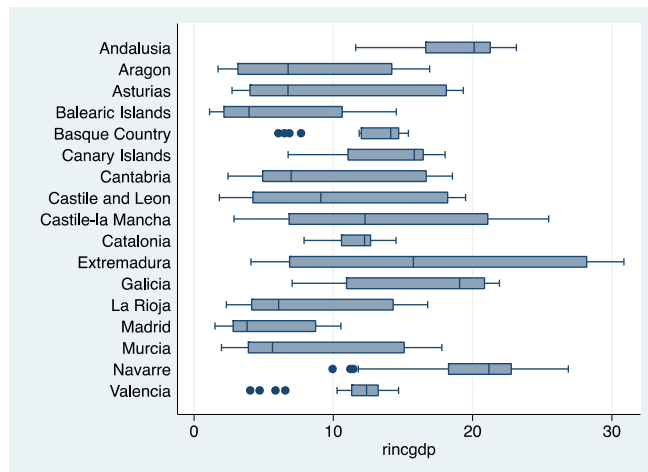
Median: 12.04448

Standard deviation: 6.675104

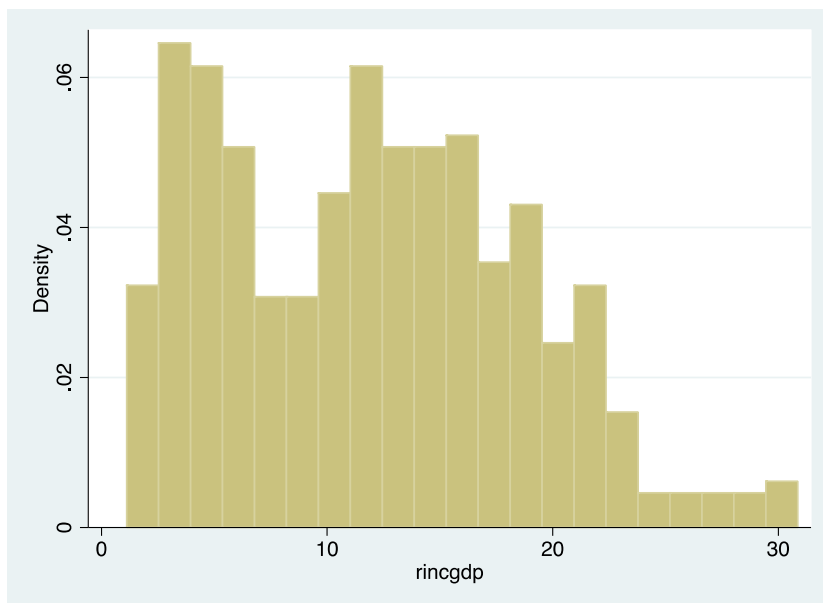
Minimum: 1.115275
Maximum: 30.86372



Year	mean(ringdp)	max(ringdp)	min(ringdp)
1984	4.486611	11.61062	1.115275
1985	5.147219	12.21404	1.628438
1986	5.719945	12.86201	1.701173
1987	6.484606	14.38401	1.983105
1988	7.0024	15.61827	1.711504
1989	7.319189	16.62922	1.860283
1990	8.252793	22.49162	2.170168
1991	8.533674	21.94842	2.145187
1992	8.928171	18.57724	2.436304
1993	9.26307	19.75514	2.629189
1994	9.905985	18.66059	2.851051
1995	10.18089	19.93385	2.822379
1996	10.93905	20.29376	3.385285
1997	11.35404	20.74719	3.809357
1998	12.11166	24.39846	3.898771
1999	12.86191	23.02141	4.951055
2000	13.69424	22.88102	5.77295
2001	13.65087	21.56539	5.51526
2002	16.61208	27.75869	8.399387
2003	17.28814	30.14374	9.207819
2004	17.66218	29.41653	9.838696
2005	18.22475	30.32926	10.24939
2006	18.86359	30.8446	10.5417
2007	18.746	30.86372	10.39288
2008	16.35892	28.18841	8.727078
2009	17.41984	29.44545	9.528387
2010	15.4324	26.76237	8.505702



regname	mean(ringdp)	max(ringdp)	min(ringdp)
Andalusia	18.90173	23.13881	11.61062
Aragon	8.440814	16.91112	1.720997
Asturias	9.832185	19.33783	2.725553
Balearic Islands	6.08198	14.51462	1.115275
Basque Country	12.8536	15.39036	6.054379
Canary Islands	14.14581	18.02254	6.756941
Cantabria	9.650499	18.55059	2.432651
Castile and Leon	10.41903	19.48967	1.81513
Castile-la Mancha	13.76352	25.45474	2.864297
Catalonia	11.70977	14.49894	7.897722
Extremadura	16.6052	30.86372	4.08314
Galicia	16.97182	21.92298	7.046276
La Rioja	8.540457	16.76923	2.324235
Madrid	5.312178	10.5417	1.505221
Murcia	8.57335	17.78853	1.965921
Navarre	19.66935	26.86818	9.945397
Valencia	11.54916	14.68389	4.033445



Variable name: *RSPENDGDP*

Data source: MINHAP Territorial Funding Statistics, Desglose de Gastos

Name of variable in original source: *Gastos: Operaciones no financieras*

Coverage: All regions for all years from 1984 - 2010

Variable description: Expenditures-to-GDP ratio for Spain's regional governments

Descriptive statistics:

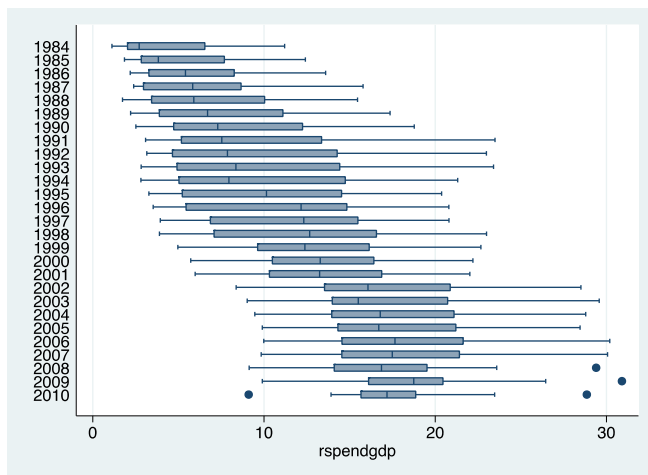
Mean: 12.30312

Median: 12.67065

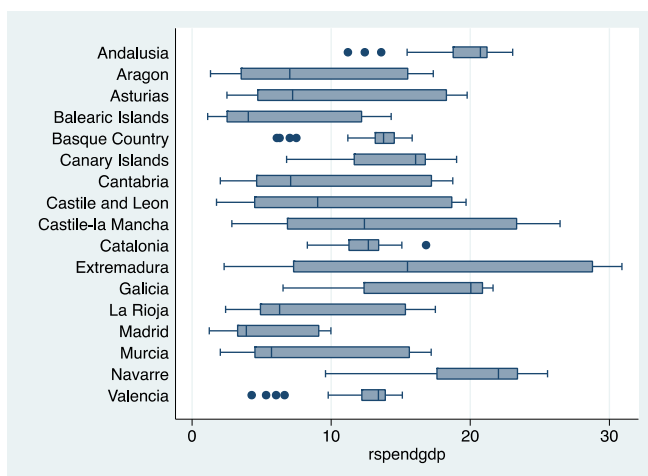
Standard deviation: 6.768395

Min: 1.120092

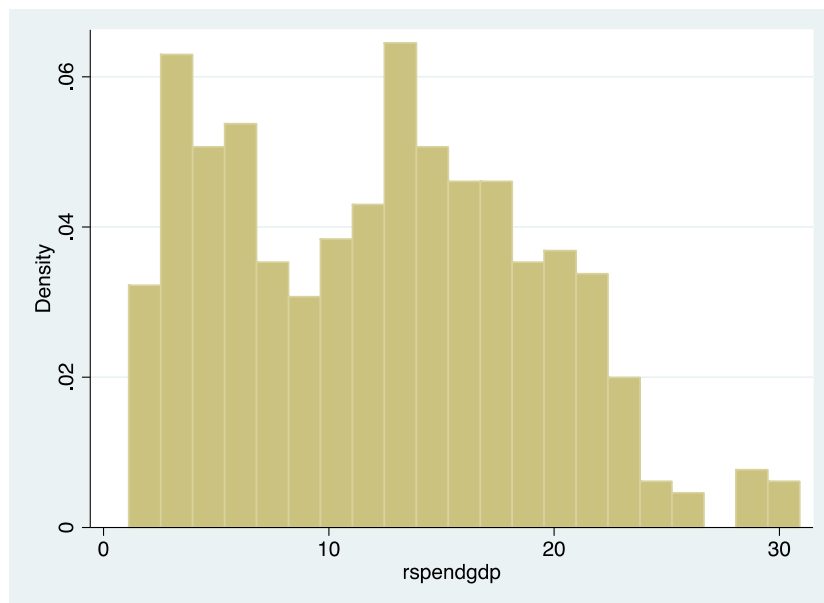
Max: 30.90627



Year	mean(rsgdp~p)	max(rsgdp~p)	min(rsgdp~p)
1984	4.272277	11.20591	1.120092
1985	5.301355	12.41926	1.855119
1986	5.927839	13.60009	2.187742
1987	6.323139	15.78848	2.392226
1988	6.905323	15.46336	1.740452
1989	7.650148	17.3665	2.209281
1990	8.695315	18.77474	2.518101
1991	9.903559	23.49165	3.088155
1992	10.03307	22.98932	3.159608
1993	10.21376	23.40653	2.825771
1994	10.37282	21.30922	2.813993
1995	10.50023	20.37333	3.279609
1996	11.20658	20.79965	3.526962
1997	11.47915	20.80745	3.944606
1998	12.07114	22.9972	3.892095
1999	12.8628	22.66777	4.971326
2000	13.78375	22.2046	5.722616
2001	13.84305	22.02537	5.983745
2002	16.75643	28.50846	8.373556
2003	17.19332	29.5744	9.017135
2004	17.53631	28.78941	9.464267
2005	17.98129	28.45876	9.900367
2006	18.43899	30.19238	9.98428
2007	18.45829	30.06269	9.838063
2008	17.43178	29.40078	9.135611
2009	19.08166	30.90627	9.903881
2010	17.96093	28.85506	9.108517



regname	mean(rsgdp~p)	max(rsgdp~p)	min(rsgdp~p)
Andalusia	19.38149	23.04862	11.20591
Aragon	8.8373	17.34315	1.330227
Asturias	10.12255	19.77316	2.511247
Balearic Islands	6.594481	14.31848	1.120092
Basque Country	12.89249	15.82131	6.09551
Canary Islands	14.43935	19.01535	6.801923
Cantabria	9.881191	18.74732	2.030756
Castile and Leon	10.64656	19.69746	1.762224
Castile-La Mancha	14.35426	26.4554	2.863942
Catalonia	12.38089	16.82582	8.288196
Extremadura	16.67694	30.90627	2.305075
Galicia	17.46631	21.63872	6.544055
La Rioja	8.978216	17.49495	2.413318
Madrid	5.469368	9.98428	1.236351
Murcia	8.937476	17.18922	2.034496
Navarre	19.8785	25.55566	9.598042
Valencia	12.21572	15.11728	4.28935



Variable name: *RGDPGROWTH*

Data source: INE Spanish Regional Accounting

Coverage: All regions for all years from 1985 - 2010

Variable description: Real growth in regional GDP, year over year ($[RGDP - RGDP_1]/RGDP$)

Descriptive statistics:

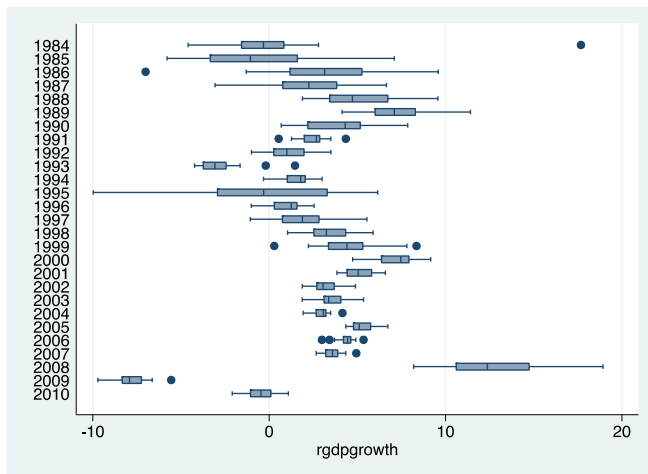
Mean: 2.714811

Median: 3.01511

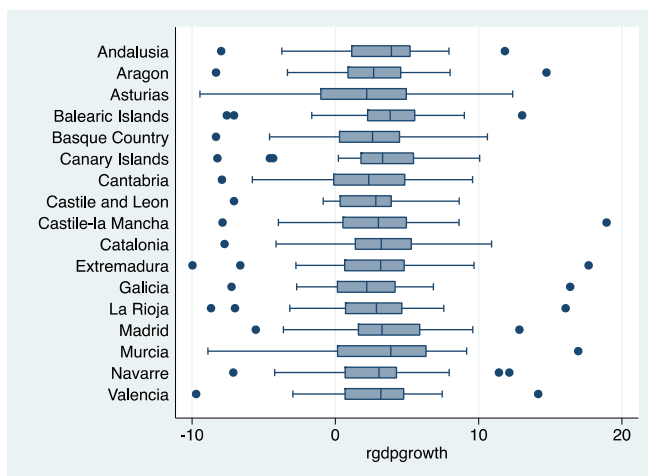
Standard deviation: 4.19792

Min: -9.967106

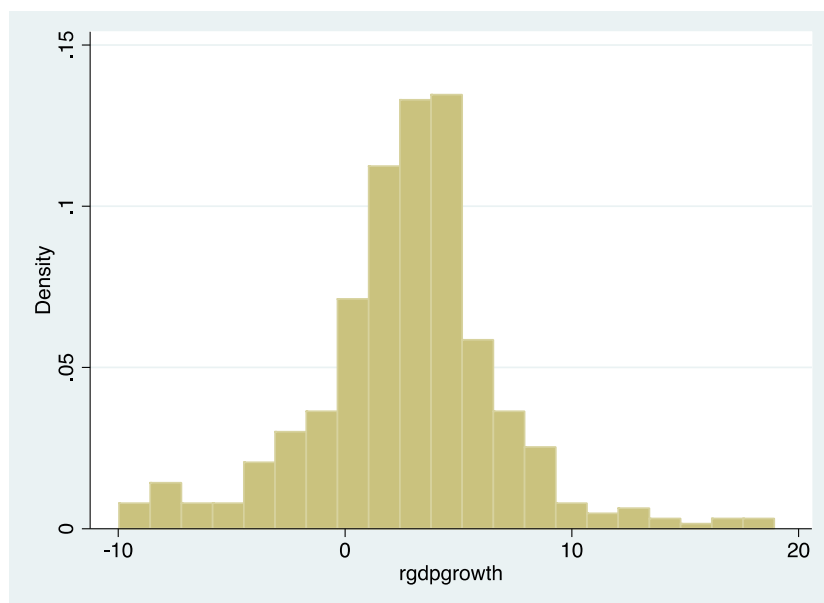
Max: 18.92704



Year	mean(rgdpgr~h)	max(rgdpgr~h)	min(rgdpgr~h)
1984	.4438818	17.67379	-4.589532
1985	-.5155458	7.098053	-5.789411
1986	3.15988	9.587367	-7.002638
1987	1.939286	6.643827	-3.064333
1988	5.071567	9.570655	1.886588
1989	7.131449	11.41486	4.135412
1990	3.977573	7.85268	.684343
1991	2.45781	4.348875	.5415367
1992	1.048872	3.50211	-1.00208
1993	-2.741653	1.465001	-4.228721
1994	1.486373	3.002936	-.3177713
1995	-.398733	6.149863	-9.967106
1996	.9896244	2.546022	-1.012691
1997	1.882202	5.540871	-1.068367
1998	3.406456	5.894231	1.046724
1999	4.398845	8.354085	.2916074
2000	7.066566	9.158785	4.734932
2001	5.125925	6.588789	3.842799
2002	3.160515	4.894974	1.879096
2003	3.567105	5.355148	1.874981
2004	3.000494	4.157644	1.92618
2005	5.251881	6.73218	4.343127
2006	4.344628	5.353467	2.99436
2007	3.645121	4.942103	2.666684
2008	12.79727	18.92704	8.190228
2009	-7.898812	-5.552439	-9.710953
2010	-.4986636	1.082689	-2.095865



regname	mean(rgdpgr~h)	max(rgdpgr~h)	min(rgdpgr~h)
Andalusia	2.986283	11.83286	-7.966204
Aragon	2.483641	14.73449	-8.323161
Asturias	1.852513	12.37512	-9.45046
Balearic Islands	3.358757	13.03619	-7.571741
Basque Country	2.1818	10.60722	-8.327733
Canary Islands	3.00058	10.07326	-8.22686
Cantabria	2.176098	9.570655	-7.914574
Castile and Leon	2.118498	8.643478	-7.069714
Castile-La Mancha	2.928791	18.92704	-7.871735
Catalonia	2.93974	10.90289	-7.730558
Extremadura	2.926593	17.67379	-9.967106
Galicia	2.389195	16.38729	-7.243277
La Rioja	2.535476	16.07301	-8.67443
Madrid	3.451267	12.84482	-5.552439
Murcia	3.271705	16.94923	-8.894337
Navarre	2.876787	12.14211	-7.11955
Valencia	2.674069	14.15749	-9.710953



Variable name: *DISCTOT*

Data source: MINHAP Territorial Funding Statistics, Clasificación Funcional

Coverage: All regions for all years from 2002 - 2010

Variable description: “Discretionary spending,” or spending over which regional governments have significant control, as a proportion of total spending. Discretionary spending includes the cost of the regional administration, security services, social and cultural programs, infrastructure, various regulatory activities, and education. Non-discretionary income includes transfers to other governments, health care, and debt servicing. Most of the components are fundamental obligations of the region, and spending on these issues have always been left to their discretion; the only exception is education, but the pre-crisis rise of education spending and post-crisis cuts show that regional governments exercise significant discretion over the amount of money spent on education, even though it is a federal program.

Descriptive statistics:

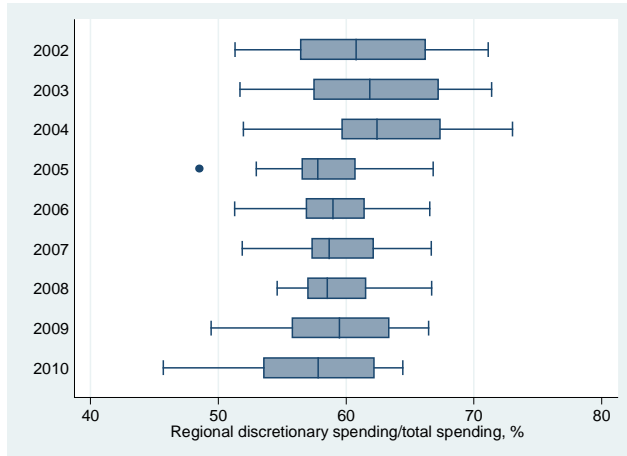
Mean: 59.84051

Median: 59.53029

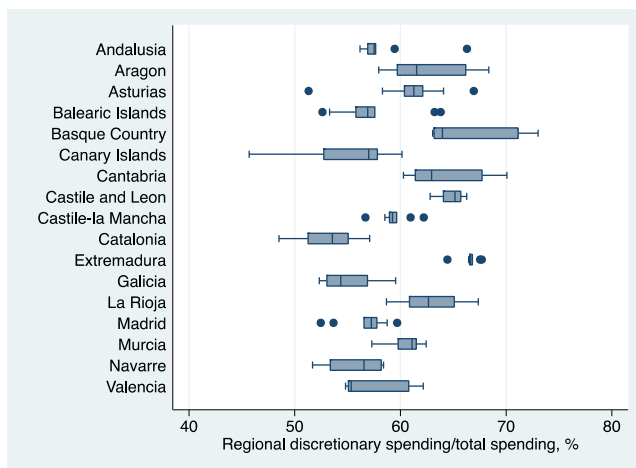
Standard deviation: 5.057465

Min: 45.68929

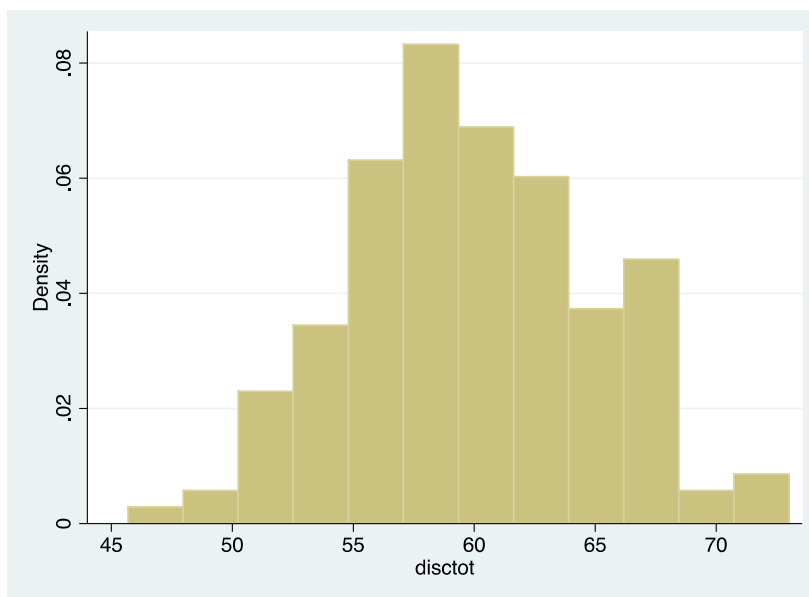
Max: 73.0139



Year	mean(disctot)	max(disctot)	min(disctot)
2002	60.94789	71.12652	51.31525
2003	62.20101	71.39896	51.68517
2004	62.86815	73.0139	51.95604
2005	58.33926	66.80325	48.51552
2006	58.77285	66.54023	51.26805
2007	59.39565	66.65128	51.86573
2008	59.50753	66.70233	54.60649
2009	58.82874	66.45701	49.42866
2010	57.70348	64.4436	45.68929



Region name	mean(disctot)	max(disctot)	min(disctot)
Andalusia	58.41853	66.29661	56.16983
Aragon	62.61813	68.35445	57.9483
Asturias	60.81743	66.93913	51.31525
Balearic Islands	57.39692	63.81143	52.6253
Basque Country	66.33142	73.0139	63.04695
Canary Islands	55.08585	60.15065	45.68929
Cantabria	64.41495	70.06871	60.28527
Castile and Leon	64.81876	66.26954	62.80787
Castile-la Mancha	59.43884	62.20953	56.69271
Catalonia	53.09854	57.09361	48.51552
Extremadura	66.60386	67.69105	64.4436
Galicia	55.03746	59.53859	52.33111
La Rioja	62.88416	67.36195	58.68053
Madrid	56.70475	59.69097	52.46484
Murcia	60.42442	62.42802	57.29987
Navarre	55.80828	58.40709	51.68517
Valencia	57.38632	62.16003	54.80548



Non-discretionary spending variable: I also created a non-discretionary spending as a proportion of total spending variable, *NDISCTOT*, which is equal to $1 - DISCTOT$

Variable name: *DISCGDP*

Data source: MINHAP Territorial Funding Statistics, Clasificación Funcional; INE Spanish Regional Accounts

Coverage: All regions for all years from 2002 - 2010

Variable description: "Discretionary spending," or spending over which regional governments have significant control, as a proportion of GDP - see the description of *DISCTOT* for a fuller definition of "discretionary spending"

Descriptive statistics:

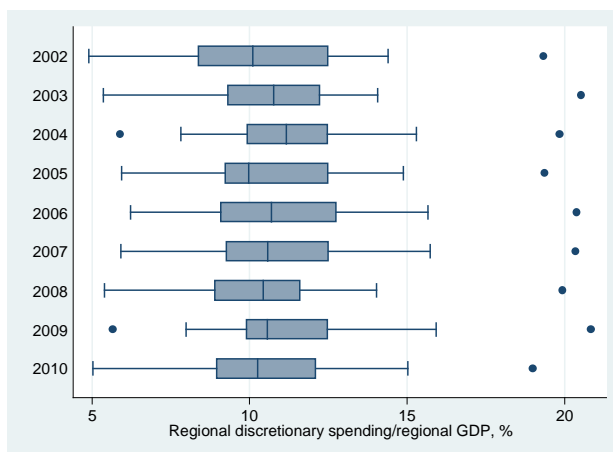
Mean: 11.63749

Median: 11.11746

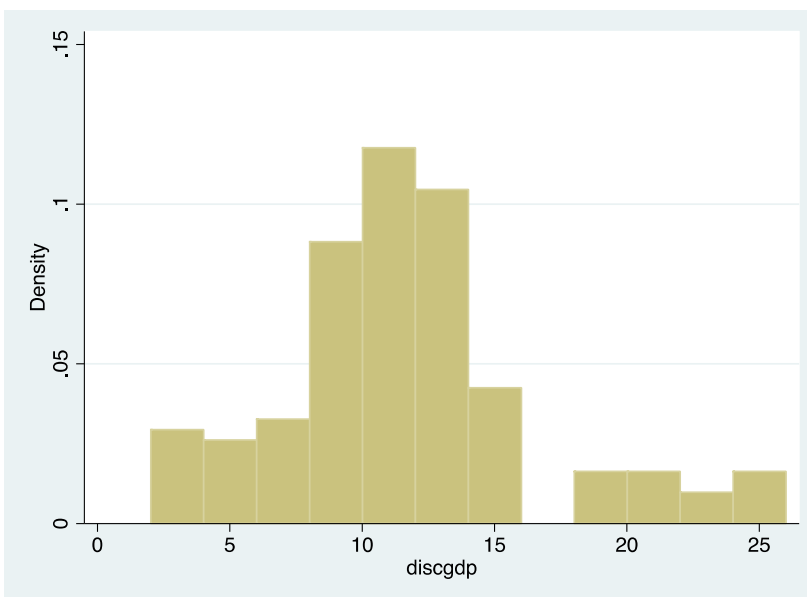
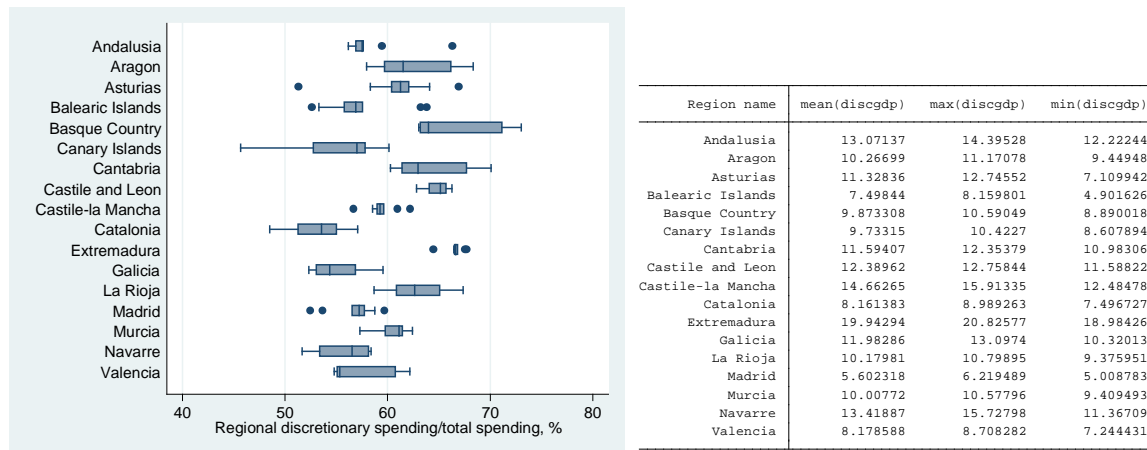
Standard Deviation: 4.866545

Min: 2.01419

Max: 26.01457



Year	mean(discgdp)	max(discgdp)	min(discgdp)
2002	10.43213	19.32334	4.901626
2003	11.03173	20.51383	5.361062
2004	11.33351	19.83731	5.897215
2005	10.88527	19.35401	5.939238
2006	11.25791	20.37862	6.219489
2007	11.37723	20.34247	5.919525
2008	10.70456	19.92686	5.39624
2009	11.60814	20.82577	5.654119
2010	10.842	18.98426	5.025187



Variable name: *DISCFUNDS*

Data source: MINHAP Territorial Funding Statistics, Desglose de Ingresos, Desglose de Gastos, and Gastos por Clasificación Funcional

Coverage: All regions for all years from 2002 – 2010

Variable description: Discretionary funds/discretionary spending, where discretionary spending is defined as above, and discretionary funds is defined to be total revenues – non-discretionary spending

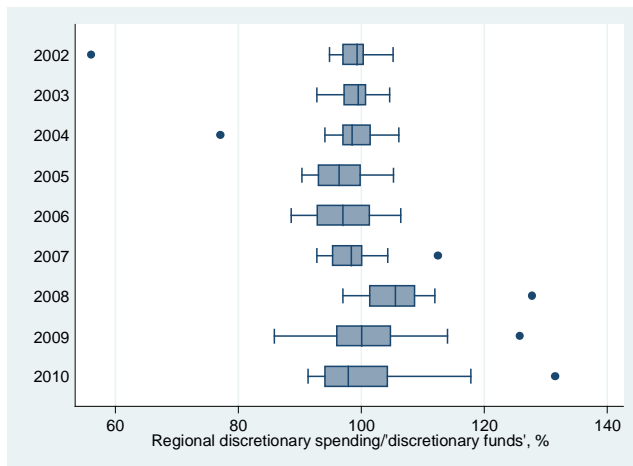
Descriptive statistics:

Mean: 99.28886

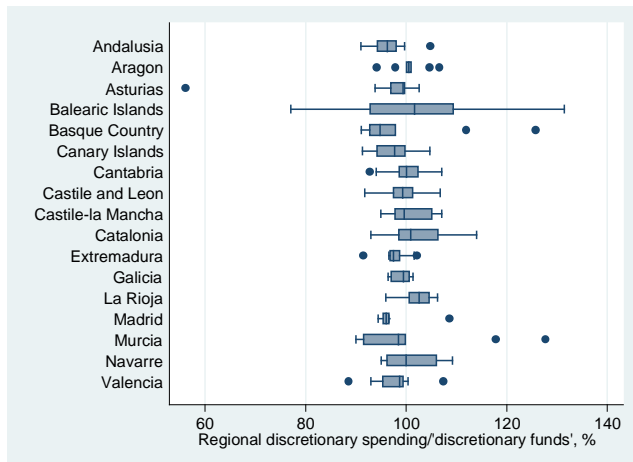
Median: 98.7069

Standard deviation: 7.614099

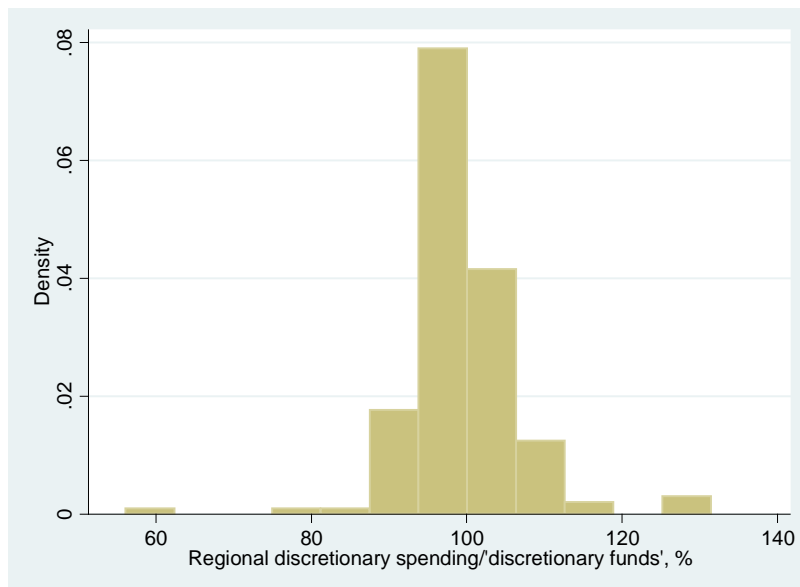
Min: 56.07901
Max: 131.4964



Year	mean(discfu-s)	max(discfu-s)	min(discfu-s)
2002	96.59251	105.1886	56.07901
2003	99.12069	104.5924	92.7774
2004	98.06364	106.1193	77.08722
2005	96.58316	105.2482	90.33974
2006	97.25845	106.4029	88.5818
2007	98.61473	112.4376	92.75809
2008	105.6102	127.7607	97.00682
2009	100.8283	125.7763	85.86212
2010	100.9281	131.4964	91.30986



Region name	mean(discfu-s)	max(discfu-s)	min(discfu-s)
Andalusia	96.59952	104.7837	91.00368
Aragon	100.6301	106.6635	94.09622
Asturias	94.15189	102.5993	56.07901
Balearic Islands	101.1089	131.4964	77.08722
Basque Country	99.63299	125.7763	91.07822
Canary Islands	97.36585	104.6871	91.30986
Cantabria	99.91043	107.1021	92.7774
Castile and Leon	99.29721	106.7631	91.74944
Castile-la Mancha	100.7553	107.1153	94.9415
Catalonia	102.6442	113.9952	92.97263
Extremadura	97.76924	102.1086	91.42848
Galicia	98.81971	101.3675	96.41189
La Rioja	101.8305	106.2342	95.99672
Madrid	97.19755	108.645	94.42995
Murcia	101.4211	127.7607	90.01174
Navarre	100.9775	109.1889	95.03901
Valencia	97.79847	107.3966	88.5818



Variable name: *TRANSTOT*

Data source: MINHAP Territorial Funding Statistics, Desglose de Ingresos

Coverage: All regions for all years from 1984 - 2010

Variable description: Transfers as a percentage of total regional government income

Descriptive statistics:

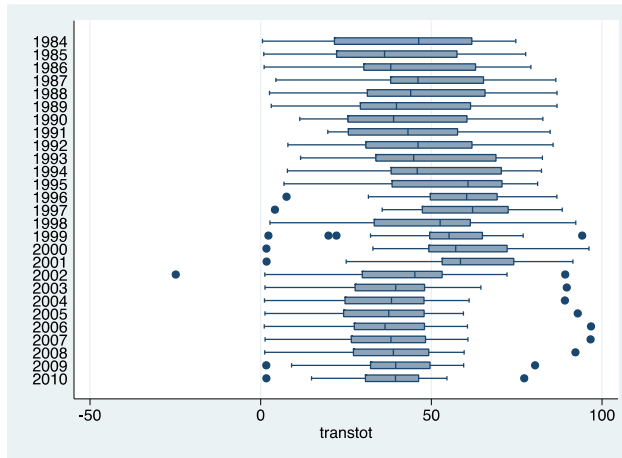
Mean: 45.46667

Median: 45.87184

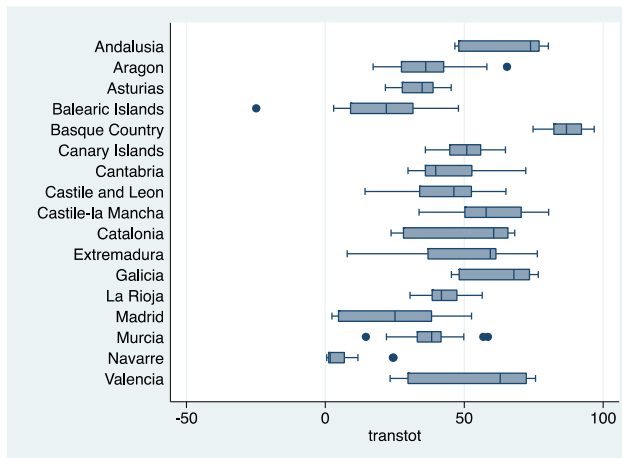
Standard deviation: 22.40881

Min: -24.86486

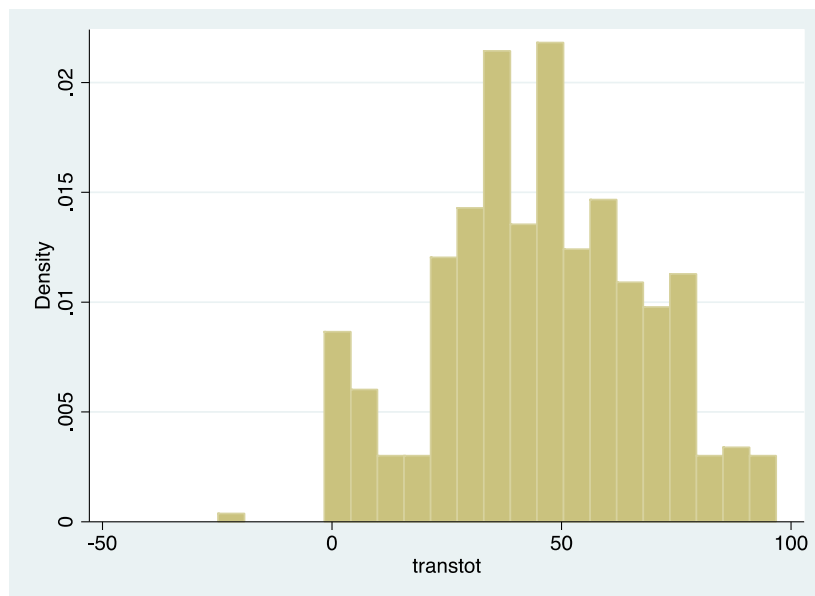
Max: 96.76572



Year	mean(transtot)	max(transtot)	min(transtot)
1984	41.36078	74.74454	.5240181
1985	39.83509	77.63018	.8963467
1986	42.12651	79.14178	1.024526
1987	48.60728	86.46537	4.455791
1988	46.71588	86.78699	2.586836
1989	44.08167	86.81332	3.090398
1990	43.74849	82.66752	11.45539
1991	44.38494	84.79869	19.65218
1992	46.9353	85.6476	7.968083
1993	48.36246	82.53328	11.70767
1994	51.23529	82.24496	7.82743
1995	54.07264	81.14386	6.837269
1996	57.20867	86.76111	7.574889
1997	56.9352	88.31476	4.176796
1998	47.85581	92.2984	2.706477
1999	52.71312	94.17522	2.275662
2000	57.30973	96.17382	1.688427
2001	56.92025	91.47015	1.734085
2002	40.79792	89.2132	-24.86486
2003	38.75644	89.65295	1.268712
2004	38.63214	89.12182	1.12436
2005	37.12276	92.87946	1.248073
2006	37.91694	96.76572	1.054092
2007	38.4072	96.63868	1.304584
2008	38.38539	92.20331	1.178142
2009	39.40696	80.38653	1.649296
2010	37.76516	77.21047	1.667957



regname	mean(transtot)	max(transtot)	min(transtot)
Andalusia	66.9342	80.29669	46.60773
Aragon	37.34769	65.38826	17.20594
Asturias	33.29668	45.30062	21.59989
Balearic Islands	20.33787	47.90285	-24.86486
Basque Country	86.81051	96.76572	74.74454
Canary Islands	50.9449	64.83356	36.0026
Cantabria	44.64345	72.14271	29.76532
Castile and Leon	45.08046	65.01811	14.2964
Castile-la Mancha	59.17547	80.37083	33.74118
Catalonia	51.02413	68.17909	23.65649
Extremadura	49.90133	76.28455	7.852212
Galicia	63.23817	76.6697	45.39412
La Rioja	43.37998	56.47707	30.48582
Madrid	24.5617	52.61518	2.384847
Murcia	38.04598	58.53049	14.61355
Navarre	4.728572	24.55739	.5240181
Valencia	53.48224	75.67921	23.35017



Variable name: *TRANSGDP*

Data source: MINHAP Territorial Funding Statistics, Desglose de Ingresos; INE Spanish Regional Accounts

Coverage: All regions for all years from 1984 - 2010

Variable description: Transfers as a percentage of total regional GDP

Descriptive statistics:

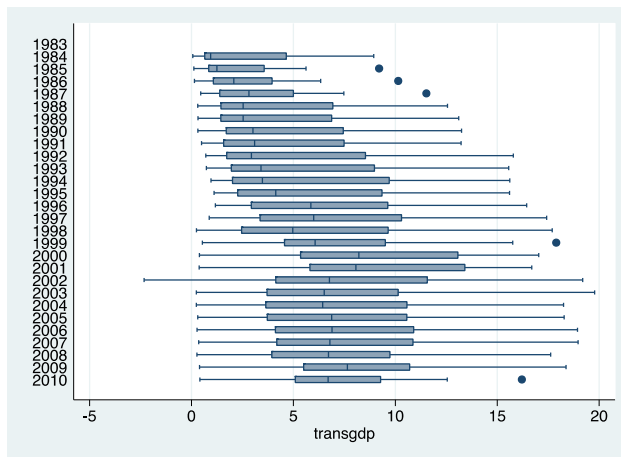
Mean: 6.145966

Median: 5.533082

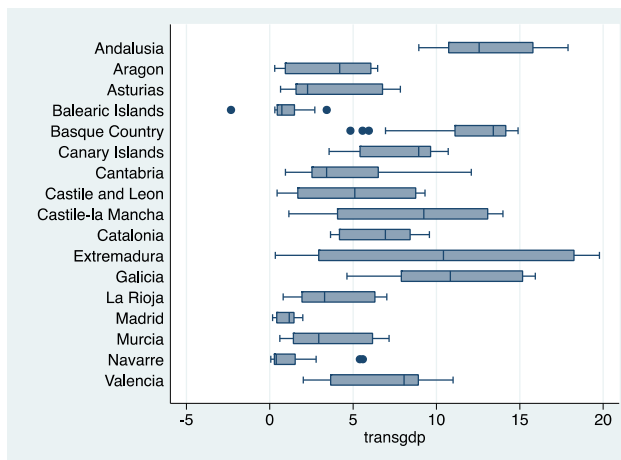
Standard deviation: 4.845537

Min: -2.324131

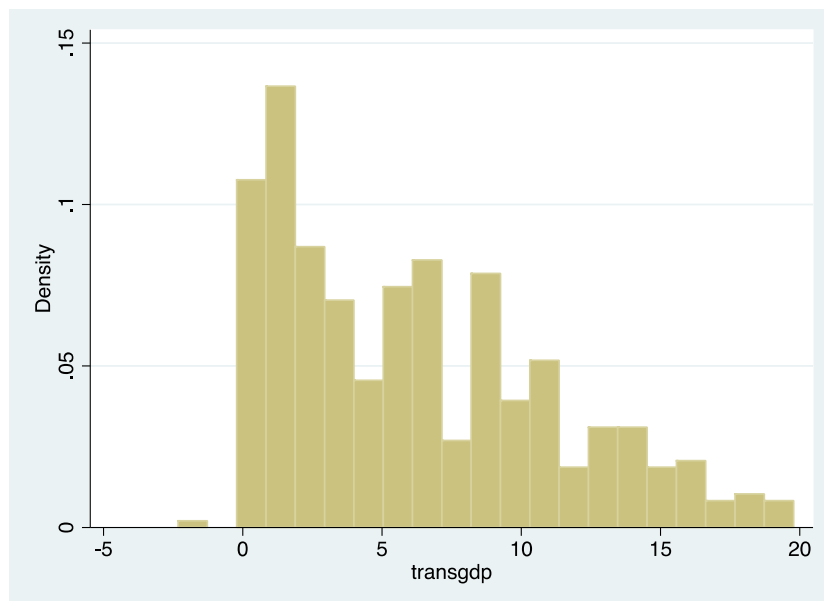
Max: 19.77874



Year	mean(transgdp)	max(transgdp)	min(transgdp)
1983			
1984	2.26461	8.939805	.0625853
1985	2.439447	9.206963	.1185551
1986	2.941517	10.14445	.1448992
1987	3.621099	11.52411	.4503108
1988	4.053879	12.56195	.3049302
1989	4.200686	13.10865	.316769
1990	4.645345	13.25054	.3145831
1991	4.970613	13.22369	.4922202
1992	5.514784	15.78731	.6987632
1993	5.785048	15.56074	.7285107
1994	6.26439	15.61285	.9564724
1995	6.345549	15.60357	1.109197
1996	7.068034	16.44427	1.17126
1997	7.23789	17.42602	.8696448
1998	6.781185	17.69864	.2416701
1999	7.487651	17.89322	.5323221
2000	8.428176	17.03378	.3902358
2001	8.483675	16.69106	.3774537
2002	7.720186	19.19437	-2.324131
2003	7.385082	19.77874	.235835
2004	7.419642	18.24979	.2386208
2005	7.385787	18.28181	.3064579
2006	7.665932	18.93712	.2720696
2007	7.702879	18.96542	.3523544
2008	6.970006	17.6226	.2701271
2009	7.925972	18.37417	.3935418
2010	7.232008	16.2087	.4106147



regname	mean(transgdp)	max(transgdp)	min(transgdp)
Andalusia	13.23631	17.89322	8.939805
Aragon	3.713122	6.474574	.2961138
Asturias	3.842127	7.832861	.6512929
Balearic Islands	.9800989	3.41915	-2.324131
Basque Country	12.08944	14.89065	4.84199
Canary Islands	7.835623	10.70622	3.563867
Cantabria	4.533549	12.08689	.9425907
Castile and Leon	5.391192	9.316144	.4449655
Castile-la Mancha	8.673882	13.98612	1.146161
Catalonia	6.673454	9.577643	3.649852
Extremadura	10.0585	19.77874	.3314133
Galicia	11.25657	15.92987	4.633502
La Rioja	3.998213	7.023238	.8031377
Madrid	1.033704	1.98415	.1738084
Murcia	3.642393	7.15944	.6065725
Navarre	1.023773	5.585895	.0625853
Valencia	6.499456	10.99446	2.011682



Variable name: *INTEREST*

Data source: Banco de España Economic Indicators: Interest rates and indices of Spanish competitiveness

Name of variable in original source: *Obligaciones Estado 10 años. Tipo marginal*

Coverage: All years from 1983 - 2012

Variable description: Interest rates on 10-year Spanish government debt, percent

Descriptive statistics:

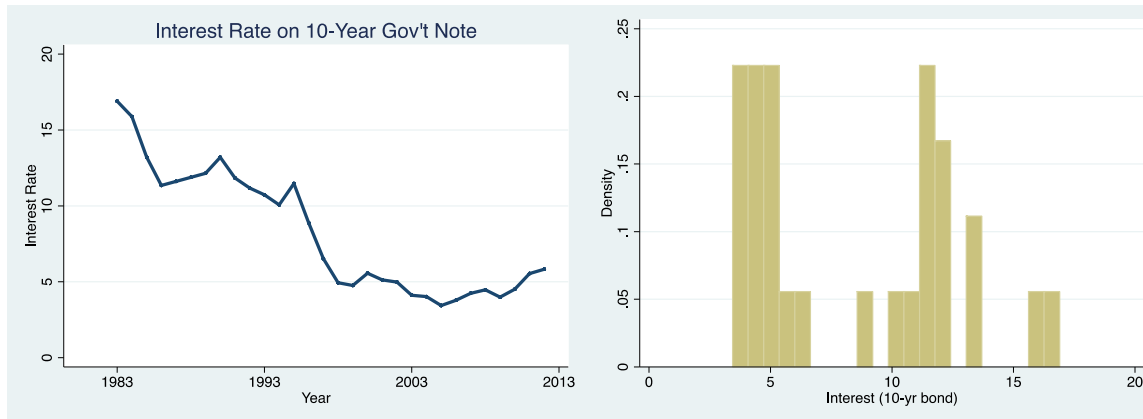
Mean: 8.387142

Median: 7.708292

Standard deviation: 4.088578

Min: 3.439

Max: 16.9



Variable name: *INF*

Data source: Banco de España Economic Indicators: Consumer price index

Name of variable in original source: *IPC. General. Tasa de variación interanual*

Coverage: All years from 1980 - 2012

Variable description: CPI inflation in Spain from, percent change

Descriptive statistics:

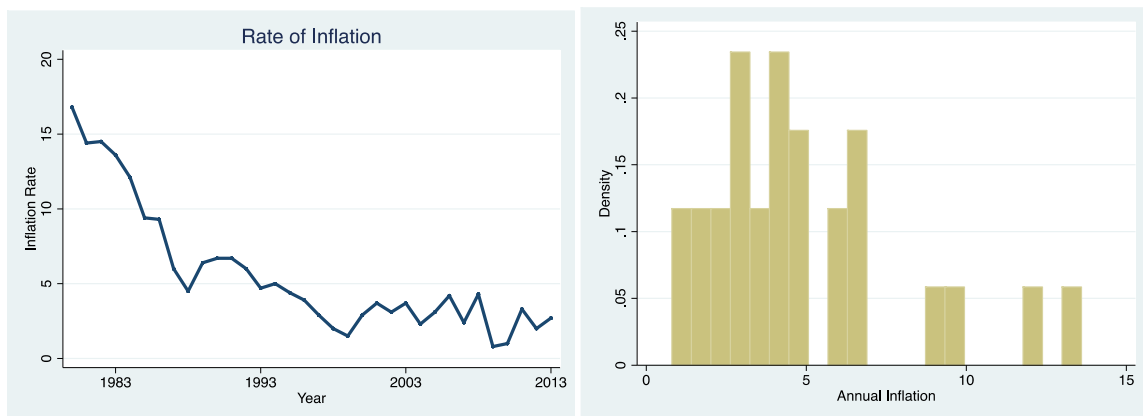
Mean: 4.878571

Median: 4.25

Standard deviation: 3.067693

Min: 0.8

Max: 16.8



Variable name: *NDEFGDP*

Data source: INE Spanish National Accounting; MINHAP BADESPE, Presupuestos

Coverage: All years from 1985 - 2010

Variable description: Federal deficit-to-GDP ratio

Descriptive statistics:

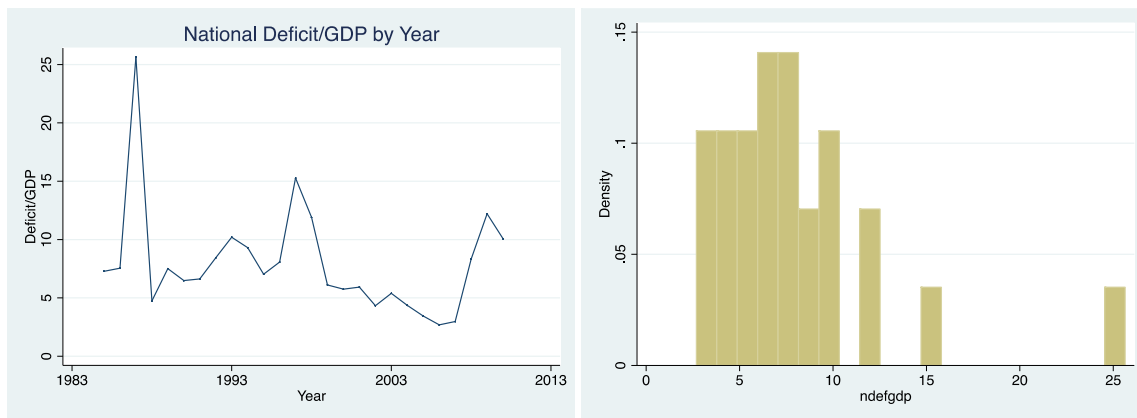
Mean: 7.986366

Median: 7.157067

Standard deviation: 4.585556

Min: 2.688667

Max: 25.63932



Variable name: *NSPENDGDP*

Data source: MINHAP BASESPE, Presupuestos; INE Spanish National Accounting

Coverage: All years from 1985 - 2010

Variable description: Expenditures-to-GDP ratio of Spain's federal government

Descriptive statistics:

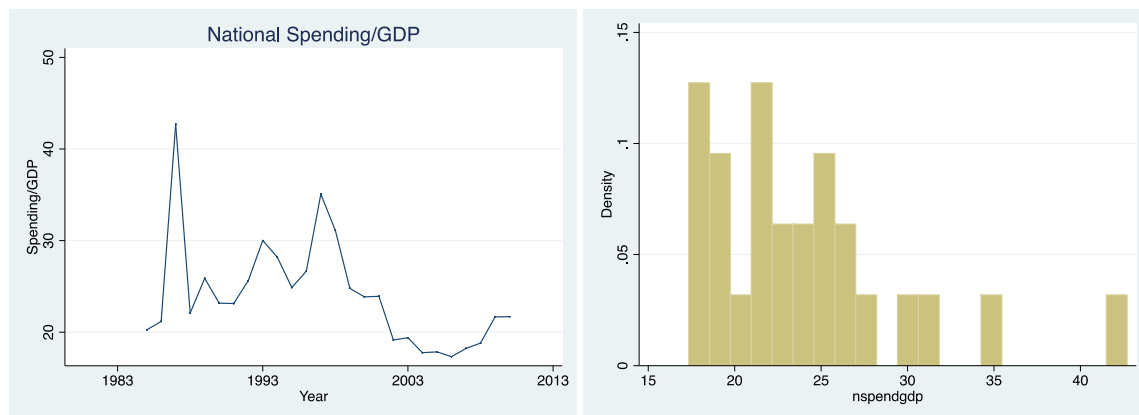
Mean: 24.01842

Median: 23.15001

Standard deviation: 5.741156

Min: 17.33563

Max: 42.70574



Variable name: *RPARTY*

Data source: historiaelectoral.com

Coverage: All years from 1983 - 2011

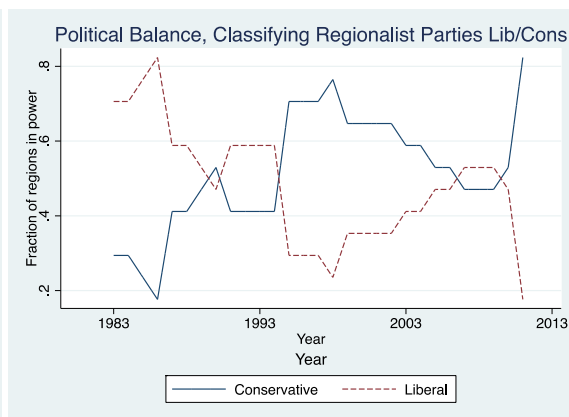
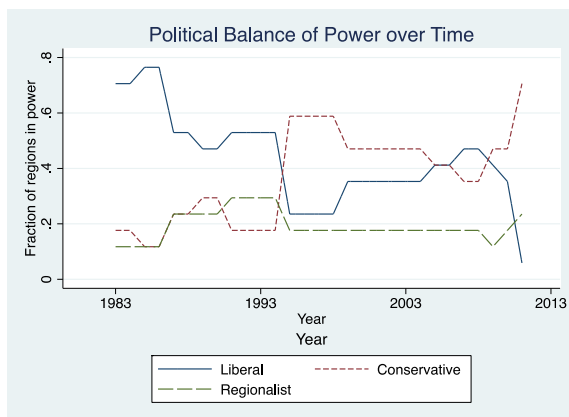
Variable description: Ruling party in the regional parliament

Variable values and coding:

CC
 CiU
 FAC
 PAR
 PNV
 PP
 PRC
 PSOE
 UPCA
 UPN

Frequency distribution:

Winning Party/Coalition	Freq.	Percent
CC	21	4.26
CiU	22	4.46
FAC	1	0.20
PAR	8	1.62
PNV	26	5.27
PP	179	36.31
PRC	8	1.62
PSOE	219	44.42
UPCA	4	0.81
UPN	5	1.01
Total	493	100.00



Party indicator variables: I created a 0/1 indicator variable for each of the following categories of *R*PARTY: PSOE (called *R*PSOE), PP (called *R*PP), and all others (called *R*AUTO, indicating autonomous leanings), as well as 0/1 indicator variables for PSOE, PRC, and some instances of PNV when the PNV formed coalitions with conservative partners (called *R*LIB), and for PP, CiU, UPN, FAC, CC, PAR, UPCA, and some instances of PNV when the PNV formed coalitions with liberal partners (called *R*CONS)

Variable name: *CYCLE*

Data source: historiaelectoral.com

Coverage: All years from 1983 - 2011

Variable description: Point in regional electoral cycle of each observation; where each observation is relative to regional parliamentary elections

Variable values and coding:

- 1: Election year
- 2: Year after election
- 3: 2 years after election

4: 3 years after election

Frequency distribution:

cycle	Freq.	Percent
1	134	27.18
2	119	24.14
3	117	23.73
4	123	24.95
Total	493	100.00

Electoral cycle indicator variables: I created a 0/1 indicator variable for each category of *CYCLE*: *ELEC* (if *CYCLE* = 1), *ELEC_3* (if *CYCLE* = 2), *ELEC_2* (if *CYCLE* = 3), and *ELEC_3* (if *CYCLE* = 4)

Variable name: *NPARTY*

Data source: historiaelectoral.com

Coverage: All years from 1983 - 2011

Variable description: Ruling party in Spain's national parliament

Variable values and coding:

PP
PSOE

Frequency distribution:

Party in Power	Freq.	Percent
PP	9	31.03
PSOE	20	68.97
Total	29	100.00

Ruling party indicator variables: I created a 0/1 indicator variable for each category of *NPARTY*: PP (called *NPP*) and PSOE (called *NPSOE*)

Variable name: *EURO*

Coverage: All years from 1983 - 2011

Variable description: Dummy variable – whether or not observation was from after adoption of the Euro currency in Spain

Variable values and coding:

0: Before Euro adoption

1: After Euro adoption (1999 and on)

Frequency distribution:

euro	Freq.	Percent
0	16	55.17
1	13	44.83
Total	29	100.00

Variable name: *POST02*

Coverage: All years from 1983 - 2011

Variable description: Dummy variable – whether or not observation was from after the changes in the regional tax code that took place in 2002

Variable values and coding:

0: Before tax law change

1: After tax law change (2002 and on)

Frequency distribution:

post02	Freq.	Percent
0	19	65.52
1	10	34.48
Total	29	100.00

Variable name: *BSL*

Coverage: All years from 1983 - 2011

Variable description: Dummy variable – whether or not observation was from after the Budgetary Stability Law that limits the size of government budget deficits

Variable values and coding:

- 0: Before Budgetary Stability Law
- 1: After Budgetary Stability Law (2007 and on)

Frequency distribution:

bsl	Freq.	Percent
0	24	82.76
1	5	17.24
Total	29	100.00

Variable name: *CRISIS*

Coverage: All years from 1983 - 2011

Variable description: Dummy variable – whether or not observation was from after the onset of the 2008 crisis that is still occurring in Spain in 2013

Variable values and coding:

- 0: Before Crisis
- 1: After Crisis (2008 and on)

Frequency distribution:

```
. tab crisis if region==1
```

2008 crisis dummy	Freq.	Percent
0	25	86.21
1	4	13.79
Total	29	100.00

Variable name: *LANG*

Coverage: All regions

Variable description: Dummy variable – whether or not observation was from one of the three regions that is home to a minority (non-Spanish) language group (these are the Basque Country, Catalonia, and Galicia)

Variable values and coding:

- 0: Not one of the three provinces home to a minority language

1: One of the three provinces home to a minority language group

Frequency distribution:

lang	Freq.	Percent
0	14	82.35
1	3	17.65
Total	17	100.00

Variable name: *ART151*

Coverage: All regions

Variable description: Dummy variable – whether or not observation was from one of the seven regions that was given control over health care and education within their borders before 2002, under article 151 of the Spanish Constitution (these are Andalusia, the Basque Country, the Canary Islands, Catalonia, Galicia, Navarre, and Valencia)

Variable values and coding:

0: Not one of the seven provinces subject to article 151

1: One of the seven provinces subject to article 151

Frequency distribution:

art151	Freq.	Percent
0	10	58.82
1	7	41.18
Total	17	100.00

Variable name: *FORAL*

Coverage: All regions

Variable description: Dummy variable – whether or not observation was from one of the two regions that has the Foral tax system (these are the Basque Country and Navarre)

Variable values and coding:

0: Not one of the two provinces that uses the Foral system

1: One of the two provinces that uses the Foral system

Frequency distribution:

foral	Freq.	Percent
0	15	88.24
1	2	11.76
Total	17	100.00

Variable name: *COA***Data source:** historiaelectoral.com**Coverage:** All regions from all years from 1983 - 2011**Variable description:** Dummy variable – whether or not the region has a coalition government**Variable values and coding:**

0: Government is not a coalition government

1: Government is a coalition government

Frequency distribution:

coa	Freq.	Percent
0	299	60.65
1	194	39.35
Total	493	100.00

Variable name: *MINORITY***Data source:** historiaelectoral.com**Coverage:** All regions from all years from 1983 - 2011**Variable description:** Dummy variable – whether or not the region has a minority government**Variable values and coding:**

0: Government is not a minority government

1: Government is a minority government

Frequency distribution:

minority	Freq.	Percent
0	402	81.54
1	91	18.46
Total	493	100.00

Variable name: *LARGEST*

Data source: historiaelectoral.com

Coverage: All regions from all years from 1983 - 2011

Variable description: Dummy variable – whether or not the ruling party in the regional parliament got the largest number of votes in the last election

Variable values and coding:

- 0: Ruling party did not get the largest number of votes
- 1: Ruling party got the largest number of votes

Frequency distribution:

largest	Freq.	Percent
0	72	14.60
1	421	85.40
Total	493	100.00

Variable name: *NEWGOVT*

Data source: historiaelectoral.com

Coverage: All regions from all years from 1983 - 2011

Variable description: Dummy variable – whether or not the ruling party in the regional parliament took power in the most recent election

Variable values and coding:

- 0: Ruling party took power prior to the last election
- 1: Ruling party took power in the last election

Frequency distribution:

newgovt	Freq.	Percent
0	308	62.47
1	185	37.53
Total	493	100.00

Variable name: *BAILOUT*

Coverage: All regions

Variable Description: Whether or not a region's government received a bailout in 2012

Variable values and coding:

0: Regional government did not receive a bailout in 2012

1: Regional government received a bailout in 2012

Frequency distribution:

bailout	Freq.	Percent
0	8	47.06
1	9	52.94
Total	17	100.00

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Figures and Tables

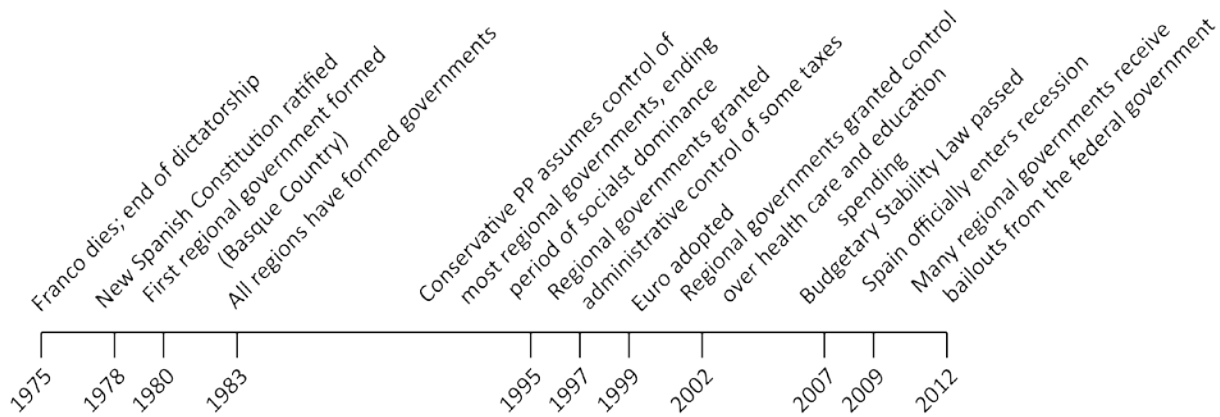


Figure 1: Timeline of Spanish federalism since the death of Francisco Franco.



Figure 2: Map of Spain's Autonomous Communities

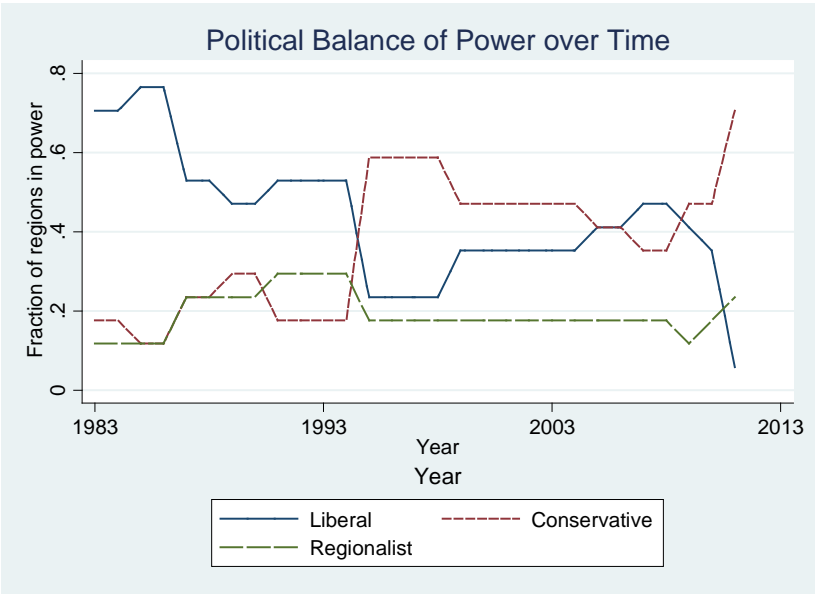


Figure 3: The political balance of power in Spain's regions over time

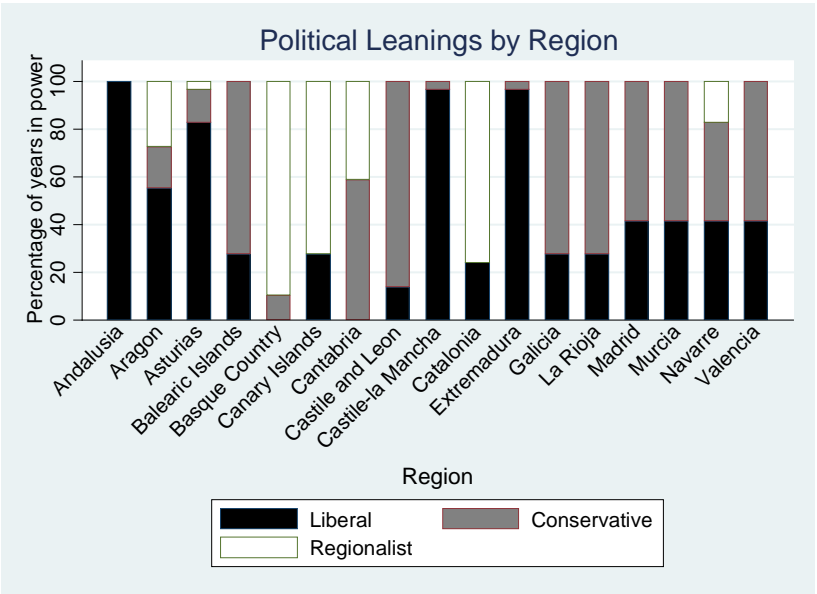


Figure 4: A diagram of the political leanings of each region over time

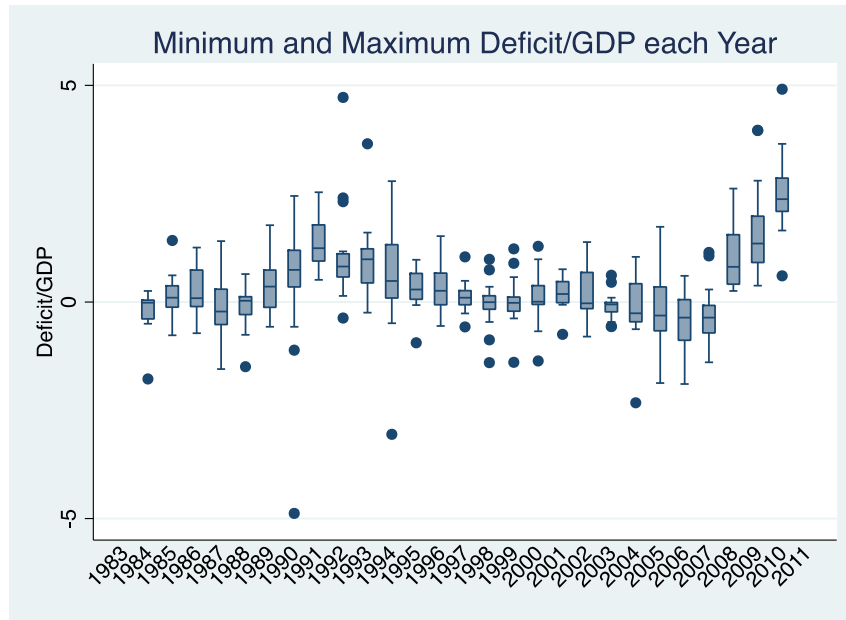


Figure 5: Average, maximum, and minimum regional deficit/GDP over time

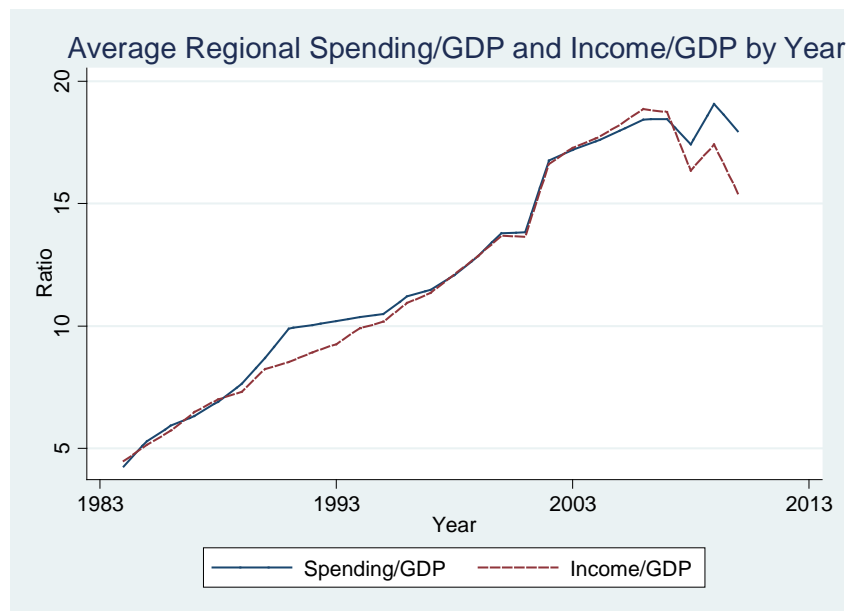


Figure 6: Average regional government expenditures and revenues over time

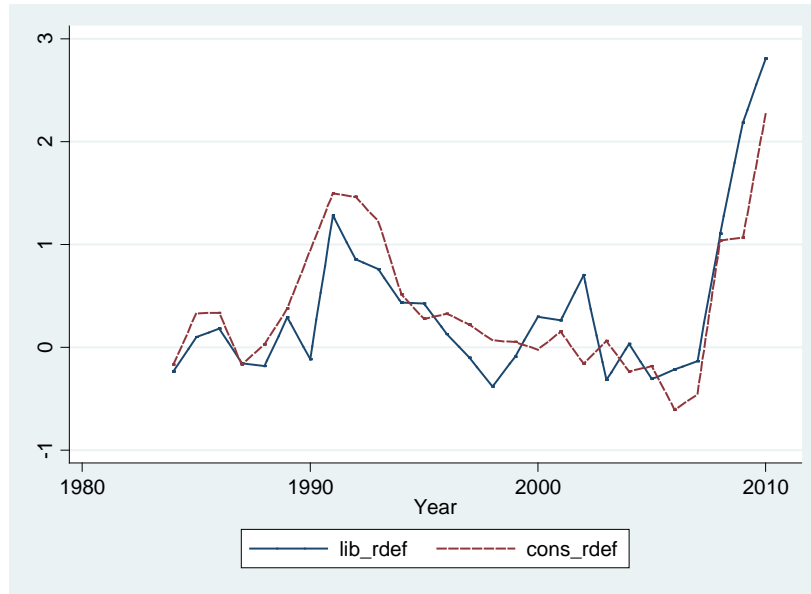


Figure 7: Deficit/GDP in regions ruled by conservative (cons_rdef) and liberal (lib_rdef) parties

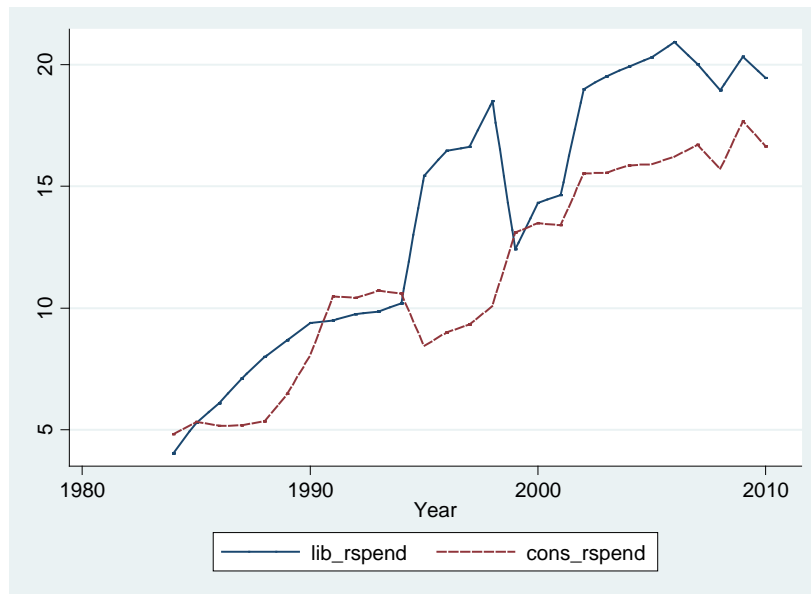


Figure 8: Spending/GDP in regions ruled by conservative (cons_rsend) and liberal (lib_rsend) parties

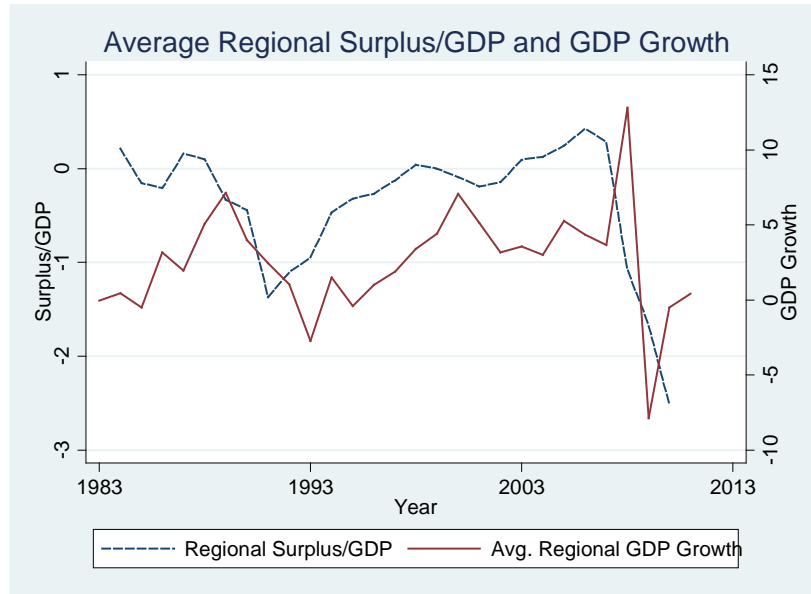


Figure 9: A comparison of regional GDP growth and deficits over time

	Observations	Mean	Std. Deviation	Min	Max
New gov't	158	0.3016461	1.025827	-3.0572	4.72131
Established gov't	301	0.3917652	0.9741619	-4.881807	4.911984
Coalition	186	0.2528199	1.046044	-4.881807	3.963009
Non-coalition	273	0.4342744	0.9484555	-2.327822	4.911984
Bailed out	243	0.4554891	0.951265	-3.0572	4.911984
Not bailed out	216	0.2541554	1.027824	-4.881807	4.72131

Table 1: Deficit/GDP for different types of regions

	Observations	Mean	Std. Deviation	Min	Max
New gov't	158	9.45634	6.355928	1.120092	23.49165
Established gov't	301	13.79745	6.502938	1.740452	30.90627
Coalition	186	13.18911	6.138804	1.120092	25.55566
Non-coalition	273	11.69948	7.113658	1.236351	30.90627
Bailed out	243	12.03416	6.089077	1.120092	26.4554
Not bailed out	216	12.60571	7.462015	1.236351	30.90627

Table 2: Spending/GDP for different types of regions

	SST	SS_AY	SS_WY	SS_AR	SS_WR
Deficit/GDP	450.75327	205.17581	245.57747	16.219245	434.53403
Spending/GDP	20981.514	9621.365	11360.148	7815.3728	13166.141

Table 3: Variance in deficit/GDP and spending/GDP ratios

	SST	SS_AY	SS_WY	SS_AR	SS_WR
GDP-per-capita	$3.632 \cdot 10^8$	$1.754 \cdot 10^8$	$1.878 \cdot 10^8$	$1.608 \cdot 10^8$	$1.905 \cdot 10^8$
GDP growth	8370.2578	6226.6126	2143.6455	94.814578	8268.4199
Discretionary/Total Spending	3887.8494	429.38304	3458.4661	7647.9478	1338.5342
Transfers/Total Income	229986.91	20915.24	209071.67	157169.12	72817.781
Conservative Government	123.1359	12.077079	111.05882	33.868501	86.758621
Coalition Government	117.65923	4.8357001	112.82353	52.0775	61.724136

Table 4: Variance in economic controls and political factors

Variable List
Dependent variables
Deficit/GDP ratio (%) Spending/GDP ratio (%) Discretionary spending/GDP ratio (%)
Time- and region-variant variables
Year-over-year GDP growth (%) 1-, 2-, and 3-year lagged terms GDP-per-capita, 1980 base year (€) Transfers/total revenues (%) Discretionary spending/total spending (%) Total revenues/GDP Regional party in power Electoral cycle Coalition government Minority government Largest vote-winner leads government New government
Region-invariant variables
10-year interest rate on Spanish government debt (%) Inflation (%) Federal deficit/GDP ratio (%) (used when dependent variable is deficit/GDP ratio) Federal spending/GDP ratio (%) (used when dependent variable is spending/GDP ratio) National party in power Euro adoption 2002 tax and spending reform Budget Stability Law 2008 – present crisis
Time-invariant variables
Minority language region Region originally subject to Article 151 of Spanish Constitution Foral tax system

Table 5: List of variables used in models

		Mean	Std. Error	P(Bailed out < Not bailed out)
Deficit/GDP, 2010	Bailed out	2.936178	0.341482	0.0300
	Not bailed out	2.069926	0.2402736	
Deficit/GDP, 2007-2010	Bailed out	1.465169	0.2371855	0.0742
	Not bailed out	0.9949237	0.2170616	

Table 6: t-test to see if bailed out regions had higher deficits than non-bailout out regions in the beginning of the crisis

VARIABLES	(1) rdefgdp	(2) rdefgdp	(3) rdefgdp w/ Region FE	(4) rdefgdp w/ Region FE	(5) rdefgdp w/ Year FE	(6) rdefgdp w/ Year FE	(7) rdefgdp After 2001
rgdpcap	0.000235*** (6.89e-05)	0.000131* (6.98e-05)	0.000397*** (9.23e-05)	0.000227** (0.000102)	8.30e-06 (7.00e-05)	1.85e-05 (7.10e-05)	0.00166*** (0.000319)
rgdpgrowth	-0.0533*** (0.0110)	-0.0513*** (0.0106)	-0.0580*** (0.0111)	-0.0537*** (0.0107)	0.0159 (0.0168)	0.0162 (0.0168)	-0.0969*** (0.0187)
rgdpgrowthl1		-0.0277** (0.0109)		-0.0308*** (0.0111)		-0.00404 (0.0168)	-0.0316 (0.0248)
rgdpgrowthl2		0.0673*** (0.0133)		0.0620*** (0.0139)		-0.00648 (0.0163)	0.126*** (0.0414)
rgdpgrowthl3		0.0351** (0.0148)		0.0309** (0.0151)		-0.0227 (0.0166)	0.0938* (0.0532)
coa	-0.444*** (0.115)	-0.411*** (0.110)	-0.493*** (0.152)	-0.475*** (0.146)	-0.313*** (0.0909)	-0.313*** (0.0911)	-0.0450 (0.404)
minority	-0.00882 (0.117)	0.105 (0.114)	0.151 (0.132)	0.178 (0.127)	0.136 (0.102)	0.110 (0.106)	0.0883 (0.470)
largest	-0.430*** (0.150)	-0.330** (0.144)	-0.332** (0.165)	-0.275* (0.159)	-0.0597 (0.123)	-0.0563 (0.124)	-0.576* (0.327)
newgovt	-0.0562 (0.108)	0.0716 (0.108)	-0.0368 (0.115)	0.0418 (0.113)	0.193** (0.0962)	0.188* (0.0964)	-0.164 (0.307)
elec	-0.0522 (0.129)	-0.0762 (0.124)	-0.0336 (0.129)	-0.0669 (0.124)	0.189 (0.141)	0.191 (0.142)	-0.366 (0.226)
elec_1	0.114 (0.126)	-0.0404 (0.125)	0.112 (0.125)	-0.0408 (0.125)	0.0555 (0.144)	0.0606 (0.144)	-0.000742 (0.215)
elec_3	0.127 (0.128)	0.0721 (0.125)	0.144 (0.127)	0.0764 (0.124)	0.176 (0.144)	0.173 (0.144)	0.227 (0.241)
rcons	-0.135 (0.0964)	-0.0784 (0.0928)	-0.187 (0.118)	-0.145 (0.114)	-0.00626 (0.0797)	-0.0134 (0.0802)	-0.529 (0.553)
transtot	0.00284 (0.00230)	0.00426* (0.00222)	0.00247 (0.00377)	0.00494 (0.00366)	0.00282 (0.00189)	0.00252 (0.00190)	0.00216 (0.0164)
disctot							-0.0161 (0.0289)
Constant	0.214 (0.326)	0.124 (0.314)	-0.354 (0.441)	-0.163 (0.427)	0.148 (0.292)	0.222 (0.300)	-4.965** (2.291)
Observations	459	459	459	459	459	459	153
R-squared	0.097	0.181	0.146	0.217	0.481	0.484	0.644

Table 7: Regression results, time- and region-variant variables, regional deficit/GDP

VARIABLES	(1) rdefgdp	(2) rdefgdp	(3) rdefgdp	(4) rdefgdp	(5) rdefgdp	(6) rdefgdp	(7) rdefgdp	(8) rdefgdp	(9) rdefgdp
rgdpcap	0.000227** (0.000102)	0.000661*** (0.000156)	0.000183 (0.000129)	0.000259** (0.000103)	0.000257** (0.000101)	0.000622*** (0.000143)	0.000605*** (0.000150)	0.000288** (0.000120)	0.000375*** (0.000104)
rgdpgrowth	-0.0537*** (0.0107)	-0.0532*** (0.0106)	0.0524*** (0.0110)	-0.0456*** (0.0113)	-0.0487*** (0.0107)	-0.0501*** (0.0106)	-0.0612*** (0.0108)	-0.0334*** (0.0105)	-0.0223** (0.00984)
rgdpgrowthl1	-0.0308*** (0.0111)	-0.0334*** (0.0109)	0.0304*** (0.0111)	-0.0281** (0.0111)	-0.0283** (0.0110)	-0.0257** (0.0110)	-0.0337*** (0.0110)	-0.0191* (0.0106)	-0.0138 (0.00984)
rgdpgrowthl2	0.0620*** (0.0139)	0.0548*** (0.0138)	0.0624*** (0.0139)	0.0716*** (0.0141)	0.0638*** (0.0137)	0.0679*** (0.0137)	0.0627*** (0.0137)	0.0523*** (0.0132)	0.0490*** (0.0123)
rgdpgrowthl3	0.0309** (0.0151)	0.0264* (0.0149)	0.0315** (0.0151)	0.0233 (0.0158)	0.0264* (0.0150)	0.0267* (0.0149)	0.0319** (0.0149)	0.0513*** (0.0145)	0.0450*** (0.0133)
coa	-0.475*** (0.146)	-0.416*** (0.145)	-0.489*** (0.148)	-0.554*** (0.149)	-0.416*** (0.146)	-0.477*** (0.143)	-0.480*** (0.144)	-0.398*** (0.138)	-0.403*** (0.128)
minority	0.178 (0.127)	0.174 (0.125)	0.167 (0.128)	0.121 (0.130)	0.197 (0.125)	0.144 (0.125)	0.159 (0.125)	0.189 (0.120)	0.158 (0.111)
largest	-0.275* (0.159)	-0.259* (0.157)	-0.269* (0.160)	-0.211 (0.160)	-0.237 (0.158)	-0.278* (0.157)	-0.247 (0.157)	-0.126 (0.152)	-0.113 (0.141)
newgovt	0.0418 (0.113)	0.0364 (0.112)	0.0519 (0.115)	0.116 (0.115)	0.0839 (0.113)	0.0320 (0.112)	0.0219 (0.112)	0.0837 (0.107)	0.0719 (0.0998)
elec	-0.0669 (0.124)	-0.0853 (0.122)	-0.0670 (0.124)	-0.0717 (0.124)	-0.0619 (0.123)	-0.0331 (0.122)	-0.0452 (0.123)	-0.0986 (0.117)	0.0887 (0.110)
elec_1	-0.0408 (0.125)	-0.0424 (0.123)	-0.0394 (0.125)	-0.0253 (0.125)	-0.0412 (0.123)	-0.0548 (0.123)	-0.00663 (0.124)	0.0191 (0.118)	0.0111 (0.110)
elec_3	0.0764 (0.124)	0.0110 (0.124)	0.0824 (0.125)	0.154 (0.129)	0.0607 (0.123)	0.0680 (0.122)	0.0855 (0.123)	0.0804 (0.118)	0.0308 (0.109)
rcons	-0.145 (0.114)	-0.0979 (0.113)	-0.159 (0.116)	-0.186 (0.117)	-0.0625 (0.116)	-0.159 (0.112)	-0.198* (0.113)	-0.0232 (0.109)	-0.0278 (0.101)
transtot	0.00494 (0.00366)	0.00727** (0.00366)	0.00439 (0.00380)	0.00273 (0.00381)	0.00851** (0.00380)	0.00542 (0.00360)	0.000796 (0.00382)	0.00681* (0.00347)	0.00625* (0.00322)
interest		0.0760*** (0.0210)							
inf			-0.0138 (0.0250)						
ndefgdp				0.0387*** (0.0105)					
ncons					-0.322*** (0.103)				
euro						-0.606*** (0.157)			
post02							-0.598*** (0.177)		
bsl								1.179*** (0.164)	
crisis									1.780*** (0.159)
Constant	-0.163 (0.427)	-2.262*** (0.716)	0.0608 (0.590)	-0.532 (0.459)	-0.453 (0.432)	-1.188** (0.497)	-0.955** (0.482)	0.864** (0.428)	1.096*** (0.392)
Observations	459	459	459	442	459	459	459	459	459
R-squared	0.217	0.240	0.218	0.242	0.234	0.243	0.237	0.302	0.395

Table 8: Regression results, time- and region-variant and time-variant variables, regional deficit/GDP

VARIABLES	(1) rdefgdp	(2) rdefgdp	(3) rdefgdp Before 2002	(4) rdefgdp 2002 and later	(5) rdefgdp
rgdpcap	0.000131* (6.98e-05)	0.000134* (7.34e-05)	-5.00e-05 (9.28e-05)	0.000434*** (0.000130)	0.000167** (7.45e-05)
rgdpgrowth	-0.0513*** (0.0106)	-0.0514*** (0.0106)	-0.0208 (0.0137)	-0.0634*** (0.0185)	-0.0525*** (0.0106)
rgdpgrowthl1	-0.0277** (0.0109)	-0.0278** (0.0109)	-0.00187 (0.0142)	0.00363 (0.0244)	-0.0291*** (0.0109)
rgdpgrowthl2	0.0673*** (0.0133)	0.0672*** (0.0133)	0.0337** (0.0145)	0.192*** (0.0396)	0.0652*** (0.0134)
rgdpgrowthl3	0.0351** (0.0148)	0.0350** (0.0148)	0.0574*** (0.0139)	0.0483 (0.0544)	0.0333** (0.0148)
coa	-0.411*** (0.110)	-0.412*** (0.110)	-0.479*** (0.123)	-0.501** (0.221)	-0.359*** (0.116)
minority	0.105 (0.114)	0.105 (0.115)	0.164 (0.108)	-0.590 (0.421)	0.143 (0.118)
largest	-0.330** (0.144)	-0.332** (0.145)	-0.0334 (0.164)	-0.806*** (0.244)	-0.271* (0.151)
newgovt	0.0716 (0.108)	0.0722 (0.108)	0.0756 (0.112)	-0.257 (0.233)	0.0696 (0.108)
elec	-0.0762 (0.124)	-0.0758 (0.124)	0.0959 (0.129)	-0.505** (0.246)	-0.0721 (0.124)
elec_1	-0.0404 (0.125)	-0.0401 (0.125)	-0.0470 (0.130)	-0.117 (0.239)	-0.0394 (0.125)
elec_3	0.0721 (0.125)	0.0723 (0.125)	0.103 (0.127)	0.244 (0.263)	0.0743 (0.125)
rcons	-0.0784 (0.0928)	-0.0777 (0.0932)	0.199** (0.100)	-0.614*** (0.210)	-0.0920 (0.0933)
transtot	0.00426* (0.00222)	0.00440* (0.00260)	0.00115 (0.00262)	0.00234 (0.00412)	0.00448** (0.00222)
lang		-0.0137 (0.136)			
art151			0.355*** (0.105)	-0.0462 (0.182)	
foral					-0.219 (0.161)
Constant	0.124 (0.314)	0.115 (0.329)	0.140 (0.355)	-0.953 (0.691)	-0.0279 (0.333)
Observations	459	459	306	153	459
R-squared	0.181	0.181	0.176	0.478	0.185

Table 9: Regression results, time- and region-variant and region-variant variables, regional deficit/GDP

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	rsgdp	rsgdp	rsgdp w/ Region FE	rsgdp w/ Region FE	rsgdp w/ Year FE	rsgdp w/ Year FE	rsgdp After 2002
rgdpcap	0.00231*** (0.000436)	0.00156*** (0.000452)	0.00729*** (0.000330)	0.00702*** (0.000378)	-0.00269*** (0.000420)	-0.00270*** (0.000427)	0.00123*** (0.000271)
rgdpgrowth	0.00484 (0.0700)	0.00341 (0.0685)	-0.0979** (0.0397)	-0.0941** (0.0399)	0.0895 (0.100)	0.0916 (0.101)	-0.111*** (0.0158)
rgdpgrowth1		0.132* (0.0703)		0.0139 (0.0411)		0.0239 (0.101)	-0.0754*** (0.0210)
rgdpgrowth2		0.290*** (0.0861)		0.0511 (0.0516)		0.00731 (0.0978)	-0.196*** (0.0352)
rgdpgrowth3		0.239** (0.0956)		0.0568 (0.0561)		-0.0255 (0.0996)	-0.182*** (0.0452)
coa	0.926 (0.726)	1.082 (0.710)	-0.623 (0.541)	-0.631 (0.542)	1.779*** (0.545)	1.787*** (0.548)	-0.657* (0.343)
minority	-2.612*** (0.742)	-1.859** (0.741)	-0.128 (0.470)	-0.104 (0.471)	0.669 (0.610)	0.688 (0.635)	-0.374 (0.399)
largest	0.775 (0.950)	1.346 (0.936)	0.399 (0.590)	0.448 (0.592)	2.330*** (0.740)	2.325*** (0.743)	-0.353 (0.278)
newgovt	-2.839*** (0.687)	-1.883*** (0.699)	-0.706* (0.412)	-0.575 (0.422)	-0.253 (0.577)	-0.260 (0.580)	-0.434* (0.261)
elec	0.0679 (0.820)	0.217 (0.804)	0.331 (0.459)	0.341 (0.461)	0.439 (0.848)	0.447 (0.851)	0.0143 (0.192)
elec_1	0.666 (0.797)	0.719 (0.809)	0.598 (0.446)	0.594 (0.463)	0.409 (0.864)	0.418 (0.868)	0.00219 (0.183)
elec_3	-0.675 (0.813)	-0.394 (0.808)	-0.446 (0.454)	-0.411 (0.462)	-0.0291 (0.862)	-0.0291 (0.865)	-0.322 (0.205)
rcons	-2.112*** (0.611)	-1.756*** (0.601)	-1.201*** (0.421)	-1.144*** (0.423)	-1.110** (0.478)	-1.103** (0.482)	-1.031** (0.469)
transtot	0.0611*** (0.0146)	0.0704*** (0.0144)	0.112*** (0.0135)	0.115*** (0.0136)	0.0483*** (0.0113)	0.0482*** (0.0115)	0.0108 (0.0139)
disctot							0.0392 (0.0246)
Constant	3.666* (2.066)	2.472 (2.036)	-15.07*** (1.576)	-14.82*** (1.587)	16.05*** (1.754)	16.04*** (1.806)	14.13*** (1.945)
Observations	459	459	459	459	459	459	153
R-squared	0.221	0.262	0.766	0.767	0.599	0.599	0.983

Table 10: Regression results, time- and region-variant variables, regional spending/GDP

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	rspendgdp	rspendgdp	rspendgdp	rspendgdp	rspendgdp	rspendgdp	rspendgdp	rspendgdp	rspendgdp
rgdpcap	0.00702*** (0.000378)	0.00239*** (0.000512)	0.00508*** (0.000456)	0.00654*** (0.000397)	0.00693*** (0.000377)	0.00391*** (0.000500)	0.00271*** (0.000491)	0.00718*** (0.000471)	0.00738*** (0.000440)
rgdpgrowth	-0.0941** (0.0399)	-0.0997*** (0.0347)	-0.0357 (0.0388)	-0.120*** (0.0406)	-0.110*** (0.0401)	-0.122*** (0.0369)	-0.00866 (0.0354)	-0.100** (0.0414)	-0.113*** (0.0415)
rgdpgrowthl1	0.0139 (0.0411)	0.0416 (0.0358)	0.0318 (0.0391)	-0.00745 (0.0407)	0.00611 (0.0410)	-0.0265 (0.0382)	0.0471 (0.0358)	0.0103 (0.0416)	0.00388 (0.0415)
rgdpgrowthl2	0.0511 (0.0516)	0.127*** (0.0453)	0.0684 (0.0491)	0.0193 (0.0519)	0.0453 (0.0513)	0.00439 (0.0479)	0.0428 (0.0448)	0.0540 (0.0519)	0.0587 (0.0517)
rgdpgrowthl3	0.0568 (0.0561)	0.105** (0.0489)	0.0799 (0.0534)	0.0204 (0.0578)	0.0709 (0.0560)	0.0899* (0.0519)	0.0461 (0.0487)	0.0505 (0.0572)	0.0485 (0.0562)
coa	-0.631 (0.542)	-1.266*** (0.475)	-1.227** (0.522)	-0.495 (0.548)	-0.812 (0.543)	-0.616 (0.500)	-0.573 (0.471)	-0.654 (0.544)	-0.673 (0.542)
minority	-0.104 (0.471)	-0.0611 (0.410)	-0.580 (0.453)	0.226 (0.479)	-0.162 (0.468)	0.162 (0.436)	0.118 (0.410)	-0.107 (0.471)	-0.0924 (0.470)
largest	0.448 (0.592)	0.277 (0.515)	0.717 (0.563)	0.435 (0.586)	0.331 (0.589)	0.469 (0.546)	0.119 (0.515)	0.403 (0.598)	0.353 (0.594)
newgovt	-0.575 (0.422)	-0.518 (0.367)	-0.125 (0.406)	-0.515 (0.423)	-0.705* (0.422)	-0.498 (0.389)	-0.347 (0.367)	-0.588 (0.423)	-0.593 (0.421)
elec	0.341 (0.461)	0.538 (0.401)	0.336 (0.437)	0.323 (0.454)	0.325 (0.458)	0.0757 (0.426)	0.0930 (0.401)	0.351 (0.461)	0.250 (0.464)
elec_1	0.594 (0.463)	0.612 (0.403)	0.653 (0.440)	0.469 (0.458)	0.595 (0.460)	0.704 (0.428)	0.204 (0.404)	0.575 (0.465)	0.563 (0.463)
elec_3	-0.411 (0.462)	0.287 (0.406)	-0.145 (0.441)	-0.431 (0.472)	-0.363 (0.460)	-0.345 (0.427)	-0.515 (0.402)	-0.413 (0.463)	-0.385 (0.462)
rcons	-1.144*** (0.423)	-1.648*** (0.370)	-1.738*** (0.411)	-1.019** (0.431)	-1.400*** (0.432)	-1.035*** (0.391)	-0.541 (0.371)	-1.182*** (0.429)	-1.213*** (0.425)
transtot	0.115*** (0.0136)	0.0905*** (0.0120)	0.0907*** (0.0134)	0.127*** (0.0142)	0.104*** (0.0142)	0.112*** (0.0126)	0.163*** (0.0125)	0.115*** (0.0137)	0.115*** (0.0136)
interest		-0.811*** (0.0688)							
inf			-0.610*** (0.0884)						
nspendgdp				-0.148*** (0.0353)					
ncons					0.996*** (0.385)				
euro						4.767*** (0.549)			
post02							6.838*** (0.578)		
bsl								-0.361 (0.644)	
crisis									-1.045 (0.670)
Constant	-14.82*** (1.587)	7.579*** (2.348)	-4.895** (2.083)	-10.03*** (1.995)	-13.92*** (1.615)	-6.761*** (1.734)	-5.774*** (1.577)	-15.13*** (1.685)	-15.56*** (1.654)
Observations	459	459	459	442	459	459	459	459	459
R-squared	0.767	0.824	0.791	0.772	0.771	0.802	0.825	0.767	0.769

Table 11: Regression results, time- and region-variant and time-variant variables, regional spending/GDP

	(1)	(2)	(3)	(4)	(5)
VARIABLES	rsgdp	rsgdp	rsgdp Before 2002	rsgdp 2002 and later	rsgdp
rgdpcap	0.00156*** (0.000452)	0.00147*** (0.000475)	-0.000140 (0.000481)	-0.00271*** (0.000502)	0.000753 (0.000471)
rgdpgrowth	0.00341 (0.0685)	0.00539 (0.0686)	0.0991 (0.0710)	-0.0627 (0.0712)	0.0301 (0.0670)
rgdpgrowthl1	0.132* (0.0703)	0.135* (0.0705)	0.0707 (0.0735)	-0.0415 (0.0938)	0.163** (0.0689)
rgdpgrowthl2	0.290*** (0.0861)	0.293*** (0.0863)	0.0579 (0.0750)	-0.142 (0.153)	0.337*** (0.0845)
rgdpgrowthl3	0.239** (0.0956)	0.242** (0.0957)	0.116 (0.0718)	-0.493** (0.209)	0.281*** (0.0936)
coa	1.082 (0.710)	1.094 (0.711)	-0.360 (0.637)	-0.179 (0.852)	-0.0980 (0.734)
minority	-1.859** (0.741)	-1.877** (0.742)	0.440 (0.560)	-2.051 (1.622)	-2.729*** (0.745)
largest	1.346 (0.936)	1.403 (0.942)	0.596 (0.848)	1.548 (0.941)	-0.00225 (0.954)
newgovt	-1.883*** (0.699)	-1.906*** (0.700)	-0.820 (0.579)	-1.850** (0.898)	-1.838*** (0.682)
elec	0.217 (0.804)	0.202 (0.805)	-0.129 (0.670)	0.183 (0.947)	0.124 (0.785)
elec_1	0.719 (0.809)	0.704 (0.810)	-0.220 (0.675)	0.160 (0.921)	0.696 (0.789)
elec_3	-0.394 (0.808)	-0.400 (0.809)	-0.318 (0.658)	0.447 (1.011)	-0.443 (0.788)
rcons	-1.756*** (0.601)	-1.782*** (0.603)	-0.0747 (0.519)	-3.406*** (0.810)	-1.448** (0.590)
transtot	0.0704*** (0.0144)	0.0653*** (0.0168)	0.0360*** (0.0136)	0.00889 (0.0158)	0.0655*** (0.0141)
lang		0.511 (0.883)			
art151			7.602*** (0.545)	1.325* (0.701)	
foral					4.953*** (1.018)
Constant	2.472 (2.036)	2.831 (2.130)	4.377** (1.839)	31.67*** (2.658)	5.915*** (2.108)
Observations	459	459	306	153	459
R-squared	0.262	0.263	0.538	0.493	0.300

Table 12: Regression results, time- and region-variant and region-variant variables, regional spending/GDP

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	discgdp	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE	discgdp w/ Region FE
rincgdp	0.624*** (0.0204)	0.376*** (0.0935)	0.381*** (0.0959)	0.379*** (0.0967)	0.437*** (0.115)	0.369*** (0.0976)	0.428*** (0.108)	0.627*** (0.0195)	0.643*** (0.0197)	0.659*** (0.0346)
rgdpcap	0.000438*** (0.000141)	0.000637** (0.000318)	0.000660** (0.000304)	0.000615* (0.000318)	0.000240 (0.000552)	0.000516 (0.000464)	8.31e-05 (0.000681)	0.000605*** (0.000139)	0.000405*** (0.000147)	0.000688*** (0.000224)
rgdpgrowth	-0.0632*** (0.0169)	-0.0736*** (0.0176)	-0.0759*** (0.0161)	-0.0669** (0.0273)	-0.0499 (0.0331)	0.0691*** (0.0185)	-0.0564** (0.0279)	-0.0650*** (0.0160)	-0.0637*** (0.0168)	-0.0675*** (0.0180)
rgdpgrowth1	-0.0360 (0.0239)	-0.0406 (0.0274)	-0.0453 (0.0288)	-0.0386 (0.0276)	-0.0356 (0.0288)	-0.0350 (0.0300)	-0.0334 (0.0296)	-0.0396* (0.0234)	-0.0367 (0.0224)	-0.0383 (0.0243)
rgdpgrowth2	0.0507 (0.0403)	-0.0161 (0.0547)	-0.0261 (0.0609)	-0.0167 (0.0550)	-0.00978 (0.0556)	-0.00744 (0.0581)	-0.0110 (0.0552)	0.0462 (0.0387)	0.0587 (0.0379)	0.0568 (0.0421)
rgdpgrowth3	0.175** (0.0714)	0.0816 (0.0509)	0.0810 (0.0518)	0.0858 (0.0544)	0.0533 (0.0631)	0.0924 (0.0660)	0.0678 (0.0559)	0.177** (0.0702)	0.174*** (0.0663)	0.186*** (0.0699)
coa	-0.653*** (0.192)	0.853* (0.499)	0.855* (0.503)	0.853* (0.501)	0.892* (0.510)	0.842* (0.493)	0.873* (0.517)	-0.629*** (0.187)	-0.178 (0.182)	-0.484** (0.243)
minority	0.574* (0.328)	0.619 (0.486)	0.606 (0.490)	0.607 (0.488)	0.577 (0.485)	0.608 (0.493)	0.563 (0.492)	0.765*** (0.247)	0.642** (0.272)	0.794** (0.389)
largest	-0.346 (0.232)	-0.0210 (0.232)	-0.000388 (0.237)	-0.0173 (0.235)	0.0833 (0.234)	-0.0346 (0.234)	0.0872 (0.234)	-0.419* (0.226)	-0.371* (0.212)	-0.246 (0.236)
newgovt	-0.576** (0.266)	-0.514* (0.276)	-0.499* (0.289)	-0.510* (0.277)	-0.516* (0.271)	-0.512* (0.277)	-0.500* (0.278)	-0.247 (0.279)	-0.434* (0.251)	-0.485* (0.267)
elec	-0.120 (0.232)	0.0978 (0.171)	0.0798 (0.195)	0.0970 (0.173)	0.180 (0.170)	0.106 (0.180)	0.184 (0.174)	-0.124 (0.218)	-0.132 (0.209)	-0.104 (0.231)
elec_1	-0.0287 (0.238)	-0.0416 (0.168)	-0.0685 (0.205)	-0.0280 (0.176)	0.0315 (0.173)	-0.0412 (0.169)	-0.000106 (0.165)	-0.0655 (0.229)	-0.0986 (0.218)	-0.0312 (0.236)
elec_3	0.345 (0.251)	0.340* (0.172)	0.311 (0.215)	0.333* (0.176)	0.374** (0.164)	0.320* (0.178)	0.350** (0.164)	0.338 (0.240)	0.373 (0.226)	0.361 (0.244)
rcons	-0.784*** (0.193)	0.278 (0.442)	0.276 (0.447)	0.280 (0.445)	0.262 (0.440)	0.287 (0.448)	0.264 (0.440)	-0.716*** (0.193)	-0.311 (0.190)	-0.592** (0.280)
transtot	0.0193*** (0.00395)	0.00697 (0.0210)	0.00601 (0.0209)	0.00666 (0.0212)	-0.000194 (0.0195)	0.00762 (0.0208)	0.000220 (0.0193)	0.0282*** (0.00414)	0.0217*** (0.00406)	0.0220*** (0.00424)
interest			0.0794 (0.272)							
inf				-0.0322 (0.107)						
ndefgdp					0.0601 (0.0562)					
ncons						-0.108 (0.362)				
crisis							0.428 (0.401)			
lang								-0.928*** (0.192)		
art151									-0.936*** (0.149)	
foral										-0.772 (0.552)
Constant	-1.911** (0.946)	1.299 (2.896)	0.912 (3.052)	1.371 (2.879)	1.549 (2.860)	1.763 (3.256)	2.483 (3.107)	-2.805*** (0.907)	-2.331** (0.926)	-3.867** (1.722)
Observations	153	153	153	153	153	153	153	153	153	153
R-squared	0.932	0.968	0.968	0.968	0.968	0.968	0.968	0.939	0.946	0.934

Table 13: Regression results, all variables, regional discretionary spending/GDP

VARIABLES	(1) discfunds	(2) discfunds w/ Region FE	(3) discfunds w/ Region FE	(4) discfunds w/ Region FE	(5) discfunds w/ Region FE	(6) discfunds w/ Region FE	(7) discfunds w/ Region FE	(8) discfunds w/ Region FE	(9) discfunds w/ Region FE	(10) discfunds w/ Region FE
rgdpcap	0.00261** (0.00117)	0.00629** (0.00297)	0.00630** (0.00298)	0.00642** (0.00284)	0.00301 (0.00538)	0.00757* (0.00402)	0.00156 (0.00683)	0.00248** (0.00119)	0.00256** (0.00123)	0.00253** (0.00111)
rgdpgrowth	0.0520 (0.182)	-0.123 (0.194)	-0.124 (0.185)	-0.159 (0.286)	0.0507 (0.324)	-0.173 (0.193)	0.00998 (0.288)	0.0535 (0.183)	0.0517 (0.183)	0.0547 (0.181)
rgdpgrowthl1	0.0754 (0.213)	-0.141 (0.251)	-0.143 (0.254)	-0.150 (0.250)	-0.122 (0.270)	-0.205 (0.243)	-0.100 (0.285)	0.0788 (0.214)	0.0746 (0.213)	0.0780 (0.218)
rgdpgrowthl2	0.313 (0.341)	-0.0376 (0.403)	-0.0434 (0.510)	-0.0285 (0.417)	-0.140 (0.362)	-0.155 (0.467)	-0.134 (0.362)	0.318 (0.341)	0.314 (0.343)	0.317 (0.346)
rgdpgrowthl3	0.843 (0.594)	0.839* (0.442)	0.838* (0.450)	0.822* (0.490)	0.507 (0.667)	0.704 (0.635)	0.620 (0.581)	0.843 (0.595)	0.837 (0.597)	0.849 (0.591)
coa	-0.214 (1.193)	5.913 (4.832)	5.912 (4.872)	5.921 (4.864)	5.982 (5.059)	6.004 (4.817)	5.867 (5.131)	-0.239 (1.191)	0.0509 (1.358)	-0.347 (1.476)
minority	-6.294** (2.453)	-1.588 (3.550)	-1.595 (3.614)	-1.522 (3.553)	-2.038 (3.679)	-1.490 (3.512)	-2.160 (3.750)	-6.460** (2.540)	-6.272** (2.415)	-6.404** (2.665)
largest	-4.603** (1.990)	-1.363 (2.267)	-1.352 (2.262)	-1.388 (2.252)	-0.439 (2.190)	-1.194 (2.262)	-0.367 (2.219)	-4.545** (1.994)	-4.592** (2.005)	-4.722** (2.087)
newgovt	-3.250 (2.599)	-5.528* (2.840)	-5.521* (3.057)	-5.543* (2.867)	-5.684** (2.805)	-5.569** (2.799)	-5.543* (2.829)	-3.538 (3.019)	-3.188 (2.664)	-3.277 (2.574)
elec	0.924 (1.662)	1.805 (1.598)	1.797 (1.743)	1.801 (1.598)	2.637 (1.633)	1.750 (1.603)	2.694 (1.677)	0.926 (1.664)	0.925 (1.671)	0.898 (1.623)
elec_1	0.977 (1.712)	1.825 (1.584)	1.812 (1.892)	1.753 (1.556)	2.378 (1.629)	1.820 (1.579)	2.159 (1.575)	1.009 (1.703)	0.942 (1.728)	0.975 (1.719)
elec_3	2.374 (1.652)	2.744* (1.569)	2.728 (1.897)	2.791* (1.626)	2.794* (1.477)	2.937* (1.596)	2.632* (1.514)	2.379 (1.643)	2.391 (1.665)	2.358 (1.645)
rcons	-1.880 (1.222)	-6.746 (4.735)	-6.748 (4.757)	-6.749 (4.753)	-7.037 (4.970)	-6.859 (4.728)	-7.013 (4.969)	-1.934 (1.218)	-1.648 (1.483)	-1.955 (1.362)
transtot	0.0217 (0.0393)	0.205 (0.202)	0.205 (0.207)	0.206 (0.200)	0.156 (0.207)	0.199 (0.210)	0.156 (0.205)	0.0138 (0.0424)	0.0231 (0.0385)	0.0197 (0.0359)
interest			0.0401 (2.425)							
inf				0.170 (0.996)						
ndefgdp					0.456 (0.486)					
ncons						1.183 (3.030)				
crisis							3.461 (3.724)			
lang								0.824 (1.843)		
art151									-0.502 (1.266)	
foral										0.497 (2.467)
Constant	87.10*** (5.747)	65.60*** (15.07)	65.47*** (15.89)	64.78*** (14.26)	77.98*** (24.24)	62.05*** (14.39)	84.76*** (30.74)	87.79*** (5.769)	87.21*** (5.877)	87.61*** (5.355)
Observations	153	153	153	153	153	153	153	153	153	153
R-squared	0.173	0.341	0.341	0.341	0.349	0.342	0.350	0.174	0.174	0.174

Table 14: Regression results, all variables, regional discretionary spending/discretionary funds