Determinants of Government Size:
The Capacity for Partisan Policy under Political Constraints.

Diplomarbeit

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List of Abbreviations

A .....Austria
AUS .....Australia
BEL .....Belgium
CAN .....Canada
CH .....Switzerland
CPDS .....Comparative Political Data Set
DK .....Denmark
FIN .....Finland
FRA .....France
GDP .....Gross Domestic Product
GER .....Germany
IRE .....Ireland
ITA .....Italy
NLD .....Netherlands
NOR .....Norway
OECD .....Organization for Economic Cooperation and Development
OLS .....Ordinary Least Squares
PCSE .....Panel corrected standard errors
PDDB .....Political Economy of Public Debt Data Base
SNA .....United Nations System of National Accounts
SWE .....Sweden
TSCS .....Time-series cross-section
UK .....United Kingdom
USA .....United States of America

1 Political Determinants of Government Size

The size and scope of government is a recurring theme both in public and scientific discourse. Most of these debates center around the proper division of labour between the market on one side and the state on the other. Politicians, journalists, interest group leaders and also scientists often disagree with respect to how much the state should be involved in or interfere with economic matters. One opinion states that the state should restrict itself to its classic and basic tasks of domestic and foreign security because its interference with the economy would only lead to the distortion of market forces and thus to economic inefficiencies. On the other hand, proponents of a strong state argue that such an involvement is necessary to counteract the malfunctions and externalities a completely free market would create.

No matter which position is taken, one basic, although rather implicit, assumption of both normative prescriptions is that the level of government size can be, and indeed is, to a large extent purposely changed by government. The main focus of this thesis will be to explore the validity of this assumption. Generally, left parties like social-democratic and labour parties are associated with a preference for more interventionist policies and a greater scepticism towards market-mechanisms than Christian-democratic or even conservative or liberal parties. Thus, if this assumption is correct, party ideology should be one of the major driving forces of government size. This hypothesis will be statistically tested on pooled time-series cross-section (TSCS) data for 16 industrialized democratic countries over a period of 30 years. The study is based on the existing literature that examines the relationship between partisan governments and government size, but at the same time it aims at improving on previous research on theoretical as well as methodological grounds.

Most importantly, it takes into account two factors which potentially mediate the effects of government ideology on government size. Both have their origin in structural features of the political system. The first factor are veto players whose agreement is necessary for policy change (Tsebelis, 1995, 2002). The number of veto players is at least partly determined by the characteristics of political institutions. Depending on election system, regime type, and other institutions of the political system, the number of veto players varies across countries. This has consequences for the relationship between partisan

government and government size. It is reasoned that veto players blur partisan effects on policy output since incumbent parties have to make compromises with other actors in the political system (Schmidt, 2001).

The second constraining factor are interest organizations. Depending on the structure of the interest group system and its relations to state institutions, interest associations can have substantial influence on policy outputs. How this influence is transmitted can range from simple pressure on politicians and bureaucrats to fully-fledged "policy concertation" (Lehmbruch, 1984: 62). The latter describes the cooperative formulation and implementation of policies by the state and powerful interest associations on the system-level. In such a situation, the incumbent government does not only have to engage in compromises with veto players but also with organizationally strong business confederations and trade unions. The paper argues that this is a further hindrance to government in directly realizing its preferences regarding government size.

Theoretically, the analysis takes the perspective of the leading government party, for which both veto players and corporatist interest groups are context factors. It is hypothesized that the impact of its ideological stance is most pronounced in political systems where it does not face such political constraints on its discretion. Methodologically, the relationship between party ideology and government size is seen as being conditional on the number of veto players and the degree of corporatism in the interest group system. In regression analysis, conditional effects are appropriately modelled by interaction terms. Although this seems straightforward, the exploration of these interacting effects has been largely neglected in previous research on government size.

Especially the constraining effect of political institutions has often been acknowledged, but modelled as an independent term in the analysis with a hypothesized negative effect. While this negative relationship has often found empirical support, it is mainly due to the enduring growth of government size for the time periods usually examined. As the public sector is more and more cut back in the eighties and nineties, a negative impact actually means that institutional constraints furthered this retrenchment. But counter-majoritarian institutions are supposed to hinder policy change in any direction. Thus, from a theoretical perspective a hypothesis about an independent effect of veto players is inappropriate. Since

corporatist organizations are assumed to have a similar mediating impact on the effect of government ideology, modelling these factors through interaction terms results in a closer theory-model fit.

Another methodological improvement regards the use of an ideology indicator that varies not only across countries, but also over time. Previous studies usually used simple classifications dividing parties into broad party families like left, right, and liberal parties, and weighted them by the number of cabinet or parliamentary seats held. The variation in these indicators solely results from differences in the composition of cabinet or parliament. Ideology is implicitly assumed to be constant within party families as well as over time. This is a rather unrealistic assumption which gets more implausible the longer the time period and the larger the country sample under study. Furthermore, these classifications are usually based on subjective judgements which are likely to evaluate party ideology with regard to actual policy output rather than party preferences (Budge & Bara, 2001: 12). In contrast, the ideology indicator used here is objectively derived from election programs of parties. Although this also has some shortcomings as discussed below, it is still preferable to traditional measures.

The remainder of this paper is organized as follows: The next chapter examines the concept of government size in general, clarifies what is meant by the term in the context of this study, and discusses some measurement problems. The extent of economic activity of government is the main focus of the analysis and it is argued that among widely available indicators, public consumption expenditure and public employment most closely reflect this kind of pursuit. The chapter closes with a description and illustration of the dynamics of these indicators in general and with respect to single countries. Although some general trends are visible, it becomes obvious that large parts in the dynamics of government size are dependent on country specific differences in economic and political factors.

Chapter 3 reviews the literature that previously proposed such factors and tested their impact empirically. It concentrates mainly on papers that made some argument related to the major hypotheses in this analysis. Special attention is given to studies that examined the impact of partisan politics, institutional constraints, and interest groups on government size. Theoretical and methodological issues are discussed as well as some results of the

analyses. Although the literature review focuses on the political factors of main interest here, it is also used to detect other factors commonly associated with the size of government. The identification of these alternative or complementary explanations is helpful for a correct specification of the statistical model which is developed in the latter part of the paper.

The theories to be examined in the analysis are discussed in more detail in chapter 4. To a large extent, the chapter also focuses on the theories directly related to the main research question. In the first section, the "parties do matter" thesis is more closely reviewed and its shortcomings discussed. It is concluded that partisan theory (Hibbs, 1977, 1992) is most plausible in Westminster style democracies, that is where governments enjoy a very high institutional power for action and the interest group system is organizationally dispersed. The theory on veto players (Tsebelis, 1995, 2002) is endorsed as a promising approach to account for institutional constraints in a consistent way across countries. To account for the impact of interest groups, the concept of corporatism (Schmitter & Lehmbruch, 1979; Lehmbruch & Schmitter, 1982) is discussed and which of its features should result in hindrances to government discretion is made clear. At the end of the chapter, socio-demographic and economic theories recognized as influential on government size in previous research are briefly described.

Chapter 5 is devoted to the selection of the data, the operationalization of theoretical concepts, and the explicit stating of testable hypotheses for the main theories. The selection of the sample was to a large extent governed by data availability for the major variables in the study. Although this is obviously not ideal, it was the only practical solution. A description of the steps involved in reaching the sample guarantees the transparency of the procedure. The operationalization of the dependent variables and the political factors is described and advantages and deficiencies noted. Overall, corporatism stands out in that it is most problematic to quantify reliably and unambiguously, whereas the indicators for ideology and veto players are comparatively precise and inter-subjectively replicable. The control variables representing other theories are introduced in the last section of the chapter.

The statistical model for the analysis is derived in chapter 6. It is argued that TSCS regression has substantial advantages over its cross-sectional or longitudinal alternatives, but also severe limitations. Each of these problems are discussed and it is noted how they are dealt with in the current analysis. Two further important issues regard the interpretation of the results of the statistical analysis. First, since the main hypotheses of this paper are tested through interaction terms, their meaning and the derivation of conditional effect sizes is examined. Secondly, the use and value of significance tests are discussed. Although these tests are also applied in this study, it is acknowledged that their importance is unduly exaggerated and more attention has to be given to the actual effect sizes and to the robustness of the findings.

The results of the analysis are presented in chapter 7. It is divided into two main parts, each devoted to one dependent variable. The first part examines the determinants of government consumption expenditure and the second part of government employment. Each model is first calculated using all observations over the whole period. To investigate the stability of parameter estimates, the regressions were rerun for two sub-periods. After a discussion of the general results, the interaction effects detected are examined more closely. Subsequently, the validity of the assumptions of the model is discussed and the robustness of the findings to the exclusion of single countries inspected. Especially the latter procedure turned out to be crucial for judging the accuracy of conclusions reached from the results of the analysis. The chapter concludes with a summary and comparison of the results for the two dependent variables.

Finally, chapter 8 explores what factors might be responsible for differing findings and how far the results of the two analyses can be transferred to the underlying concept of public sector size. The chapter closes with some tentative conclusions drawn from this discussion.

2 The Size of Government

Before entering into the theoretical debate about the determinants of government size it is necessary to clarify what is actually meant by the term in the context of this study. The first section in this chapter discusses the ambiguities associated with government or public sector as a theoretical concept. The second section describes some problems in empirically delimiting its scope and size. Section 2.3 gives a descriptive overview of government size, its development over time, and its variation across countries, which will more vividly illustrate the importance and appeal of the topic for empirical research.

2.1 Concept and Definition

Given the multitude of quantitative studies on government size, there is surprisingly little discussion on the demarcation of government and its empirical measurement. As Rose (1983: 157) noted, before engaging in the analysis of the causes of government growth, it is necessary to develop an a priori concept of government. Only with such a prior idea of government can existing government statistics be examined to the extent they provide adequate indicators for the measurement of government activity.

Quantitative analyses usually equate government size with readily available government statistics such as expenditure, revenue or employment, without further elaboration on the validity of those indicators. By starting with a definition of government and a discussion of its delineation, an examination of the appropriateness of the indicators used and a revelation of their shortcomings is inevitable.

Lane (2000: 15) proposed "State general decision making and its outcomes" as the most general definition for government. A similar definition was advanced by Peters and Heisler (1983: 184), but with a stronger focus on steering. According to them, "Government is … the institution that imparts direction to its society by various means of collective decision making and exercises the state's authority on a daily basis." In so far the latter definition gives the impression of government as a unitary, centrally organized decision body, it is inadequate. Many modern states exhibit a federalist state order where decision making is, at least in certain areas, highly decentralized among regional units. And even in formally unitary states, semi-public agencies, publicly owned companies or regional administrations

still have considerable discretion in their actions. Overall, Peter and Heisler's definition lays too much stress on authoritative decisions which are not necessary for many activities pursued by the state, especially in economic matters.

But it points to government activities usually disregarded in measures of government size. Governments consume goods and services, allocate or redistribute resources, and collect taxes, all of which can be measured in monetary terms. But the costs and benefits of regulations, of indirect subsidies like tax allowances, and its contracting powers as employer and consumer allow government substantial influence over economic resources with relatively little reflection in expenditure or employment data (Peters & Heisler, 1983: 183-186). In short, many modes of government influence on the economy are not adequately represented by monetary or employment indicators.

Nevertheless, Lane's definition is preferable in that it is sufficiently general to be applied across countries and over time. But a functional restriction is imposed on it for the purpose of this study. The focus here lies on government activity in economic terms, since ideological differences between governments should become most visible here. The division of labor between the state and the market is a major dividing line between left and right parties. Often, the economic part of state activity is more narrowly described as public sector (Peters & Heisler, 1983: 186), so the two terms will be used interchangeably.

If we are content with the definition of government as state general decision making and its outcomes with regard to economic matters, the next step is to render it more concrete by a closer specification of what constitutes the state. As noted above, the state is not a single unitary actor but rather a system of interrelated institutions and organizations. Obviously, it includes governments at all levels, be it central, state, or local governments. The distinction between public and private is not so clear-cut with regard to other cases and it is more and more blurred with advances to improve the efficiency of public services. There are firms with different degrees of government ownership or control, like in telecommunication, railway, or post; privately organized firms whose primary client or purchaser is government, like in the defence industry; or organizations with special mandates or licenses from government, like public TV stations or semi-public organizations "self-regulated" by interest groups (Peters & Heisler, 1983: 183-186).

Generally, a measure of public sector size should include all economic activities of organizations for which the government has a substantial direct or indirect say in decision making. In cases were an organization is completely owned, controlled, and operated by government, it is clearly a public organization. But given the variety of hybrid public-private organizational forms in the mixed economy, an attempt to delineate what constitutes public and what private activities in general seems very difficult, if not impossible. The next section introduces the measures of government size used in the analysis and discusses how they perform with regard to this and related problems.

2.2 Measuring Government Size

The most commonly used indicators of government size are expenditure measures derived from national accounts. Often simply total government expenditure is used to signify the size of the public sector. This might be appropriate in some instances, depending on the aim of the study, but here a more disaggregated view is in order. Several components of total government expenditure do not directly reflect economic activity by the state or do not relate to the theoretical argument made in this paper. Thus, the choice of the financial indicator was governed by a trade-off between most closely reflecting the definition of government size as given in the last section and the association to the theoretical argument about partisan politics.

The major parts of overall government spending can be classified into capital formation, subsidies, social transfers, military expenditure, interest payments, and civilian consumption expenditure (Cusack & Fuchs, 2002: 11). On the whole, it seemed that a focus on civilian consumption expenditure is most appropriate. Social transfers and interest payments do not claim any economic resources; they are just redistributions (Gemmel, 1993: 2). This is also true for subsidies, but they can be seen as a device of governments to influence economic activity indirectly. Nevertheless, like in the case of capital expenditure, it is not clear how governments with different ideological positions relate to this component. Anyway, the underestimation of economic activity due to the neglect of capital spending and subsidies is small, since these components constitute only minor parts of overall outlays (see Cusack & Fuchs, 2002: 11-14). Military spending is also excluded on theoretical grounds, since it has been argued that the international security environment rather than ideological factors is its main driving force (Blais et. al., 1996).

Overall, ideology is most likely to show its effect on civilian consumption expenditure, which measures the direct economic involvement of government as a producer and purchaser of non-military goods and services. Besides traditional state functions like public safety and administration, it mainly includes spending on education, health care, child care, and other welfare provisions by the state, which is seen as a major domain of left parties. Thus, using civilian consumption expenditure in the analysis allows for a more powerful test of the partisan hypothesis. Furthermore, it avoids a problem associated with total government expenditure in percent of gross domestic product (GDP) as a measure of government size, which is not a "real" ratio measure and overstates the size of the public sector (Warlitzer, 1999: 5). Only government consumption expenditure is included in the calculation of society's total economic output.

A further advantage of using consumption expenditure is that it is most directly comparable to a non-monetary indicator of government size, namely government employment. A major part of consumption expenditure consists of wages and salaries to public employees and public employment is another measure of the direct economic involvement of government. The use of two indicators for public sector size in the analysis and the comparison of the results allows for judging the certainty for which the findings can be prescribed to the underlying concept.

Both measures are originally drawn from National Accounts as published by the Organization for Economic Development and Cooperation (OECD), which are often referred to as the most comprehensive and internationally comparable source on government and economic statistics (e.g. Saunders, 1988: 272). Nevertheless, there are some classification and measurement problems that have to be addressed. Both indicators under-represent the actual involvement of government in economic matters. Although the definition of "general government" in national accounts, on which both measures are based, encompasses central, state, as well as local governments, it disregards all activities of public enterprises. Even if an enterprise is completely owned by the state, its activities will not be reflected in general government accounts if it engages in market-oriented activities (Cusack, 1991: 4). Furthermore, any qualitative devices of government to intervene in the economy, as described in the last section, are not or only to a little extent mirrored in these indicators. Since regulation is a major instrument of economic

government policies, this is another deficiency of the indicators with regard to the definition of government size.

In addition to these conceptual problems, Florio's (2001) recent analysis uncovers remarkable inconsistencies in public sector data provided in OECD National Accounts. The data on OECD countries should in principle be comparable since they are all based on the standardized United Nations System of National Accounts (SNA). But as Florio (2001) shows for several items of public sector data, some countries show figures that are logically impossible[1]. He concludes that most of these inconsistencies have their source in misinterpretations of SNA definitions by the statistical offices of member states, from which the OECD collects its data.

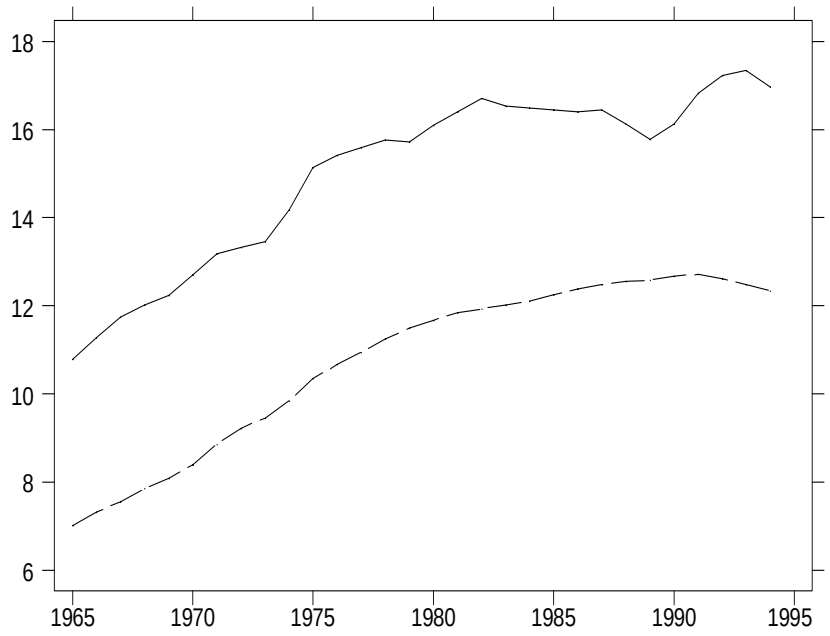
To sum up, there are serious problems regarding the validity and reliability of government expenditure and employment statistics as indicators for the scope of government. Despite these apparent shortcomings, the data published by the OECD is still the most reliable and comprehensive source on internationally comparable statistics available. Any kind of social research exhibits its distinct uncertainties which have to be reported and taken into account. Thus, when interpreting the data and the results of the analysis, it has to be kept in mind that these indicators do not give a full picture of public sector activities and any conclusions are principally confined to the narrower concepts these indicators directly represent. Having discussed the problems associated with civilian government employment and consumption expenditure as measures of public sector size, the next section will examine their dynamics over time and across countries.

2.3 The Dynamics of Government Size

This section gives a brief survey of the developments in government consumption expenditure and employment for the period and countries under investigation. It is setting the stage for the discussion of proposed explanations for these dynamics in the literature review of the next chapter.

[1] For example, a subcategory is larger than the category it is a part of (Florio, 2001: 185).

Figure 2.1: Average Government Size over Time, 1965-1994



—— Civilian Government Consumption Expenditure as a Share of GDP

– – – Civilian Government Employment as a Share of Working Age Population

Source: Cusack (for source description see table A6).
Note: Yearly averages based on 16 countries (for list of countries see table A1).

Figure 2.1 shows yearly averages of civilian government consumption spending and employment for the 16 industrialized democracies studied here[2] during the period from 1965 to 1994. Regarding the general pattern, there is a strong upward trend up to the early eighties for both indicators. Consumption expenditure starts at a mean of just under 11 % in 1960 and reaches about 16 % of GDP in 1980, a growth of almost half its initial level (see table 2.1). Government employment even grows on average by almost 65 % from a starting level of about 7 % of working age population to about 11.5 % in 1980 (see table 2.2).

During the eighties, the growth of both indicators slowed down considerably. After some increase in the early years of the decade, average consumption expenditure even returned to about its 1980 level at the end of the eighties, but only to increase again sharply in the

[2] For a list of the countries see table A1.

first few years of the nineties. Whether the renewed decrease of government consumption at the very end of the period is just a short term fluctuation or signifying a consolidation cannot be inferred from the data[3].

Table 2.1: Aggregate Statistics on Civilian Government Consumption, 1965-1994

	1965	Change in % 1965-1980	1980	Change in % 1980-1994	1994	Change in % 1965-1994
Mean	10.79	48.37	16.09	6.56	16.96	57.61
Standard Deviation	1.79	18.51	4.01	14.96	3.90	25.22
Range	5.77	66.85	15.09	61.79	12.89	93.73
Coeff. of Variation	0.17	0.38	0.25	2.28	0.23	0.44

Source: Cusack (for source description see table A6).
Note: All statistics based on 16 countries (for a list of countries see table A1) and original (unrounded) data; for statistics of individual countries see table A2.

Table 2.2: Aggregate Statistics on Civilian Government Employment, 1965-1994

	1965	Change in % 1965-1980	1980	Change in % 1980-1994	1994	Change in % 1965-1994
Mean	7.01	64.55	11.68	6.07	12.34	75.07
Standard Deviation	1.68	39.48	4.60	14.91	5.00	49.38
Range	5.10	125.48	16.67	64.40	15.48	175.46
Coeff. of Variation	0.24	0.61	0.39	2.46	0.40	0.66

Source: Cusack (for source description see table A6).
Note: All statistics based on 16 countries (for a list of countries see table A1) and on original (unrounded) data; for statistics of individual countries see table A3.

Government employment did not show such a dynamic behaviour during this decade. Although its growth lost some pace during the eighties, signs of a potential reversal of the upward trend are only visible in the early nineties. Generally, its growth shows a steadier

[3] The data of Atkinson and van den Noord (2001) indicate that consumption expenditure indeed decreased at least until the end of the millennium.

picture as compared to government consumption. The latter might be more susceptible to economic cycles. It looks like economic downturns were accompanied by strong increases in consumption expenditure. After the first oil-price shock in 1973, at the end of the seventies, and towards the end of the eighties, government consumption grew more rapidly and all these periods were marked by recessions. Thus it seems that public employment is far less influenced by short and medium term economic fluctuations than government consumption expenditure. Partly, this might simply have a technical reason. The denominator of public consumption is GDP, which automatically increases the overall measure when economic output decreases during times of recession. On the other hand, especially during the seventies, countercyclical policies of governments were not uncommon. Governments might have tried to boost the economy by stepping up state contracts.

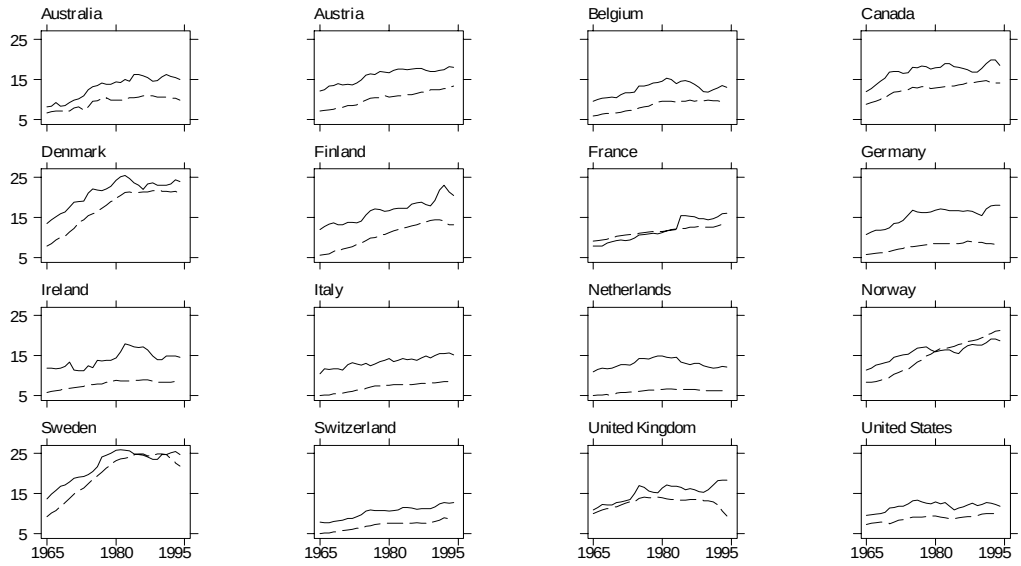
Overall, the figure confirms the story about a retrenchment of the state during the eighties and nineties. Increased unemployment, high public debt, and growing globalization of markets, among other factors, indeed seem to have led to a slowdown of the growth of the public sector, both as measured in expenditure and employment data. Despite its short but strong increase in the early nineties, consumption expenditure grew on average only by about six and a half percent from 1980 to 1994. In absolute terms this is roughly a percentage point increase from 16 to 17 % of GDP. Similarly, government employment increased on average only by 6 % since 1980 from 11.68 % to 12.34 % of working age population at the end of the period.

To sum up, government consumption expenditure and employment increased enormously during the 30 years under study, the former by on average 58 % and the latter by 75 %, whereby the bulk of this growth took place during the sixties and seventies. In 1994, on average 12.34 % of the population between 14 and 65 was employed by the government and 16.96 % of the total economic output of a state is directly produced or ordered by it. This study explores what factors favored and hindered such a dramatic growth of public economic activity. A main argument is that cross-national differences in political and economic conditions led to very different outcomes. Looking at the average growth of government has the advantage of showing some general developments over time, but more

interesting in this context is how different countries faired with respect to public sector size.

The coefficients of variation in table 2.1 and 2.2 indicate that not only average government size increased during the period, but also its variation across countries[4], and similarly, most of this increase in variation took place until 1980 without any sign of subsequent convergence. Considering figure 2.2, the Nordic countries Sweden, Denmark, and to a lesser extent Norway and Finland stand out for their exorbitant growth of the public sector. But whereas Sweden and Denmark reached their highest levels in 1980 already, the growth was slower in Norway and Finland but continued during the eighties. Austria and Canada show a similar pattern, although not such a steep growth curve. At the other extreme are Switzerland and the United States. Both, government employment and consumption expenditure remained relatively low during the whole period for these two countries.

Figure 2.2: Government Size by Country, 1965-1994



—— Civilian Government Consumption Expenditure as a Share of GDP
– – – Civilian Government Employment as a Share of Working Age Population

Source: Cusack (for source description see table A6).

[4] For descriptive statistics of government consumption and employment for individual countries see table A2 and A3, respectively.

The United Kingdom is exceptional, in that it started with quite a high level of public employment and consumption, but whereas public employment stayed roughly constant after an increase up to the mid seventies and was actually cut down during the eighties and nineties, no sign of a general reversal of the growth of consumption expenditure is visible. Another country that shows quite a different pattern for consumption expenditure as compared to employment is Ireland. Consumption expenditure rose considerably until the early eighties and was cut back just as considerably afterwards. In contrast, government employment grew rather modestly until 1980 and was only reduced a little until the end of the period. Belgium shows a similar development, however the differing development of the two indicators is far less pronounced.

Some of the countries usually grouped under the heading of Christian Democratic welfare states are interesting for another reason. Germany, the Netherlands, and Italy show a relatively wide gap between consumption expenditure and employment. All three of them were characterized by relatively few public employees but large consumption spending. This might be a hint that Christian Democratic parties are not only supporting generous social transfer systems, but also the provision of welfare goods and services. They just differ to social democratic parties in that they do not promote state delivery of these welfare state services (Huber & Stephens, 2000: 326). The counter example to these countries is France, where government consumption and employment developed in close accord.

Overall, the short discussion should have shown that there remains enough to be explained by cross-country differences in economic and political factors. The growth of government size took very different pathways across countries. Even within familiar country groupings like the Nordic countries, figure 2.2 shows quite different developments over time. Not to mention the Anglo-American countries, for which no common pattern at all is observable. The next chapter will discuss some of the results of previous studies that have offered explanations for these differences in public sector size.

3 Previous Research

The determinants of government size and growth have long been of interest for social scientists. This chapter gives a short and necessarily selective review of empirical studies on the topic, presents their main findings and discusses some controversies. The first section describes general trends in the literature and results regarding the influence of economic and socio-demographic factors on government size. The subsequent sections deal with the political factors relevant to the research question.

3.1 Empirical Studies on Government Size

Two broad scholarly interests in the study of government size can be identified for the nineties and up to the present time. On the one hand, many studies focused on the consequences of an increasing international integration of markets for public sector size. Whether globalization results in a larger or a smaller share of government activity is one of the major current controversies in the field. The other, and admittedly more diverse, strand of research examines the effect of political institutions on government size. To a large extent, this is a reflection of the broader trend in political science to take into account the role of institutions in explaining political decisions and outcomes, also referred to as the neo-institutionalist paradigm. But also among economists, the importance of political structures in explaining public sector size is increasingly acknowledged and analyzed (see e.g. Katsimi, 1998; Persson & Tabellini, 1999). Although the possible effects of international economic integration are taken into account, the main stress in this analysis lies on the influence of these domestic political and institutional factors. Table 3 gives an overview of previous empirical studies in the field. Since the study of government size is a burgeoning area of research, the list is inevitably selective[5].

5 There were several criteria for inclusion in the table. The first condition was the use of some measure of overall public sector size as the dependent variable. Hence, studies on related topics like budget deficits or welfare spending are neglected because they refer to different research questions. Secondly, only research papers with some relation to the theoretical arguments made here were selected. They had to examine either partisan, institutional, or interest group effects on government size. With regard to institutional factors, only studies examining effects of the number of parties in government or institutional constraints on government discretion are listed. Finally, the focus lies on recent studies, mostly from the early nineties onwards. But even within these restrictive criteria, table 3 cannot claim completeness.

Table 3: .....Previous Studies on Government Size

Author(s)	Design Cases (Period)	Dependent variable(s)	Impact of politics
Cusack et. al. (1989)	Pool 13 (1963-1983)	Civilian employment	Union strength +* Left +*
Roubini & Sachs (1989)	Cross section 13 (1973-1985)	Δ Total expenditure net of capital outlays and interest payments	Left +* Type of government +*
Garrett & Lange (1991)	Cross section 15 (1968-1987)	Total expenditure Consumption Public employment Total revenue	Left labor power +*/+*/+*/+*
Blais et. al. (1993)	Pool 15 (1960-1987)	Total civilian expenditure	Left +* Minority +* Left x Minority -*
Huber et. al. (1993)	Pool 17 (1960-1988)	Total revenue	Left +* Christian Democratic +* State structure -*
De Haan & Sturm (1994)	Pool 12 (1981-1989)	Δ Total expenditure	Left +* Type of government +
Garrett (1995)	Pool 15 (1967-1990)	Total expenditure	Left labor power – Left labor power x capital mobility +* x trade +*
Blais et. al. (1996)	Pool 18 (1962/1970-1991)	Δ Total civilian central government expenditure Δ Total civilian central government expenditure net of interest payments	Left +*/+* Left x Minority +/+
Schmidt (1996)	Pool 22/23 (1960-1994)	Δ Total expenditure Δ Consumption	Left +*/+* Centre +*/+* Conservative -*/-* Institutional constraints -*/-*
Cusack (1997)	Pool 15 (1955-1989) 16 (1961-1989)	Δ Civilian current disbursements	Left +* Type of government +*
De Haan & Sturm (1997)	Pool 21 (1982-1992)	Δ Nontransfer expenditure	Left + Type of government -
Garrett (1998)	Pool 14 (1966-1990)	Total expenditure Civilian consumption	Left-labor power +/+ Left-labor power x capital mobility +*/+* x Trade +*/+

Table 3: Previous Studies on Government Size (Continued)

Author(s)	Design Cases (Period)	Dependent variable(s)	Impact of politics
Katsimi (1998)	Pool 12 (1967-1985)	Log of employment	Left -*
Huber & Stephens (2000)	Pool 16 (1963-1987)	Civilian employment Civilian nontransfer expenditure	Left +*/+* Christian Democratic -/+* Constitutional Structure -*/-*
Iversen & Cusack (2000)	Pool 15 (1961-1993)	Δ Total civilian consumption Δ Total transfers	Left +*/- Strength of labor +*/+
Garrett & Mitchell (2001)	Pool 18 (1961-1993)	Total expenditure Consumption	Left -/0 Christian Democratic -/-
Cusack & Fuchs (2002)	17 (1962-1996)	Δ Total civilian expenditure Δ Social transfers and civilian consumption	Left government x majority in Lower House +*/+* x majority in all Houses +/+ x left majority in Lower House +*/+* x left majority in all Houses +*/+*
Schmidt (2002)	Pool 21 (1960-1998)	Total expenditure	Left +* Christian Democratic +* Counter-majoritarian constraints -*

Notes: + and – denote the sign of coefficients and * its statistical significance, Δ denotes change scores.

All studies in table 3 examined only industrialized democratic countries and cover time periods between the early 1960s and the mid 1990s, probably reflecting the lack of reliable data for a wider sample. Although organizations such as the World Bank, the International Monetary Fund, and the United Nations publish economic data for countries worldwide, their quality for comparative research is often questionable and comprehensive time series for many countries are scarce. The most comprehensive and detailed comparable economic data is only available for developed democracies as offered by the OECD. Similarly and probably partly as a consequence, reliable data for many political features of countries outside the OECD area is rare.

The statistical technique of choice was usually pooled cross-section and time-series regression, the number of countries in the analysis varying between 11 and 23. Having a look at the dependent variables used to measure government size, the variety is

noteworthy. Most studies used some measure of government expenditure as a share of GDP. But within this category, there was an array of different indicators employed, ranging from central to general government and from total spending to single components of the public budget. Compared to the number of studies that draw on expenditure data, studies using government employment as the dependent variable represent a minority.

Before turning to the theories and results with respect to political variables, it is worthwhile to regard model specifications in previous research to identify other issues that should be accounted for in the analysis. Unemployment, economic development, and exposure to the international economy are the economic explanatory variables most often controlled for in previous research[6]. Together with the demographic variable old age share of population, they are included in most models of government size. Another economic variable not so often accounted for is the "relative price of public goods", a measure which reflects the supposedly higher inflation of prices for public goods and services. Several studies found it highly associated with government size (Cusack, 1997; Iversen & Cusack, 2000; Schmidt, 2002), thus its inclusion in the analysis seems promising.

3.2 Partisan Differences

There is a long-standing debate in political economy to whether party ideology actually matters with regard to government policies. This debate was refuelled by the assertion that growing economic internationalization makes distinctive left policies at least ineffective, if not impossible. According to this line of reasoning, even if party ideology had an impact on public policies in earlier times, this effect should have vanished in the eighties and nineties.

With regard to government size, the results of preceding studies are generally supportive of the partisan hypothesis. Most analyses have identified left governments as being more prone to increasing public spending or employment than conservative-liberal governments. In response to the claim that partisan impact on government size has decreased, if not disappeared over time, Cusack (1997) examined partisan effects on public expenditure for several time periods. Whereas he found a substantial decrease after the first oil crisis, the

[6] Only political variables of main interest are shown in table 3 for reasons of space.

effect of government ideology remained constant for the eighties as compared to the second half of the seventies.

Besides these confirmations of the partisan hypothesis, there are some studies that did not find a statistically significant relationship (e.g. De Haan & Sturm, 1997). Katsimi (1998) even reported an effect of left governments to decrease public sector size. But the crude operationalization of government ideology as a dummy variable put some doubt on the reliability of this result. Whereas Huber and colleagues (Huber et. al., 1993; Huber & Stephens, 2000) and Schmidt (1996) reported positive effects not only for left but also for Christian democratic governments, Garrett and Mitchell (2001) cannot corroborate either of these findings. But Garrett and Mitchell (2001: 168) note that their results are highly sensitive to the statistical properties of their model. Subsequently, their study was severely criticised on methodological grounds (see Kittel & Winner, 2002).

Noteworthy is the multitude of indicators used to measure government ideology. Most commonly, parties are classified into broad party families, and their influence is measured by the share of seats they held in cabinet or parliament. But there are several variants of this measure. For example, Blais et. al. (1993, 1996) employs the difference of cabinet seats held by right from cabinet seats held by left parties, Huber and Stephens (2000) cumulate the cabinet seats share over the whole post-war period, and Garrett (Garrett & Lange, 1991; Garrett, 1995, 1998) combines cabinet and parliament seats shares together with measures for the organizational strength of unions into one index.

Other studies use simple dummy variables (Katsimi, 1998; Cusack & Fuchs, 2002), with -1 and 1 representing left and right governments, respectively. Only Cusack (1997) and Iversen and Cusack (2000) employ a continuous ideology measure. They weight the share of cabinet seats of parties by their scores on a left-right scale, which was developed through an expert survey by Castles and Mair (1984). Although the stability of party ideology over time can be questioned, none of the studies reviewed has employed an indicator of party ideology that varies both across countries and over time. Furthermore, all of them are based on subjective judgements, be it by a number of “experts” or a single researcher. An ideology indicator that omits these problems is introduced below in section 5.3.

3.3 Political Institutions

Whereas constraining effects of political institutions and veto players are increasingly recognized as influencing factors in studies on related topics like welfare state expansion, budget deficits, economic growth, inflation, and taxation[7], the empirical evidence in the study of government size is rather scarce.

Roubini and Sachs (1989), Blais et. al. (1993, 1996), and de Haan and Sturm (1994, 1997) accounted for the constraints faced by parties in coalition and minority governments. Roubini and Sachs (1989) argued that the power dispersion in coalition and minority governments leads to increased logrolling among parties which would eventually result in a higher share of public spending in overall economic activity. Whereas they also found empirical evidence for this hypothesis in their analysis, De Haan and Sturm (1994, 1997) could not confirm such an effect on government spending. Both studies used the measure of political cohesion developed by Roubini and Sachs (1989) which takes account of different types of governments, ranging from minority governments to oversized coalitions.

Blais et. al. (1993) examined a more refined argument, arguing that minority governments should generally lead to higher government spending for the reasons outlaid above, but that this should also lead to partisan effects being less pronounced. They assessed these hypotheses empirically by including a dummy for minority governments not only as an independent variable, but also in interaction with their government ideology indicator. Whereas they found both hypotheses confirmed in their first study (Blais et. al., 1993), the effects vanished in a following re-analysis using different data and a different model specification (Blais et. al., 1996). Although an interesting methodological approach, the focus solely on minority governments is insufficient, since minority governments are only one possible source of government hindrances. A measure reflecting the degree of political cohesion like Roubini and Sachs' (1989) is clearly preferable to a simple dummy, but their measurement scale is still contestable and omits other constraining factors outside the lower house.

[7] For an overview see Ganghof (2002).

The studies of Huber and her colleagues (Huber et. al., 1993; Huber & Stephens, 2000) and Schmidt (1996, 2002) stressed the importance of the general configuration of political institutions. Their basic argument is that different institutional settings allow for a different number of veto points (Immergut, 1992) accessible for political actors in opposition to the policy proposed by the incumbent party. All studies employed an additive index incremented for bicameralism, the possibility of referenda and federalism. In addition, Huber's index took account of the regime type (incremented for presidentialism) and the election system (incremented for majoritarian)[8]. Schmidt (1996, 2002) identified European Union-membership, an autonomous central bank and a high difficulty of amending the constitution as factors of further constraints.

A problem of these measures is that they presume determinism between institutions and their alleged outcome which is not accurate in many instances. Obvious examples are majoritarian election systems. The simplified hypothesis is that they produce single party majority governments, in contrast to proportional representational election systems, which are supposed to produce minority or coalition governments. This might often be the case, but there is no causal necessity. In addition, it is doubtful whether the different institutions are conceptually equivalent to allow for a combination into one additive index. The proposed causal chains are based on different and partly contradictory assumptions and their relative importance cannot be distinguished (Ganghof, 2002: 8).

Another criticism concerns the expected relationship between institutional constraints and government size. All authors expected, and indeed found, a negative impact on public sector size. In instances where government size decreased, a negative effect of institutional hindrances means that the decrease is stronger the larger the number of veto points. But in close accordance with theory, institutional constraints should make changes proposed by governments more difficult in either direction. Such "no-change" expectations can be more appropriately modelled by interaction terms between ideology variables and institutional constraints. The calculation of conditional effects and the interpretation of the results of interaction analyses are briefly described in section 6.1.

[8] Election system is not part of the newer version of the index (see Huber & Stephens, 2000).

Overall, the previous literature dealt with political institutions and veto players in two ways. The political cohesion literature accounted for actual veto players in the lower house, disregarding other institutional features with a potential for vetoes. The institutionalist literature controlled for all institutional settings with a potential for producing veto players without regard to whether this was actually the case. An exception is the study by Cusack and Fuchs (2002), which considered party ideology in all relevant legislative chambers when examining the constraining effects on government. But their analysis was based on the rather questionable assumption that the "willingness to join a coalition means the acceptance of the dominant ideology among the parties member to the coalition" (Cusack & Fuchs, 2002: 21). In short, they treated coalition governments as single actors.

The veto players theory proposed by Tsebelis (1995, 2002) is an attempt to a unifying approach. It offers a consistent theoretical account of what constitutes veto players in different institutional settings and deduces counting rules for their operationalization in empirical analyses. In short, veto players must not only have the power to veto, but also the incentives to do so. Veto players theory is not confined to different types of government like the political cohesion approach or to a certain veto point (like bicameralism in the study of Cusack and Fuchs, 2002), but principally applicable to all possible institutional sources of veto power. On the other hand, these institutional sources for veto power constitute only veto players when the corresponding actors differ in their preferences to those held by the leading government party. Hence, instead of counting all institutional settings as veto points like the institutionalist studies, only the actual veto players constituted by these institutional settings are taken into account. The theory is described in more detail in section 4.2.

3.4 Interest Group Systems

Although veto players theory is an improvement with regard to the treatment of political institutions, there is still a blind spot in an institutionalist concept of the political process. Potentially influential actors outside formal political institutions are completely neglected. Particularly, interest associations might be of relevance here. Usually, their influence is seen as related to the degree of corporatism present in a country. Corporatism is a widely used concept and as broad are the meanings ascribed to it. Centralized or coordinated wage

bargaining, interest group participation in public policy making, political-economic consensus ("social partnership"), and centralized and concentrated interest groups are just some key terms often equated, alone or in conjunction, with corporatism (Kenworthy, 2000). Before clarifying what is meant by corporatism in the context of this paper, the treatment of the concept in previous quantitative research on government size is first discussed. The literature on the impact of corporatism on macro-economic outcomes is vast, thus it is noteworthy that only few studies examined the more direct influence of corporatist arrangements on government size, the more so since the latter relationship is often assumed to be part of the causal chain linking corporatism to macro-economic outcomes.

Cusack et. al. (1989) and Iversen and Cusack (2000) include a measure of union strength in their models of government size. The latter use this indicator simply as a control variable, without further elaboration of the causal path linking the organizational strength of unions to government expenditure. Cusack et. al. (1989: 483) introduces the variable to "capture the strategic importance of one of the potentially central actors in political-economic decision making within modern industrial societies." In their view, organizational strength is a crucial factor for achieving successful outcomes for the represented group in redistributive struggles often carried out with regard to government policies. Both studies expect a positive effect of union strength on government size, and their analyses confirm this expectation.

Cusack et. al.'s (1989) measure of union strength is simply the share of union members in total employees. Whether this is a valid indicator for organizational strength is doubtful. It has been argued that it is the concentration among and the centralization within interest organizations as well as their institutional standing granted by government within the political-economic system, that defines power of interest groups in the first place. As Schmitter (1981: 312) concluded from his analysis: "What seems to count is not whether *everyone* is getting organized for the pursuit of specialized class and sectoral self-interest but *how* they are doing so" (italics in original). The measure used by Iversen and Cusack (2000) is somewhat refined in this respect, weighting union density with the degree of union centralization.

Garrett and Lange (1991) and Garrett (1995, 1998) also argue that the organizational strength of unions is a crucial factor in explaining government size. But whereas the studies reviewed in the last paragraph expected an independent effect of union strength, Garrett and Lange (1991) reason that it is the combination of left governments and strong unions that yields the necessary power resources to pursue leftist policies effectively. Thus government size should increase in situations where a government is dominated by social-democratic or labor parties and supported by monopolistic and centralized trade unions.

A methodological shortcoming in these studies is that it is simply assumed that left governments and strong unions have a combined effect on government size over and above their individual effects. Instead of entering the partisan government indicator and the union strength variable separately into the regressions and using an interaction term to test for this conditional relationship, several indicators for both party ideology and union strength are combined into an additive index of "left-labor power" (Garrett, 1995: 637, 1998: 67). Garrett and Lange (1991) report a positive impact of the combined index of left government and union strength on government expenditure as well as on public employment. In contrast, Garrett (1995, 1998) finds only statistically significant positive effects of left-labor power in cases characterized by high financial and economic international integration. Whether the combination of left governments and strong unions or one of these factors alone drives the effects observed cannot be ascertained by the use of such a combined index.

Both approaches described in the previous paragraphs focus on properties of one particular type of interest group organization, that is trade unions. Trade unions are usually identified with preferences for more state intervention in the economy, thus expecting a positive effect of organizationally strong unions on government size is reasonable. However, powerful unions are in most countries accompanied by similarly strong employer and business associations with often opposite interests as regards government activity. If corporatism is not equated with strong trade unions, but regarded as a certain type of interest group system, its impact on government size is not so clear cut. Conflicting powerful organized interests could, as with veto players, restrict change in government policies regardless to which end. This argument is elaborated in section 4.3.

3.5 Summary

This section reviewed previous research on government size. Economic and financial integration, unemployment, economic growth, old age population, and the relative price of public goods were identified as factors to be controlled for in the statistical analysis. The discussion also pointed to some possible improvements over previous studies. Methodologically, a time-varying and objectively derived measure of government ideology should be more valid and reliable than previous measures. If constraining effects on government discretion are hypothesized, they are more appropriately modelled by interaction terms. Theoretically, veto players theory is promising in accounting for institutional constraints in a more coherent way. In addition, applying the veto player logic to powerful actors outside formal political institutions, corporatist interest groups might also constrain the discretion of government. These and other theories on government size are discussed in the next chapter.

4 Partisan Politics and Political Constraints

Numerous theories have been proposed to explain the growth and the size of the public sector, and any attempt to give a complete discussion is bound to fail. Hence this chapter focuses on the theories that are the main focus of this paper and the following empirical analysis. It discusses in some detail how political parties are supposed to leave their marks on public sector size and how their ability to do so is limited by political actors endowed with veto power and corporatist interest groups. The main arguments for each theory are stated but explicit hypotheses are not presented until the theoretical concepts have been operationalized in chapter 5. The last section will briefly describe major theories on economic and socio-demographic determinants of government size, which have been identified in the literature review.

4.1 Partisan Theory

The "parties do matter"-hypothesis states that the party composition of government is "a major determinant of variation in policy choices and policy outputs" (Schmidt, 1996: 155). It was developed by Hibbs (1977) to explain variation in macroeconomic outcomes. The basic idea is that parties are trying to get (re-)elected in order to implement policies which favor their core clientele (Hibbs, 1992). According to Hibbs (1977), lower social classes are the electorate of left parties. They often hold only human capital and occupy lower status jobs which are most affected by unemployment. The clientele of right parties, on the other hand, are upper income and occupational status groups which hold most of the financial capital. They are more concerned about inflation than unemployment.

Hence, under the proposition that there is a general trade-off between unemployment and inflation, left governments are associated with more expansionary policies resulting in low unemployment but higher inflation, whereas right governments are assumed to endorse policies to keep inflation low, even if the result is a higher unemployment rate. In short, parties act to a substantial degree "ideologically" by promoting policies that respond to the "objective interests and revealed preferences of their core constituencies" (Hibbs, 1992: 363).

Partisan theory not only applies to macroeconomic policy and outcomes. Following Hibbs' (1977) seminal article, his theory was applied to a wide variety of policy domains over the last 25 years[9]. In its general form it holds that, ceteris paribus, changes in the left-right party composition of government are related to changes in public policy (Imbeau et. al., 2001: 2). With regard to government size, left parties are associated with more expansionary fiscal policies, larger welfare effort, and with an overall larger public sector than right parties (Schmidt, 1996).Whereas left parties are seen to resort to government intervention, parties on the right are assumed to rely more on market mechanisms.

Ideology can be defined as "a set of ideas which provides a guideline for political action" (Pennings, 2002: 111). In comparative politics, the term ideology usually refers to the classic left-right dimension and this paper follows the convention. The role of government versus that of the market is the basic criterion distinguishing the left from the right (Blais et. al., 1993: 43; Pennings, 2002: 111). If it is correct that governments can change existing policies generally only at the margin and, hence, any partisan effect is small compared to the influence of non-political factors, such an effect should still be most visible with regard to public sector size.

Partisan theory is based on several propositions (see Schmidt, 2002: 168). Firstly, it assumes that distinct social groups with specific interests and preferences are forming the electorate. Although one might doubt the existence of strong class cleavages in today's affluent democracies, it is nevertheless obvious that the gains of many government policies are distributed unequally among occupational groups. If one agrees that groups are broadly aware of these differential effects, it is reasonable to assume that lower social strata prefer more government activity than higher income groups since the former often profit at the expense of the latter from such intervention. For example, government spending in welfare related areas involves a direct or indirect redistribution of real income from the "rich" to the "poor", and the same is true for the macroeconomic fiscal policies as outlaid in the first paragraph.

[9] For reviews see Blais et. al. (1993), Schmidt (1996, 2001, 2002), Imbeau et. al. (2001).

The second proposition is that these preferences of social groups are successfully fed into the political process. If one is content with the assumption that such distinct groups exist, such a link is straightforward in representational democracies. In order to win elections or at least a substantial share of seats in the legislation, parties need at least the support of their core constituency. Of course, the preferences of social groups are not directly translated into preferences of the corresponding party and in many instances the policy supported by a party will not match the policy favored by its electorate. But on average over a large number of issues, such an assumption is plausible. Parties are "multi-goal organizations" (Schmidt, 2002: 168) with policy-pursuit but also office-seeking ambitions. It is in the party's own interest to advocate policies which are desired by its clientele if it wants to reach or stay in office.

In any case, the analysis does not crucially depend on the validity of these two assumptions. Government ideology is measured directly, and the precise mechanism why parties differ in their ideological positions is of second order to the hypotheses to be tested. More controversial are the two assumptions concerning the questions whether parties in government can actually realize their preferred policies and whether these policies result in the outcomes favored.

Hibbs (1977) advanced partisan theory with the explicit goal of explaining macroeconomic outcomes like the rates of inflation and unemployment. But as Schmidt (2001: 22) points out, results of economic processes cannot be determined by government. Macroeconomic outcomes are not amenable to hierarchical steering. Although government surely has some impact on economic developments through its involvement and intervention in the economy, the effect is usually rather remote, hard to detect and hard to disentangle from other influencing factors. Direct impacts of government activity on economic results are an exception rather than the rule. One such example might be the conscious expansion of public employment by government to counteract unemployment. But even in this case, unintended consequences can reverse the result. Algan et. al. (2002) argued that public employment is "crowding out" private employment, leading to higher unemployment rates at least in the long run.

Whether government ideology directly influences macro-economic outcomes is questionable and possible effects are empirically difficult to identify. These problems are omitted in this paper by the focus on the intermediate link between government ideology and public policy, that is on the assumption that partisan governments can realize their preferred policies. Policies are more immediately and comprehensively controlled by governments than macro-economic outcomes, thereby keeping the causal chain to be investigated shorter.

But even policies are not under full control of the incumbent government. New governments in office do not start from scratch; they are confronted with elaborate policy legacies, resulting from decisions taken by numerous predecessors. Often highly institutionalized and intertwined, existing policies cannot be completely overthrown over night. The economic environment also plays a major role in the capability of governments to pursue their favorite policies. For example, low economic growth and high international economic vulnerability can be expected to decrease the scope for partisan policies (Schmidt, 2001: 26). Furthermore, whether a government party can accomplish its preferred policy depends on political factors. In coalition governments, policy proposals are the result of compromises among incumbent parties and whether a policy is enacted depends on constitutional veto possibilities for actors opposing it. Moreover, the formulation and implementation of policies might be enhanced or obstructed by powerful societal interest organizations.

Given the many restrictions on government discretion, the impact of party ideology on aggregate government size is likely to be modest. The more interesting is the identification of political-structural constellations that enhance or decrease government's capacity to implement partisan policies. The next sections explore how veto players and corporatist interest groups are supposed to mediate this relationship between government ideology and public sector size.

4.2 Veto Players Theory

Partisan theory was originally developed in the context of a majoritarian democracy with a two-party system (Schmidt, 2001: 27). The underlying picture was a single-party

government with a powerless opposition and no constitutional veto players. In such a situation partisan influences should become apparent. In the case of non-majoritarian democracies, the causal chain between the ideological orientation of government and policy outputs might be less obvious (Schmidt, 2001). For example, in the case of coalition governments the leading government party has a lower potential for policy change in line with its partisan preferences because it has to engage in bargaining and to strike compromises with the other parties in the coalition (Blais et. al., 1993). In systems with two legislative chambers the same holds if the Upper House is controlled by the opposition (Tsebelis, 1999). In this case bargaining might not be the dominant interaction modus but the government will anticipate the position of the opposition and formulate its policy proposal accordingly in order to reach the approval of the second chamber.

Hence, policy outputs are often compromises between coalition partners or between the government and its "co-governing" opposition (Schmidt, 2001). In these situations, the effect of partisan ideology on public policy will be less visible. Without taking institutional structures and veto players into account, the smaller differences in policies are credited solely to apparently smaller ideological differences of governing parties (Schmidt, 2001). Political institutions and veto players are an important variable potentially conditioning the effect of partisan governments on policies.

In general, different institutional configurations yield a varying number of veto points which provide opportunities "for blocking or challenging government policy decisions" (Immergut, 1992: 32). Formal institutions like constitutions and laws ascribe roles and rights to political actors and, especially of interest for this study, they inhibit some actors with the power to veto policy proposals of the government. In some cases veto power is a direct cause of formal norms like in the case of bicameralist systems, in other cases it is rather a remote and not deterministic consequence of institutional settings, e.g. majoritarian election systems often lead to single-party governments and election systems with proportional representation often result in coalition governments. In both situations it is more precise to regard the actual veto players than the institutional settings to describe the constraints imposed on partisan governments. Bicameralism is only a hindrance for partisan policy if the Upper House is controlled by the opposition and the election system tends to, but does not necessarily have to, lead to different government types.

Tsebelis (1995, 2002) offers a consistent theoretical framework for such an analysis through his veto players theory. He defines a veto player as "an individual or collective actor whose agreement … is required for a change in policy" (Tsebelis, 1995: 301). This leads to the question of how to identify these veto players in a certain political system. Tsebelis (2002: 79) distinguishes between two types of veto players, institutional and partisan veto players. The former are specified by the constitution of a state by demanding that certain individual or collective actors have to approve a change in policy. Besides parliament, this could for example be the president or a strong upper chamber, depending on the structure of the political system.

Partisan veto players are generated by the political game within certain institutional veto players. Some institutional veto players, such as parliament, consist of several individual or collective actors themselves. If differing majorities within the legislature are possible, this institutional veto player cannot be reduced further. But if parliament is controlled by one or a coalition of cohesive parties, the institutional veto player can be disaggregated into these partisan veto players.

Finally, the "absorption rule" (Tsebelis, 2002: 28) is applied. Any actor with veto power whose preference is the same as the preference of another veto player or whose preference lies between the preferences of other veto players is discarded, since he sets no further constraints on policy change. In graphical terms, and more precisely, his indifference curve is completely absorbed by the indifference curve of at least one other veto player.

The focus on actual veto players, which are identified by taking their preferences into account, allows for the identification of political institutions and their consequences on political decision making in a consistent way across countries (see Tsebelis, 2002: 1-6). The neat and meaningful distinction of political systems according to traditional classifications, like presidentialism vs. parliamentarism, uni- vs. bicameralism, or two- vs. multiparty systems, is lost when two or more of these categories are considered simultaneously. Moreover, expectations about the interacting effects of combinations of different regimes, legislative institutions, and party systems on policies are hard to establish.

The steps in the identification of veto players suggested part of the theoretical argument already. In short, the propensity for significant policy change is seen as a function of the number of veto players, their cohesiveness, and preferences. The predictions are that, ceteris paribus, the larger the number of veto players, their internal cohesiveness[10], and the distance on policy positions between them, the more stable policy will be (Tsebelis, 2002: 2). Whereas these propositions are derived independent of the position of the status quo (Tsebelis, 2002: 23), the location of the status quo is itself another crucial factor in determining policy stability. The status quo can be conceived of as the cumulated result of policy decisions taken in the past. The closer the status quo is located to the constellation of veto players, the more stable policies will be (Tsebelis, 2002: 22-23). Indeed, if veto players' preferred policy positions are located around the status quo, change will be impossible, since any change would result in a less preferred policy for at least one of them.

Only the proposition about the number of veto players will be tested in this analysis. The status quo in a certain policy area is hard to identify empirically (see Tsebelis, 2002: 23). The same argument applies to the degree of cohesiveness of collective actors and multidimensional preferences[11]. Entering this terrain is beyond the scope of this paper. In cases where preferences are supposed to be uni-dimensional, using the range of ideology between the most extreme veto players would be theoretically more appropriate than using the number of veto players[12]. But since public sector size is likely to be a multidimensional phenomenon, the number of veto players is a better approximation for constraints than their distance among a single dimension like the left-right scale[13].

Although ideology is likely and actually hypothesized to be a major determinant of public sector size, it is surely not the only policy dimension that is influential. Furthermore, a larger number of veto players is likely to increase transaction costs in reaching an agreement, also increasing the difficulties for policy change (Tsebelis, 2002: 29). Finally,

[10] Only in the case of simple majority decisions, if qualified majorities are required, Tsebelis (2002: 51-55) predicts a decreasing effect of cohesiveness on policy stability.

[11] For a two-dimensional analysis of budget structure see Tsebelis and Chang (2001).

[12] For an analysis using the range of ideology see Tsebelis (1999).

[13] Tsebelis (2002: 191) made this argument with regard to budget deficits.

as Ganghof (2002) points out, the proposition of veto players as pure policy seekers might be too simplifying. Vote- and office-seeking ambitions of parties can be further hindrances for reaching an agreement. These sources of constraints are reflected by the number of veto players but not by their ideological distance.

Some aspects of Tsebelis' approach to identify the number of veto players can be criticized. In parliamentary systems, he counts all parties forming the government as veto players. In cases of single-party-majority or minimum-winning-coalition governments, this seems straightforward. A single party government, holding a majority in parliament, does not face any resistance in putting through its policies. In minimum-winning-coalitions, all parties of the coalition have to agree to pass legislation in parliament. Not so clear is the case for minority governments or oversized coalitions. Minority governments simply do not have a majority in parliament, and in oversized coalitions not all parties of the coalition are needed to agree on policy since respective legislation can principally be passed in parliament with a subset of the coalition's vote.

Tsebelis (2002: 93) general argument is that "every government *as long as it is in power* is able to impose its will on parliament" (italics in original), because it can combine a vote on a bill with the question of confidence. With regard to oversized coalitions, an additional reasoning is that a government party consistently bypassed by its coalition partners will depart from government (Tsebelis, 2002: 95). Concerning minority governments, he argues that the parties forming the minority government are usually centrally located in the policy space and can, through their agenda setting power, choose among differing majorities in parliament to have their bills approved (Tsebelis, 2002: 97).

Although plausible, some of these arguments are open to discussion. Tsebelis' treatment of minority governments is simply not consistent with his basic theoretical counting rules. The parties in minority governments do not have a stable majority at their proposal, which is used as a criterion to identify partisan veto players within constitutional veto players. The same problem regards oversized governments. Since not all government parties' approval is needed to pass legislation in parliament, not all of those parties are necessary for a stable majority. In addition, whether parties repeatedly passed over in oversized

coalitions really leave government and whether minority governments are really located in the center of the policy space remains an empirical question[14].

Despite these possible shortcomings, the advantages of veto players theory as outlined earlier warrant an empirical examination. As Tsebelis (2002: 32) notes, his theory states just necessary but not sufficient conditions for a significant change in policy. Situations with a small number of veto players do not imply that large changes in policy actually take place, they just allow for their possibility. In order to be able to investigate what substantive differences veto players make with regard to policy output, the number of veto players must be combined with some indicator for the willingness of actors to change policy. Ideology of the leading government party serves as such a measure in this analysis. In accordance with veto players theory, the effect of ideology on public sector size should be smaller the larger the number of veto players.

4.3 Corporatism

The growing concern for institutional features of political systems in quantitative comparative studies results in a closer approximation of the political process. But such studies are still based on an ideal-typical view of democratic politics in which policies are formulated, decided and enacted solely in ways prescribed by the constitution and through actors who are constitutionally legitimated for that purpose. This stands in marked contrast to many empirical case studies which found substantial influence of interest organizations in the policy process (e.g. Schneider, 1986; Lauman & Knoke, 1989; Pappi, 1990). According to this view, policy outputs cannot be explained by a narrow focus on political actors and formal political institutions only. The analytic frame must be widened to encompass societal organizations as well, which often play a major role in the design and implementation of policies.

The extent to which such special interests influence policy formation varies and cannot be determined a priori. Schmitter (1979a) argues that the degree of influence of interest groups varies with structural features of the interest group system. He differentiates between two ideal-typical "modes of interest intermediation" (Schmitter, 1979b: 64): the

[14] For dissenting empirical examples see Ganghof (2002).

corporatist on the one side and the pluralist on the other (Schmitter, 1979a:13-16). Pluralist systems are composed of an unspecified number of multiple, overlapping, non-hierarchically ordered interest organizations with voluntary membership, who compete for influence in policy formation. Schmitter (1979a: 13) contrasts the pluralist conception with his view of corporatist systems, which consist of a limited number of monopolistic, hierarchically ordered interest organizations with compulsory membership and functionally differentiated interest categories. Additionally, these organizations are defined as recognized by the state and granted a representational monopoly in exchange for certain controls on leadership selection or interest articulation. Whereas the last point refers to the relations between the state and interest associations, it is clear that Schmitter's (1979a) definitions focus heavily on the structural characteristics of the interest group system and of the organizations therein.

Lehmbruch (1979), on the other hand, stresses the relations between interest group organizations and the state in his definition of corporatism. For him (Lehmbruch, 1979: 150) corporatism is a "… pattern of policy formation in which large interest organizations cooperate with each other and with public authorities not only in the articulation (or even 'interest intermediation') of interests, but … in the 'authoritative allocation of values' and in the implementation of such policies" (brackets and quotation marks in original). It is not simply a mode of interest intermediation but a mode of policy formation (Lehmbruch, 1984). Interest associations in corporatist systems do not just pressure state institutions for the consideration of their interests, but participate actively in the formulation and share responsibility for the implementation of policies. In its strongest form this eventually results in policy concertation on the system-level.

To sum up, the concept of corporatism consists of two main dimensions (Schmitter, 1982; Lijpart & Crepaz, 1991; Lijpart, 1999): A vertical dimension describing organizational features of the interest group system and a horizontal dimension reflecting relations between the state and interest associations. It is apparent what dimension of corporatism is most relevant for the research question. Policy concertation involves bargaining between the government and societal actors, and the resulting policies are compromises between different interests.

However, empirically the two dimensions of corporatism can hardly be distinguished. According to Lijphart (Lijpart & Crepaz, 1991: 236; Lijpart, 1999: 171), they can even be regarded as a single phenomenon. Schmitter (1981: 296) speaks of "a strong element of historical causality, between the corporatization of interest intermediation and the emergence of "concerted" forms of policymaking" (quotation marks in original). Corporatist policy making on the macro-level usually involves peak employer associations, trade union confederations, and government. The interaction between these actors can be described as a form of "generalized political exchange" across policy sectors (Lehmbruch, 1984: 67). Unions and business associations get a say in general socio-economic policy making by the state in exchange for cooperation and support in areas over which the government has no or only little direct control, the classic example being wage setting. Only unified and centralized interest associations with considerable organizational resources and control over their membership can offer such assets. Without this ability of interest organizations, government has no incentives to share its policy making authority. Thus, centralized and concentrated interest associations seem to be a necessary condition at least for an enduring policy concertation, and might even be sufficient to assure a certain minimum degree of participation in government policy decisions.

What effect do these structural settings have on government size? Often it is argued that corporatist arrangements allow for a more coordinated and encompassing economic policy. Bernauer and Achini (2000: 246) point out that this enhanced steering capability of the economy does logically lead to neither a decrease nor an increase of government size. The hypothesis examined here is that corporatist interest groups have a similar effect in the policy making process as veto players. They should make changes in policies more difficult regardless in which direction.

Corporatist relations are likely to "result in much inflexibility and immobilism" due to higher transaction costs in terms of time and organization (Lehner, 1987: 65). Looking at properties of the major actors involved, further hindrances to policy change besides transaction costs can be identified. Regarding policy preferences of actors, unions usually favor more government intervention in the economy whereas business associations are in support of a free play for the market. Traxler et. al. (2001: 40) report that domain definitions of peak unions most often refer to socialist or social-democratic ideals.

Although open political or ideological allegiances are rare in domain specifications among business and employer organizations (Traxler et. al., 2001: 50), it would be surprising if they favored leftist policies restricting the discretion of their membership.

The policy stance of the government is assumed to be somewhere between these poles, since it has to appeal to a larger share of the population for re-election, while interest organizations represent specific groups with more narrowly defined interests. This does not mean that government cannot be closer in its ideological position to one or the other group. But regardless of the ideological orientation of government, the results of corporatist bargaining are compromises between all three actors. For example, even if a left government is supported by a trade union with similar policy preferences, the necessary agreement of the business association will inhibit large changes towards more leftist policies.

A crucial assumption in this line of reasoning is that both types of interest organizations have a similar position in corporatist settings. That is, neither of them can be sidestepped by government or only at considerable costs. The theory of social-democratic corporatism makes a different point. According to this approach, it is the cooperation or "quiescence" (Cameron, 1984) of organized labor which is crucial in reaching favorable macro-economic outcomes. Union support is more likely to be granted to left governments, since they are supposed to act as guarantors for the translation of labor self-regulation into economic gains for workers in the medium term (Garrett & Lange, 1991: 798). In turn, these economic gains for workers are mainly realized by social-democratic governments through more state involvement in the economy. For example, Garrett (1998) argues that left governments counteract dislocations brought about by globalization with a larger public sector, when their backing by organizationally strong unions allows for the effectiveness of leftist policies.

Since indicators of union strength and tripartite corporatism do hardly distinguish both concepts empirically (Cameron, 1984: 168), social-democratic corporatism poses a strong alternative hypothesis regarding the interacting effect of corporatism and government ideology on government size. Tripartite corporatism can be reasonably hypothesized to decrease the impact of government ideology on government size, the opposing interests of

organized labor and business making large deviations from the status quo very difficult regardless of the policy preferred by government. According to social-democratic corporatism theory, trade unions occupy a privileged position in the interest group system and are most likely to cooperate with governments of a similar ideological stance. From this perspective, corporatist settings should increase the impact of ideology on government size, mainly by allowing left governments to pursue their favored policies.

4.4 Economic and Socio-Demographic Theories

The size of government is a truly interdisciplinary research field. Political and administrative scientists, economists, and sociologists working in diverse research areas as international relations, comparative political economy, fiscal policy and welfare state research, to name but a few, contribute to the literature on the topic. A wide variety of theories followed from this activity[15]. The sheer number of hypotheses proposed makes the consideration of all of them in a statistical analysis impractical, even where this is technically possible through a large number of observations. Thus, besides the major theories of concern described in the last section, only those theories which proved to be powerful predictors of government size in previous empirical research are taken into account. As identified in section 3.1, these factors include international economic and financial integration of markets, unbalanced productivity growth between public and private sectors, economic development, old age population, and unemployment.

During the last decade, a major debate has evolved around the impact of globalization on government size[16]. The discussion centers around two competing hypotheses, the efficiency hypothesis and the compensation hypothesis (see Garrett & Mitchell, 2001: 149-153). The efficiency hypothesis states that government involvement and intervention in the economy is disadvantageous for the competition of national economies in international markets. According to this view, governments in an ever more integrated and competitive international economy "… have no choice but to bow to the demands of the market …" (Garrett & Mitchell, 2001: 151), regardless of their ideological stance. The supposed result is a decrease in public sector size. The compensation hypothesis argues that the incentives

[15] For reviews see Lybeck (1988) and Holsey and Borcherding (1997).

[16] For example, Garrett (1995, 1998), Quinn (1997), Rodrik (1998), Bernauer and Achini (2000), for a review see Schulze and Ursprung (1999).

for government economic activity are rather increasing due to public pressures to counteract the economic insecurities brought about by globalization. Government compensation of market-generated inequality and insecurity should lead to an increase in government size. Both hypotheses are theoretically plausible and different studies found empirical support for one or the other. To solve this puzzle is not the aim of the paper. Since the common denominator of these studies is that globalization has an impact on government size, variables controlling for such an effect will be included in the analysis.

According to Baumol (1967), the unbalanced productivity growth between the private and public sector explains the growth of the latter. The "technological structure" (Baumol, 1967: 415) of activities in the public sector entails forces which lead almost unavoidably to increases in the real costs of supplying them. Productivity rises are likely to be small in the labor intensive public sector compared to progressive private manufacturing sectors (Holsey & Borcherding, 1997). But wages inhibit the tendency to converge across sectors, leading to an increase of the relative costs of production in the public sector. Since public services are hardly cut down more resources have to be invested into the public sector to secure their provision, leading to an automatic increase in government spending (Cusack & Garrett, 1992). Note that this applies not just to public expenditure but also to employment. Assuming smaller productivity increases in the public sector and a price inelastic or income elastic demand for public goods, more and more of the labor force will be transferred to the public sector in order to maintain its output level relative to the output of private sectors (Baumol, 1967).

Probably the first proponent of a coherent theory of government growth was Adolph Wagner more than a hundred years ago. There are two main interpretations of Wagner's law of expanding state activity (Lybeck, 1988). According to the first, public sector expansion is due to the restructuring of society during industrialization (Katsimi, 1998). Tasks traditionally located within the family were more and more transferred to the state which led to increased government activity in fields like welfare, health and education. Although this development was probably largely completed by the beginning of the period under study, a remote consequence should be an expansion of existing welfare and health systems brought about by an ageing society. The second interpretation associates economic development with government growth. This hypothesis is based on the assumption that

"goods and services traditionally produced by the government have a high income elasticity of demand" (De Haan & Sturm, 1994: 167). The more affluent countries are the more publicly produced goods are demanded by their citizens, which should also lead to a larger government.

Higher unemployment is also often associated with government growth (e.g. Blais et. al., 1993, 1996; Huber et. al., 1993; Schmidt, 1996). Although its effect is probably not as strong on consumption expenditure as on transfer spending, there are also higher costs involved for "administrating" the unemployed, active labor market policies, and the increased use of supplementary entitlement programs. Similarly, higher unemployment is often counteracted by government through an increase in public employment.

5 Data, Operationalization, and Hypotheses

The theories introduced in the last chapter are empirically tested through a pooled time-series cross-section regression. TSCS designs have the advantage of taking into account variation within as well as across countries (Hicks, 1994: 169). Furthermore, the increased number of observations through pooling time-series across countries allows for the inclusion of a wide variety of control variables and more sophisticated relationships to be tested. But it also has some shortcomings and pitfalls, which are discussed in more detail in chapter 6. This chapter deals with an equally important aspect of quantitative research, the sample selection, the operationalization of theoretical concepts, and the derivation of empirically testable hypotheses. The first section briefly discusses the sample, the rationale for deriving it, and the data sources in general. The subsequent sections describe the variables used to measure theoretical concepts and state the main hypotheses.

5.1 Data Sources and Sample Selection

A major problem for quantitative comparative studies is the lack of adequate data. Statistics are often simply not available for many concepts of interest and the collection capacity of the researcher is limited by the lack of resources. For most of their interesting variables, analysts have to rely on data collected by other researchers or by international organizations. Political variables collected by other researchers are sometimes close indicators of the underlying concepts, but in some instances they are rather impressionistic, casting doubt on their reliability. Similarly, economic statistics as provided by international organizations are rather second-best choices in the absence of any feasible alternative. Even where they are more than just crude proxies for theoretical concepts, their insufficient documentation does often not allow for the identification of structural breaks in time-series brought about by changes in measurement definitions and other measurement problems. Given the limited resources, this study has to rely on such data, despite its obvious limitations. Most variables were taken from datasets kindly provided on the World Wide Web by several authors[17]. The data source for each variable is described in the section on its operationalization below and more precisely in tables A5 and A6 in the appendix.

[17] Some effort was made to collect economic indicators directly from publications of international organizations, but electronic versions rarely cover the time before 1970 and to assemble the data from numerous print publications was not feasible facing the time constraints for this study.

Overall, the data set covers 16 OECD countries over a period of 30 years (1965-1994). The countries included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and the United States. The main aim in selecting the sample was to cover as many countries and as long a time period as possible. Hence, the sample selection was completely determined by data availability for the dependent and the main independent variables. The most comprehensive time-varying corporatism indicator publicly available covers 18 countries from 1960 to 1994[18]. The ideology indicator was not available for Japan, reducing the sample to 17 countries. A comprehensive dataset for government employment is offered by Thomas Cusack. Although it principally covers all countries, data for New Zealand is limited to a much shorter time period, decreasing the sample to 16 countries.

Furthermore, complete public employment data for all remaining countries is limited to the period from 1962 to 1994. The two earliest years of this period were lost through the calculation of the change scores for the dependent and the lagged dependent variables. Finally, the calculation of the autocorrelation coefficient for the residuals resulted in a loss of another year, setting the beginning of the period analyzed to 1965. Although public consumption data is available for a slightly longer time period, it was decided to use the same sample to allow for the comparability of results. Regarding the selection procedure, it is obvious that the sample is everything but a random realization of some larger population. As a result, all conclusions reached through the analysis are principally bound to the countries and the time period examined. But the focus on stable democratic and especially similarly developed countries has also an advantage in that it controls for numerous factors that could influence the dependent variable in a more heterogeneous sample of countries.

5.2 Dependent Variables

As noted earlier, two variables are employed as measures of government size, civilian government consumption expenditure as a share of GDP, and civilian general government

[18] For reviews of corporatism indicators see Lijpart and Crepaz (1991), Siaroff (1999), and Kenworthy (2000).

employment in percent of working age population. Both measures are taken from datasets provided by Thomas Cusack on his website. His primary source for government statistics were OECD National Accounts. Data for military spending and employment were derived from yearbooks of the Stockholm International Peace Research Institute and from several issues of "The Military Balance" published by the International Institute for Strategic Studies in London, respectively[19]. Validity and reliability problems regarding government statistics were already discussed in section 2.2. They related to government statistics as such, that is to the numerator of the overall measure for government size. However, government consumption expenditure is measured in percent of GDP and employment in percent of working age population. The goal of these ratio measures is to standardize the size of the government sector across countries to allow for international comparisons. But they raise some additional issues to be discussed.

With regard to consumption expenditure, a conceptual problem is that GDP only reflects measured and not total economic output. It understates economic activity by neglecting household and underground activities and hence, systematically overstates the size of government relative to the economy (Anderson & van den Berg, 1998: 172). As Anderson and van den Berg (1998: 174) note, this leads to biased results in ordinary least squares (OLS) regressions, with the size of the bias depending on the size of the mean of the measurement error, and whether and how strongly this measurement error is related to any independent variables. Though obviously a serious problem, there is no feasible solution other than noting that the results of the analysis may suffer from such a distortion. Government employment is less likely to suffer from such a bias since population figures are more amenable to accurate measurement.

Another problem that principally affects both independent variables is that the overall figure not only grows if government consumption or employment grows, but also if their denominator just decreases without any real change in consumption or employment (Castles, 2001: 204). This is especially a problem if the denominator exhibits short term fluctuations to which government size cannot respond timely. The result is an unduly over- or underestimation of public sector size. Here again, the government consumption variable

[19] For a description see Cusack (1991).

is more likely to be influenced by this effect since GDP is highly susceptible to short-term economic developments. In contrast, population growth rates are changing rather slowly, and if public employment does not react to these long run developments, it has to be interpreted as a change in government size that makes a difference in reality. The safest way to account for changes in the denominator is to include it as a control variable in the analysis. Although the government employment indicator should be less influenced by changes in its denominator, working age population is also included as an independent variable in the models on government employment to keep the analyses comparable.

Finally, whereas applying GDP to standardize government expenditure data is relatively uncontroversial, several studies use total employment as the denominator for public employment. Thus employing working age population for standardizing government employment needs some justification. Cusack et. al. (1989: 473) give two reasons: Firstly, private employment is more responsive to economic fluctuations than public employment. Decreases in private employment would lead to an automatic increase of the overall ratio measure although government employment was stable or just decreased at a lower rate than private employment. This could be interpreted as government playing a counter-cyclical role, although it did nothing different to what it did before (Cusack et. al., 1989: 473). In effect, the advantage of the public employment measure over the expenditure measure with regard to short term fluctuations, as described above, would largely be lost. Secondly, it allows for observing whether a larger part of the working age population is drawn into public employment during times of high unemployment. The potential causal link between unemployment and public employment can be discerned more unambiguously by using working age population as the denominator.

Both dependent variables (GOV) enter the analysis as yearly percentage changes. This has several statistical advantages over using level variables in the analysis (see Kittel & Winner, 2002), as is described in the following chapter. Furthermore, the public sector developed in a long historical process for which comprehensive data is to a large extent missing, which makes a quantitative explanation of overall government size unfeasible. Since any dataset is necessarily truncated, a possibility is to use a lagged dependent variable on the right hand side of the regression equation to account for a previous level of government size for which information is available. But conceptually this alters the

analysis implicitly from one of overall levels to one of changes with respect to the earlier levels. Thus, there is not really any alternative to analyzing changes in the quantitative study of public sector size.

5.3 Government Ideology

Previous studies on the size of government used a variety of measures for government ideology. Some used a dichotomous variable, classifying each government either as left or as right, depending on which party group had a majority of cabinet posts (e.g. Katsimi, 1998). Others developed several categories for different party families, not only distinguishing left and right parties but also centrist and especially Christian Democratic parties. The cabinet seats share of the respective party family is usually used then as an indicator of how much power each party group holds in government (e.g. Schmidt, 1996). Yet others developed an ordinal measure, according to the standing of party families in government, ranging from left to right dominance (e.g. Cusack et. al., 1989).

All these measures have a basic shortcoming. Since party ideology is a continuous dimension, such classifications are quite a distortion of reality and likely subject to significant measurement error (Kim & Fording, 2002). Differences in ideology between parties of the same party group are not taken into account, neither within nor across countries. According to these schemes, the American Democrats are just as "left" as the German post-communist Party of Democratic Socialism, and within Germany, there is no difference between the latter and the Social Democrats.

Some indicators of government ideology overcome this deficiency. Cusack's (1997) "political center of gravity", for example, is based on a continuous measure of party ideology developed by Castles and Mair (1984) through an expert survey. The ideology scores of parties in government are weighted by their share of cabinet seats, which results in an indicator for the ideological position of government as a whole, varying on a continuous range from far left to far right. While such an indicator should be more valid, and it is possible to construct it without much difficulty in practice, most previous studies relied on classifications of party families for measuring government ideology.

Although a continuous measure like Cusack's (1997) political center of gravity is an improvement, there are two more weaknesses it has in common with party classifications. Firstly, ideology is assumed to be constant over time. Secondly, the ideology scores or classifications are based on subjective judgments by experts or even single researchers. Recently published data of the Manifesto Research Group (Budge et. al., 2001) solves both of these problems. Based on content analysis of election programs of parties over the post-World War II period for most industrialized democratic countries, they developed a left-right scale that varies not only across countries but also over time (see Budge & Klingemann, 2001). The quantitative content analysis has the advantage that ideology scores are derived in a way which is inter-subjectively replicable. Besides this increased reliability, ideological scores derived from election programs might also be more valid than scores derived on the basis of other people's perceptions. As Budge and Bara (2001: 12) formulated it:

> *"Whereas the Manifesto data clearly constitute preferences or intentions of the party, and thus qualify as explanations or trackers of subsequent party behaviour (in government for example), perceptions and judgments about policy stands are often based on that behaviour itself so it is unclear how they can serve as explanations of it without tautology."* (brackets in original).

The Manifesto Research Group coded every statement (quasi-sentence) in an election program into one out of 54 policy categories. Based on theoretical reasoning and validation through factor analysis, they identified 26 categories as related to the left-right dimension, 13 items for left and right policies, respectively. To arrive at a left-right scale, the percentage of left statements is subtracted from the percentage of right statements[20].

A problem of the Manifesto ideology indicator is that it is quite likely to overestimate the variation in ideology scores over time. As a result of how the left-right scale is calculated, party positions change as matters that do not directly relate to the scale get more or less pronounced in the manifesto. Even if the relation of absolute right to left statements does not change, the ideology score changes if non-ideological issues gain or lose on

[20] For the items employed and the calculation procedure see table A4; for a more detailed description see Budge & Klingemann (2001: 21-24).

prominence in the election program. Since ideology is a rather slowly changing phenomenon, a moving average of left-right scores might be a better indicator for the true underlying policy position, smoothing out election-specific influences that unduly distort the scale.

The measure for government ideology employed here is based on the three election moving average of party left-right scores centered on the current election. An ideology measure for overall government, as for example the sum of ideology scores of coalition parties weighted by their share of cabinet seats, is not advisable here. Theoretically, the analysis starts from the hypothetical proposition that the leading government party can translate its preferences directly into government policies and aims at identifying how far this ability is constrained by veto players such as other parties in a coalition government. In a measure of overall government ideology, which is calculated by averaging the ideology scores of all coalition parties, part of the information on partisan veto players is already included. Thus, the actual indicator for government ideology (IDEOLOGY) is the moving average left-right score for the party holding the position of prime minister.

The measure is derived from the data set on "Parties in Parliament and Government, 1950-1995" compiled by Michael McDonald and Silvia Mendes[21]. They combined ideology scores of parties from the Manifesto Research Group data with a variety of electoral and governmental indicators. The scale of the variable was reversed for the analysis, high values indicating left governments and low values representing right governments. Given that left governments are expected to increase government size, this should show up now in a positive relationship. The corresponding hypothesis is as follows:

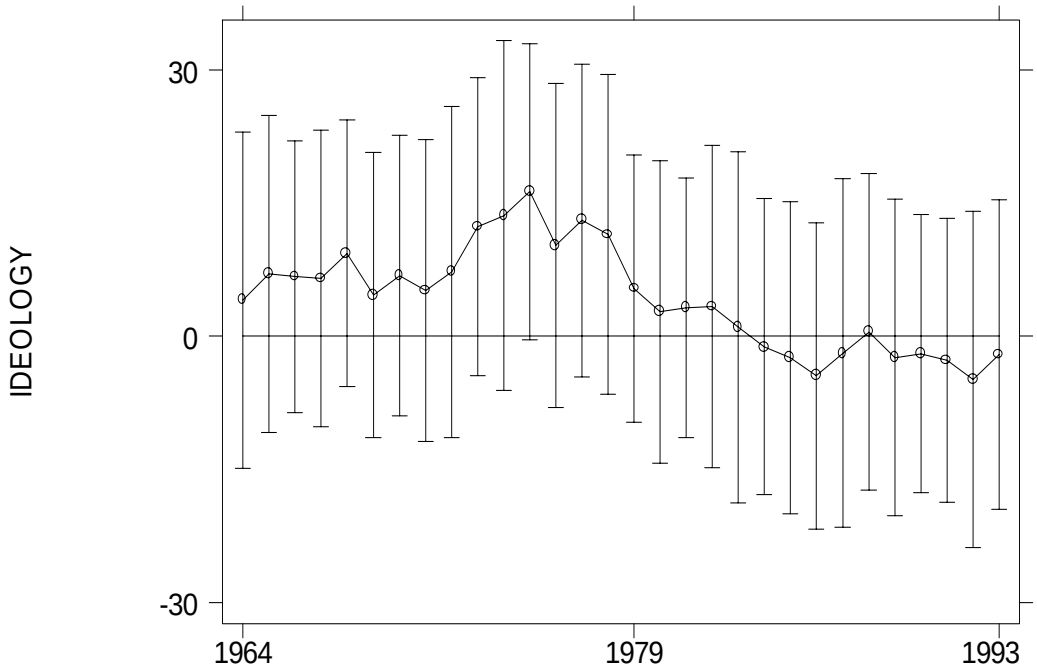
H_1: IDEOLOGY is positively correlated with GOV.

Figures 5.1 and 5.2 give an impression about the variation in government ideology over time and within individual countries. After a heyday of left governance in the mid seventies, average government ideology in figure 5.1 shows a strong trend towards more

[21] The data of McDonald and Mendes was ordered by nation-government-election. It had to be rearranged to nation-years to be usable in the analysis. If there were several governments in a certain year, left-right scores were weighted by days for the duration of each government. Finally, a variable of the ideology score for the leading government party was calculated from the variables indicating the party that held the position of prime minister and the party's ideological position, respectively.

rightist governments for the rest of the period studied. Since the early eighties, average government ideology stayed almost consistently on the right side of the ideological divide[22].

Figure 5.1: Average Government Ideology over Time, 1964-1993

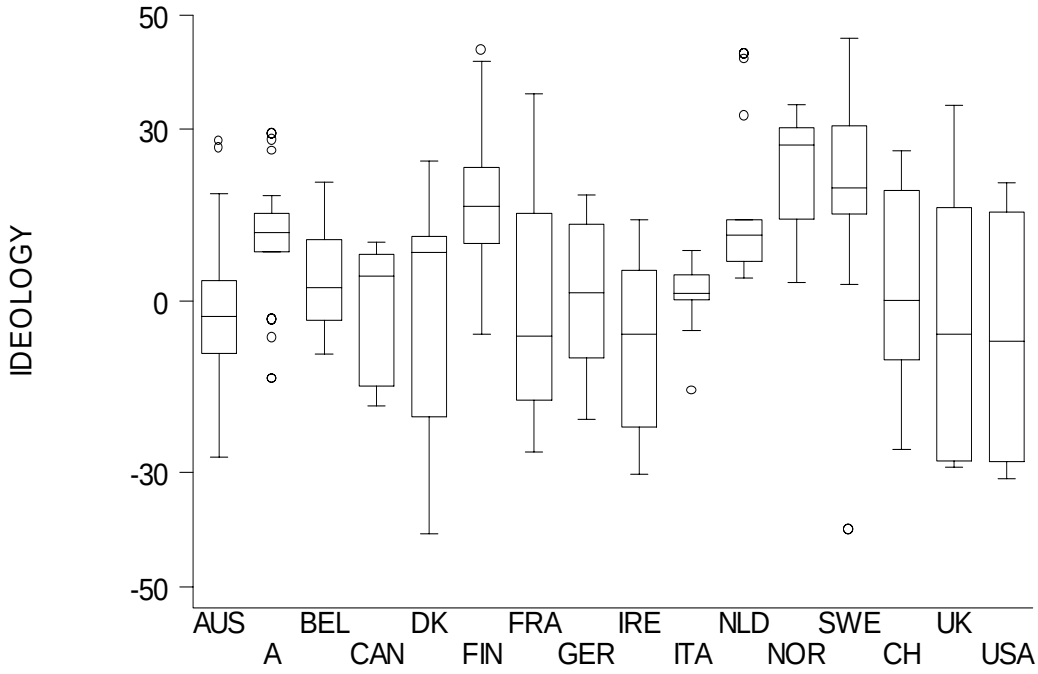


Source: McDonald (for source description see table A6).
Notes: Figure shows yearly averages and standard deviations for 16 countries (for country list see table A1); ideology is the three election moving average of the right-left scale (for its derivation see table A4; Budge & Klingemann, 2001) for the leading government party; high scores indicate left parties.

Figure 5.2 shows the variation in government ideology by country. The three Scandinavian countries, Sweden, Finland, and Norway, stand out for their generally left-leaning governments over the period. The other countries do not reveal any pattern, except that government ideology varied considerably within countries over time. Notable exceptions are Italy, the Netherlands, and Austria, whose ideology score was relatively stable.

[22] For a graphical representation of the dynamics in government ideology over time for individual countries see figure A1.

Figure 5.2: Variation in Government Ideology by Country, 1964-1993



Source: McDonald (for source description see table A6).
Notes: For country codes see table A1; ideology is the three election moving average of the right-left scale (for its derivation see table A4; Budge & Klingemann, 2001) for the leading government party; high scores indicate left parties.

5.4 The Number of Veto Players

Data for the veto player index (VETO PLAYERS) was taken from data sets compiled by George Tsebelis. The indicator varies not only between countries as most institutional constraints indices but principally also within countries over time. The theoretical procedure for identifying veto players was described already in section 4.2. What follows is a description of its practical realization.

Institutional veto players in democratic countries are legislative chambers and head of states if they are endowed with veto powers (Tsebelis, 1999: 593). In systems where no stable majority exists in legislative chambers, like in the United States, these institutional veto players cannot be disaggregated further. Nevertheless, Tsebelis (2002: 38-63) argues that even collective veto players which are internally not cohesive can be approximately treated as behaving similar to individual veto players. For the United States, this means

that beside the president as an individual institutional veto player, the Senate and the Congress are counted as collective institutional veto players each[23].

Besides the president of the United States, Tsebelis (1999: 593) identifies only the heads of state in Portugal and France as institutional veto players. Like the American president, the Portuguese president has veto power over legislation in general whereas the president of France can only veto government decrees. Since Portugal is not part of the sample, only the French president is relevant for this analysis. Tsebelis (1999: 594) counts him as an additional veto player if he is supported by a different majority than government.

In parliamentarian systems parties are usually highly disciplined and stable majorities exist in the lower chamber. Thus, parliaments as institutional veto players can be divided into the partisan veto players forming a stable majority. These partisan veto players are the parties in government. If the approval of a second chamber is necessary to pass legislation and the government coalition does not have a majority in the upper house, it is regarded as an additional veto player. Tsebelis (1999: 593) identifies only the German Bundesrat as being endowed with veto powers and not being controlled by government parties at times. For these periods, he adds one veto player to the number of parties in government.

In line with theory, veto players should hinder efforts for change in government size regardless of its direction. To test this hypothesis, the veto player variable is interacted with the ideology indicator. The impact of ideology on government size should be diminished by a larger number of veto players. Since ideology is expected to be positively associated with government size, the interaction term should show a negative sign:

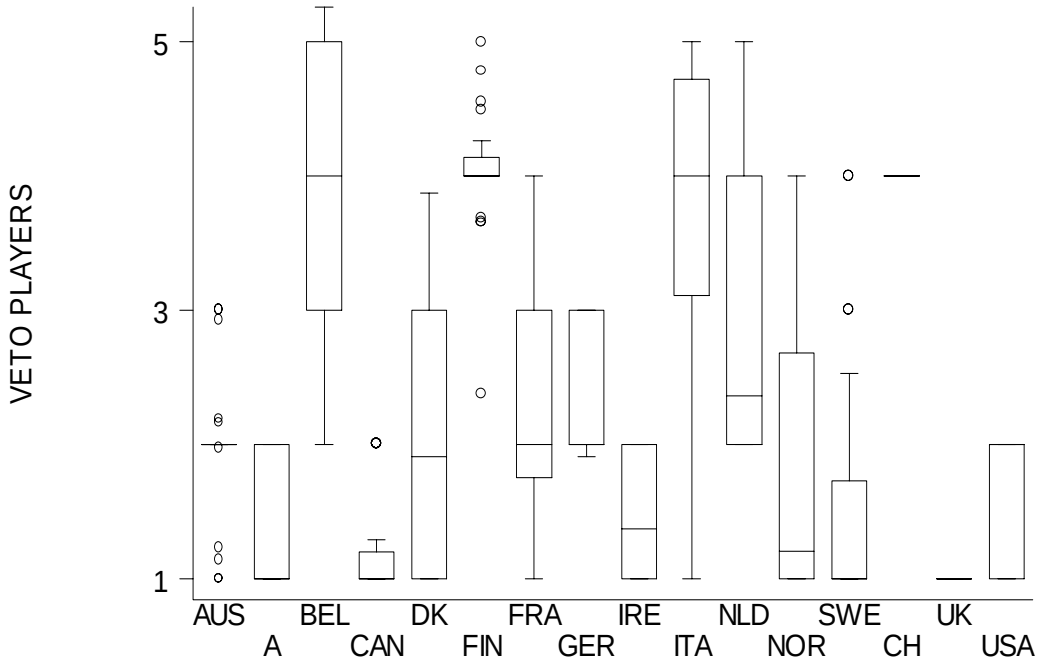
H_2: IDEOLOGY x VETO PLAYERS is negatively correlated with GOV.

No independent effect of veto players on government size is expected by veto players theory. But Roubini and Sachs (1989) argued that many government parties will result in an increase of government size, because each of them has to serve a different constituency. According to this argument, the size of government should increase due to procedures such

23 Tsebelis' data sets do not include the number of veto players for the United States. It was taken from the dataset of Franzese, who employed Tsebelis' counting rules (for source descriptions see table A6).

as logrolling among coalition members. A positive independent effect would support this thesis.

Figure 5.3: Variation in Veto Players by Country, 1964-1993



Source: Tsebelis/Franzese (for source descriptions see table A6).
Notes: Number of veto players according to Tsebelis (1999, 2002); for country codes see table A1.

Figure 5.3 presents the variation in the number of veto players for each country[24]. Interesting cases are Switzerland and the United Kingdom, which both show no variation at all, but on very different levels. Whereas Switzerland was consistently governed by a coalition of four parties, the United Kingdom was ruled by single party governments over the whole period. A generally small number of veto players is also shown by the other Anglo-American countries and Sweden. Finland is the only country besides Switzerland which is characterized by a large and relatively stable number of veto players. Belgium and Italy stand out for their considerable variation on a generally high level.

[24] For a graphical representation of the number of veto players over time for individual countries see figure A2.

5.5 Corporatism as a Multidimensional Phenomenon

As discussed in section 4.3, corporatism is a highly complex phenomenon. Several features of it are theoretically and empirically closely related, and which one of them is the true causal factor responsible for a certain outcome can hardly be identified. Taking into account the multidimensionality of the concept, a composite measure of corporatism (CORPORATISM) developed by Hicks and Kenworthy (1998) is used in the analysis. The indicator is taken from a dataset of corporatism measures compiled by Lane Kenworthy[25].

The indicator has several advantages over its alternatives. Firstly, it heavily weighs tripartite policy concertation in the composite index, which is the most important dimension for the theoretical argument. Secondly, it focuses not only on measures of union strength like so many indicators, but also includes an item for the strength of business confederations. Last but not least, it varies over time and covers the widest range of countries and time-points of the measures available.

The composite measure consists of seven items which were derived by Hicks and Kenworthy (1998) from a larger set of cooperative institutions through factor analysis. They include measures of encompassing, centralized structures of business confederations, coordinated wage bargaining, cohesive government-interest group interrelations, an index of tripartite corporatism derived by Lijphart and Crepaz (1991), an index of social-democratic corporatism developed by Hicks and Swank (1992), measures for investor-firm cooperation, and labor-management cooperation.

At first sight, it seems questionable on theoretical grounds whether investor-firm relations and shop-floor cooperation of management and labor should be included in an index that measures cooperation on the macro-level. Hicks and Kenworthy (1998: 1644-1646) argue that in a historical perspective, strong and stable financial relationships between firms and banks fostered the formation of industrial associations. Investments took not only the form of long-term loans but also of equity ownership. The result was a strong bank control of industry which furthered the establishment of business confederations to allow industry to make itself heard in these “voice-based partnerships” (Hicks & Kenworthy, 1998: 1644).

[25] For a description see Kenworthy (2000).

As a reaction, the strong organization of business fostered the development of nationally comprehensive union organizations to counteract the increased power of employers.

Whereas investor-firm cooperation is seen as part of the historical development of corporatism, labor-management cooperation is argued to be a consequence of macro-level cooperation. Union coordination and tripartite neo-corporatist arrangements are supposed to have encouraged the passage of legislation that limits the discretion of large companies and favors codetermination of workers (Hicks & Kenworthy, 1998: 1646). Whether or not one shares this theoretical reasoning, the fact remains that both items load heavily on the same factor as the other measures which are more unambiguously identified with macro-level corporatism. Even if these are just chance correlates, the scores for the overall measure should not be distorted.

Another issue is the measurement of the different items. Most of them are measured annually but relatively crudely by classifying institutions as either highly (receiving a score of 1), moderate (0.5), or weakly cooperative (0). The items for social-democratic and tripartite corporatism unfortunately do not vary over time and just reflect ordinal rankings of countries. Hence, the composite corporatism variable cannot be regarded as interval scaled, which sets limits to a rigorous interpretation of its regression coefficient. The final score for the composite indicator was derived by averaging the items for each year. It is not obvious why the factor loadings were not used to calculate weighted averages. In summary, the corporatism indicator is the most problematic in terms of measurement and conceptual ambiguity used in this analysis, but no better alternatives were obtainable.

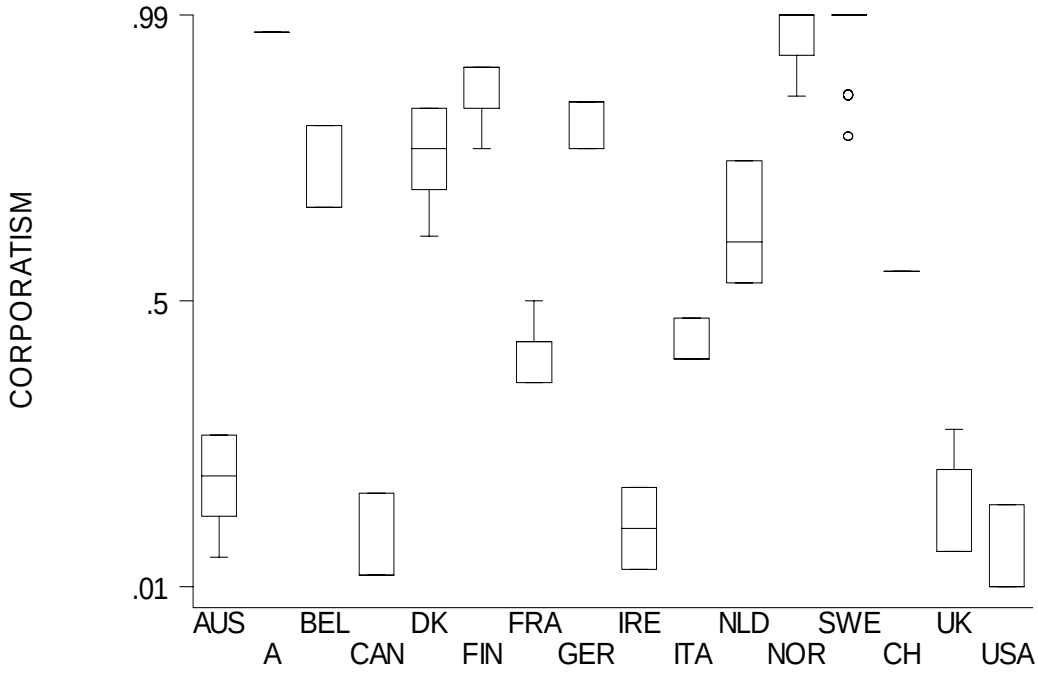
Similar to veto players, corporatist settings are expected to hinder governments in realizing their preferred policies. Again, this can be tested through an interaction with government ideology. Corporatist arrangements should decrease the impact of government ideology on government size:

H_3: IDEOLOGY x CORPORATISM is negatively correlated with GOV.

As noted earlier, this hypothesis stands in contrast to social-democratic corporatism theory. According to this view, it is the combination of a left party in government with its backing by strong unions in society which yields the necessary power resources for a distinct

partisan policy (Cusack & Garrett, 1992; Garrett, 1995, 1998). A positive relationship between the interaction term and government size would support this theory. Furthermore, whereas no independent effect of corporatism is expected in line with the theoretical argument made above, a positive impact would be consistent with social-democratic corporatism theory, which argues that trade unions are in a favorable position to realize their interests especially through their involvement in corporatist institutions (Swank, 2002: 41).

Figure 5.4: Variation in Corporatism by Country, 1964-1993



Source: Kenworthy (for source description see table A6).
Notes: Composite corporatism indicator according to Hicks and Kenworthy (1998). For country codes see table A1.

Not surprisingly, figure 5.4 shows very little variation in corporatism for all countries[26]. The corporatism scores for Austria and Switzerland do not even vary at all. Nevertheless, the figure is informative in that it points to cross-sectional differences. The Anglo-American countries were consistently characterized by rather pluralist interest group systems, in contrast to the Scandinavian systems, which were highly corporatist over the

[26] For a graphical representation of the corporatism variable over time for individual countries see figure A3.

whole period. Austria showed a similarly high level of corporatism. The remaining continental European countries took intermediate positions between these two extremes.

5.6 Control Variables

This section describes the operationalization of the economic and socio-demographic theories discussed in section 4.4. International integration of domestic markets is measured by two variables. The sum of exports and imports as a percentage of GDP (TRADE) serves as an openness measure for goods and services markets. The measure is taken from the "Political Economy of Public Debt Data Base" (PDDB) of Robert Franzese. The index derived by Quinn (1997) (OPENNESS) measures the degree of regulation of capital markets and provides a proxy for international financial integration. Quinn's index takes scores from 0 to 14, ranging from most closed to most open financial markets. The variable is included in the "Comparative Political Data Set" (CPDS) of Klaus Armingeon and colleagues. While trade enters the analysis in percentage changes, such a transformation does not make sense in the case of openness. Its value does not change frequently which would result in a score of zero for most of the period, and, more importantly, for different levels of financial deregulation. As noted earlier, the expected relationships for these variables are controversial.

For the social security interpretation of Wagner's Law, the share of the population over 65 years of age (ELDERLY) is used as an indicator. Income measured as real GDP per capita (INCOME) represents the economic development interpretation. Both variables enter the analysis as percentage changes. The standardized unemployment rate (UNEMPLOYMENT) controls for the effects of unemployment. The variable is not measured in changes but in absolute differences to the previous year. The use of percentage changes would result in huge values for the variable in cases where the previous year's rate of unemployment was close to zero, as for example in Switzerland up to the mid seventies (Kittel et. al., 2000: 20). All three variables are expected to have a positive effect on government size and are taken from the PDDB.

To control for changes in the denominator of the dependent variables, the change in GDP (GDP) and the change in working age population (WORKING AGE POPULATION) are included in the respective models. The association with the dependent variable should in

both cases be negative. GDP is taken from the CPDS and working age population is calculated from variables in the PDDB. The relative price of public goods (BAUMOL) is used as an indicator for a possible Baumol's disease effect. The variable is computed by dividing the deflator for public consumption through the GDP deflator which results in an "approximation for the relative cost of public production" (Katsimi, 1998: 130). The variable was also transformed to percentage changes. In accordance with theory, a positive effect is expected. The statistics for the calculation are taken from the OECD Economic Outlook Database.

6 Empirical Analysis

Having described how the factors identified as influential on government size are measured and how they are supposed to be related to the dependent variable, this chapter discusses the empirical examination of these hypotheses. Since one of the main theoretical claims of this paper centers on the interacting effects of political variables, the first section describes the calculation and meaning of interaction effects in the context of multiple regression analysis. The second section discusses the advantages and disadvantages of pooled time-series cross-section data, and states the general regression model to be estimated. The interpretation of results, in particular concerning the usefulness of significance tests as decision procedures for accepting hypotheses, is briefly discussed in the last section.

6.1 Interaction Effects in Multiple Regression

The main argument of this paper is that the degree to which government can transform its preferences into policies depends on the structure of the broader political system, specifically on the number of veto players brought about by political institutions and on the organization of interest groups and their more or less institutionalized relations to the state. It is argued that a potential causal relationship between partisan government and public sector size is moderated by veto players and organizationally strong interest groups. In other words, the nature of the relationship varies, depending on the two structural characteristics. The common approach to examine moderated causal relationships among continuous variables in multiple regressions is the analysis of interaction effects. Given their prominence in this study, a note on their calculation and interpretation is in order[27].

A typical additive model for predicting the dependent variable Y from independent variables X_1 and X_2 takes the form of the following regression equation: $Y = a + b_1X_1 + b_2X_2 + e$, where a is an estimate for the intercept, b_1 and b_2 are the estimated regression coefficients for X_1 and X_2, respectively, and e is a residual term. This equation assumes that the regression of Y on X_1 is independent of X_2 and the regression of Y on X_2 is independent of X_1. Put another way, the regression coefficient b_1 is constant across the range of X_2 and vice versa. If one assumes that the relationship between X_1 and Y is

[27] The remainder of this section is mainly based on Jaccard et. al. (1990) and Aiken and West (1991).

moderated by X_2, a product term of the two independent variables has to be formed and included in the regression, resulting in the modified equation $Y = a + b_1X_1 + b_2X_2 + b_3X_1X_2 + e$, where the multiplicative term X_1X_2 represents the interaction and b_3 its regression coefficient. In this model, it is assumed that the slope of Y on X_1 depends on the specific value of X_2 at which the slope of Y on X_1 is measured[28].

To calculate the effect of X_1 on Y conditional on a specific value of X_2, the interaction equation is restructured through simple algebraic manipulation (see Aiken & West, 1991: 9-14). The variable for which the effect is calculated is factored out, which in the case of X_1 yields $Y = a + (b_1 + b_3X_2)X_1 + b_2X_2 + e$. Here, $(b_1 + b_3X_2)$ represents the "simple slope" (Aiken & West, 1991: 12) of the regression of Y on X_1 conditional on a single value of X_2. Whether such a conditional effect differs statistically significant from zero can be investigated by a t-test. Substituting specific values for X_2 in the general equation generates a series of "simple regression equations" (Aiken & West, 1991: 12) for different levels of X_2. Which values of X_2 are meaningful for consideration depends on theory and measurement issues.

Having described the statistical treatment of moderated relationships in multiple regressions and the calculation of conditional effects, the remainder of this section discusses the interpretation of regression results with regard to interaction effects and some practical issues aimed at enhancing it. An obvious question is whether or not the hypothesized moderated relationship is supported by the data. A statistically significant regression coefficient b_3 of the interaction term X_1X_2 indicates that the regression of Y on X_1 indeed varies across the range of X_2 (Aiken & West, 1991: 21). The sign and value of b_3 indicates the direction and the number of units that the slope of Y on X_1 changes, given a one-unit change in X_2. In other words, the slope of Y on X_1 changes as a linear function of scores of X_2 (Jaccard et. al., 1990: 22).

[28] Since the X_1X_2 interaction is symmetrical, the same holds for the slope of Y on X_2 with regard to X_1. Which one of the two variables is interpreted as the moderating variable and which one as the causal variable is a purely theoretical question. For simplicity, only the case where X_2 is assumed to be the mediating variable is illustrated, but all procedures outlined apply equally to cases where X_1 is the moderator.

The interpretation of the main effect of X_1 is difficult in the presence of a significant interaction with X_2. Indeed, even the term main effect is strictly speaking not an adequate description in this case, since main effects are usually regarded to be constant irrespective of the value of other independent variables (Aiken & West, 1991: 38). But here the regression coefficient of X_1 varies according to values of X_2. The b-value given in the regression table for X_1 just represents the conditional effect when the interacting variable equals zero (Jaccard et. al., 1990: 27).

As Aiken and West (1991: 37) note, this can lead to interpretational problems if a value of zero is meaningless for one or both of the interacting variables. An example in the context of this study is the veto player variable which has a minimum value of one. Assuming an interaction between government ideology and veto players, the regression coefficient of ideology given in the regression output table would represent the conditional effect of ideology on government size when the veto player variable equals zero, a value that is theoretically impossible since there is always at least one veto player in a political system.

Centering independent variables is a cure for this problem (Aiken & West, 1991: 38). When variables are centered, a value of zero corresponds to the mean of the variable. Thus, in centered regressions, the regression coefficient of X_1 is its conditional effect when X_2 is set to its mean. Another interpretation is to see b_1 as the average effect of X_1 across the range of X_2. Calculating all simple slopes of Y on X_1 for every value of X_2, weighting each slope with the number of cases with that value of X_2, and taking the weighted average of the simple slopes results in the average simple slope equal to b_1 (Aiken & West, 1991: 38).

Another, rather technical but nevertheless important reason for centering variables is the reduction of multicollinearity in the model. Interaction terms are usually highly correlated with the variables which they are comprised of, resulting in inflated standard errors for the regression coefficients (Jaccard et. al., 1990: 30). This high correlation is due to scaling, not to a substantive relationship between variables, and can be greatly lessened by centering variables (Aiken & West, 1991: 35). Hence, all the variables in the following analysis were linearly transformed so that their mean is zero. The factoring of the product term is crucial in the computation of conditional effects. Since a centered product term is

not generally equal to the product of centered variables, interacting variables had to be centered before multiplicative terms were formed (Aiken & West, 1991: 43).

In summary, moderated causal relationships can be tested for by multiplicative terms in the regression equation. Given the presence of an interaction effect, conditional effects for different values of the moderating variable can be calculated. Centering independent variables generally enhances interpretation of results and reduces the problem of multicollinearity in interaction analysis. Whereas the discussion considered only the case of one product term in the regression, all the procedures can easily be generalized and all arguments apply similarly to the case where the relationship between the dependent and the independent variable is hypothesized to depend on the level of two other predictors. The only difference is that all conditional effects are dependent on values of two other variables instead of one. The next section discusses the specification of the model in which these interaction terms are incorporated.

6.2 Time-Series Cross-Section Regression

The statistical analysis in this paper is based on pooled data in the sense that time-series are combined for several cross-sections. The analysis of pooled time-series cross section data yields some major advantages to the analysis of pure cross-section or pure time-series data, but does not come without cost. This section clarifies the terminology of pooled cross-section time-series data analysis, discusses the choice for the estimation method, and the methodological advantages and disadvantages identified with pooling data. It shows how each of the problems identified are dealt with in the analysis, which eventually leads to a description of the statistical model employed.

As mentioned above, time-series cross-section data is characterized by repeated observations over the same unit, where the units are usually some organizational entities like states, cities, or companies. Given this complex data structure, a terminological distinction is made between “cases” and “observations”. In this analysis, the former refers to countries and the latter to a specific time point where a certain country is observed, also called a “country-year” (Podestà, 2002: 7).

Pooling time-series for several cross-sections has some noteworthy advantages in statistical analyses. Most importantly, pooling promises to solve the small-N problem in quantitative comparative research (Hicks, 1994: 170). Often, there are too many potential explanatory variables and too few cases for many research questions to be analyzed through single time-series or cross-section analysis. The focus on country-times as the unit of analysis largely reduces this problem. The increased degrees of freedom allow not only for the inclusion of various variables in the analysis representing alternative theories but also for the control of omitted variables through time or country dummies. Furthermore, pooled models allow for the analysis of variables that vary only little either over time or over space. This can lead to a number of "analytical refinements" because it allows for a systematic comparison of cross-sectionally and longitudinally varying causal forces within a single analysis (Hicks, 1994: 171).

Given these advantages, it is not surprising that pooled TSCS analysis has become increasingly popular in political research over the last one and a half decade. But pooling also brings about some serious problems. In fact, each of the advantages described above has its adverse "side-effects". The increased number of observations through pooling is associated with a more complex error structure, making estimates with good properties rather difficult. Whereas some cures have been proposed to deal with this problem methodologically, criticism of the latter "advantage" of analyzing cross-section and time-series variation simultaneously has been more fundamental, questioning in general the adequateness of pooling across time and space dimensions. In what follows, these problems and criticisms are discussed and it is described how they are dealt with in the analysis.

Multiple regression models are usually estimated by OLS. The quality of these estimates crucially depends on the validity of the Gauss-Markov assumptions. The Gauss-Markov theorem assumes independent and identically distributed errors, that is the errors have an expected value of zero, a constant variance, and are uncorrelated with each other (Kohler & Kreuter, 2001: 199). Although the assumptions have to be met in any OLS regression to give "best linear unbiased estimates", they are more likely violated in the case of TSCS data due to pooling across time and space. Beck (2001: 275) discusses three likely sources for such violations: (1) Countries may have their own error variance (panel

heteroscedasticity), (2) errors for one country may be correlated with errors for other countries in the same year (contemporaneous correlation), and (3) errors for one country may be correlated to errors of the same country at an earlier time point (serial correlation). If at least one of these "panel assumptions" is valid, OLS is still consistent but inefficient and standard errors are incorrect (Beck & Katz, 1995: 636).[29]

Beck & Katz' (1996) recommend to account for serial correlation through a lagged dependent variable, to estimate the coefficients by OLS, and use their panel corrected standard errors (PCSE) to correct for panel heteroscedasticity and contemporaneous correlation of errors. Although there is little controversy about using OLS/PCSE for estimating TSCS models, Beck and Katz's (1996) recommendation to account for serial correlation by a lagged dependent variable has seen some criticism. Kittel and Winner (2002) argue that the coefficients of lagged dependent variables are biased upwards because of the extreme persistency in the data as often encountered in comparative political research, leaving little variation to be explained by more theoretically interesting variables. Using the change instead of the level of government size as the dependent variable largely reduces this problem, since change scores are not as trend-ridden as level values.

Overall, from a technical standpoint the problems generated by the more complex error structure of TSCS data seem adequately tackled by using OLS in combination with PCSE and a lagged dependent variable. But on a more conceptual level it has been questioned whether pooling across time and space leads to meaningful results. The basic pooled model assumes that a single coefficient for each variable can be estimated over all countries and time points. Kittel (1999: 232) notes two shortcomings of this approach. Firstly, the coefficient represents the combined partial effect of both time and space dimension, but gives no information of the relative contribution of each dimension to its value. Secondly, because the coefficient is assumed to be constant in time and space, systematic changes of the relationship over time cannot be detected. A further critique comes from Western

[29] More complex error structures are of course principally possible but either implausible or would result in highly increased model complexity, which is (arguably) not warranted compared to the effort (for a short discussion see Kittel, 1999: 228-229).

(1998: 1234), who argues that "causal heterogeneity" brought about by institutional differences between countries should be taken into account when estimating parameters.

Regarding the first point of criticism of concealed unit and time effects, the model estimated below includes a full set of time dummies to control for joint trends and shocks. In effect, the model is transformed from one of absolute values into one of relative deviations from the cross-sectional mean of each year, which results in a focus on the cross-sectional dimension (Kittel & Obinger, 2003). In response to the second critique of relationships possibly changing over time, the model is estimated for two separate sub-periods to investigate the temporal stability of coefficients. Finally, concerning the critique of Western (1998), the very reason why ideology is interacted with veto players and corporatism in the analysis is to allow for heterogeneity in the ideology effect brought about by country-specific structural arrangements[30].

To conclude the discussion, the model is estimated by OLS combined with PCSE for the estimation of coefficients and standard errors, respectively, a full array of time-dummies to control for period-specific effects of omitted variables, and a lagged dependent variable on the right hand side of the equation to account for serial correlation in errors. It is calculated for the whole sample as well as for two sub-periods to examine the stability of parameter estimates over time. The regression equation takes the following form:

$$
\begin{aligned}
\Delta GOV_{i,t} = {} & \beta_0 + \beta_1 * \Delta GOV_{i,t-1} \\
& + \beta_2 * IDEOLOGY_{i,t-1} + \beta_3 * CORPORATISM_{i,t-1} + \beta_4 * VETO\ PLAYERS_{i,t-1} \\
& + \beta_5 * (IDEOLOGY * CORPORATISM)_{i,t-1} \\
& + \beta_6 * (IDEOLOGY * VETO\ PLAYERS)_{i,t-1} \\
& + \beta_7 * OPENNESS_{i,t-2} + \beta_8 * \Delta TRADE_{i,t-1} + \beta_9 * \Delta INCOME_{i,t-1} \\
& + \beta_{10} * \Delta BAUMOL_{i,t} + \beta_{11} * \Delta UNEMPLOYMENT_{i,t} + \beta_{12} * \Delta ELDERLY_{i,t} \\
& + \beta_{13} * \Delta DENOMINATOR_{i,t} + \sum \beta_j * TIME_{j,i,t} + \varepsilon_{i,t}
\end{aligned}
$$

With i = 1,…,N being the number of cases, and t = 1,…,T being the number of time points per case. The number of observations is given by N = 16 times T = 30 as 480 for the whole

[30] Note that Western (1998) argues that a Bayesian hierarchical modeling approach is more suitable to take causal heterogeneity into account than interaction terms.

period and with T = 15 as 240 for each sub-period. The dependent variable is one of the indicators for government size (GOV). The right-hand side of the equation includes a lagged dependent variable, the variable representing government ideology, and the indices for political constraints, as well as their multiplicative terms. TIME represents j = T-1 year dummy variables and DENOMINATOR represents the denominator of the government size indicator, that is GDP or working age population, respectively. The other variables are controls for economic and socio-demographic factors as described in sections 5.6. With the exception for unemployment, which is entered in differences to the previous year, Δ denotes percentage changes.

A time lag of t-1 was chosen for the ideology variable, reasoning that government decisions take some time to realize in policy output. An advantage of this procedure is that it reduces the problem of reversed causality often encountered in regression analysis. The remaining independent variables were distinguished, on the one hand, in context factors for government which put pressure on it to act in a certain way or which constrain its discretion, and, on the other hand, in factors which immediately influence the dependent variable and lie beyond the direct control of government.

Hence, income, veto players, corporatism, and trade are entered with the same lag as the government ideology variable since they represent the environment in which government makes its decision. Baumol, elderly, unemployment, and the denominator variables are hypothesized to have a direct effect on government size and enter the analysis with their current values. An exception is openness which is entered with a lag of t-2. The extent of financial regulation is itself an object of government policies; a longer lag length assures at least historical precedence.

Country fixed effects are not included since this effectively transforms the data from absolute values to deviations from their country mean. Time-invariant variables are transformed to zero through this procedure and cannot show any effect on the dependent variable. Although all the variables in the analysis are measured annually, the veto player and especially the corporatism variable do vary only little over time. Indeed, the corporatism variable shows no variance over the whole time period for several countries. These countries would be treated in the estimation of the coefficient for corporatism as if

corporatism had absolutely no influence, no matter whether the interest group system was permanently highly corporatist or permanently pluralist over the period. Since this would render the coefficient estimate meaningless, it is preferable to potentially suffer from omitted variable bias by unobserved constant country effects. Using changes in government size as the dependent variable should also alleviate this problem to some extent.

6.3 Substantial vs. Statistical Significance

Before discussing the results of the statistical analysis, some remarks on the use of significance tests as a decision criterion for the rejection or corroboration of hypotheses are in order. Applying significance tests in statistical analysis has come under criticism from two grounds. From a conceptual point of view, Berk et. al. (1995) have argued that frequentist statistical inference is inappropriate where the data at hand does not constitute a random sample from a larger population (see also Schnell, 1994: 339). Even if one assumes that the observations studied here are a realized sample from some super-population of country-years of OECD countries, it is not known what process generated the sample. In such a situation, "To proceed as if the data were generated by random sampling or random assignment is to embrace a fiction" (Berk et. al., 1995: 430).

But as Bollen (1995: 460) replied, there are procedures to check whether distributional assumptions are warranted and if not, certain corrections can be applied. In the context of this study, a lagged dependent variable and PCSEs are employed to account for violations of the assumption of independent and identically distributed disturbances, which can be expected because of the panel structure of the data. Hence, from a practical point of view, problems brought about by the non-random nature of the sample can principally be corrected for. This leaves the theoretical question of whether the assumption of such a hypothetical super-population is plausible. But here is not the place to further elaborate on this rather complex issue. For the purpose of this study, it will suffice to stick with the procedures conventionally employed in quantitative comparative political research.

The second critique does not question the use of significance tests in principle, but rather its dominance in the interpretation of results. In particular, it has been argued that the focus on statistical significance of parameter estimates distracts from considering their

substantive significance in terms of effect sizes (Schnell, 1994: 339; Gill, 1999: 658). The rejection of the null-hypothesis in significance tests depends often more on the α-level, which is set arbitrarily, and the sample size, rather than on the existence of a real relationship in the population. For example, small effects in the population, which can nevertheless be substantially important depending on the research question, are less likely to be identified than large effects, other things equal. Then again, a large enough sample size almost always result in statistical significance (Gill, 1999), even if the coefficient just reflects a chance-relationship.

Overall, inferring substantial conclusions solely from tests of statistical significance is problematic. As Traxler et. al. (2001: 30) noted, "… neither statistical nor substantive significance alone can do the job". The presentation of the results of the statistical analysis in the next chapter will not just refer to the statistical significance of regression estimates, but also to their substantive effect size and variability. Regression coefficients are given in standardized format to allow for the interpretation of their relative impact and are accompanied by t-statistics, which are derived by dividing the coefficient by its standard error, to give an indication for the precision of the estimate (Traxler et. al., 2001: 30). Regarding interaction terms, the conditional effect of government ideology depending on different values of veto players and corporatism, respectively, is illustrated graphically. In addition, counterfactual estimates of change in government size, resulting from different combinations of values of the interacting variables, are given to demonstrate the magnitude of the mediating effects.

7 Results

This chapter presents the results of the statistical analyses. It is divided into two main parts according to the dependent variable under study. The first part discusses the determinants of change in government consumption expenditure and the second part the model on change in government employment. Each part is divided into three sections. Firstly, the general model results are discussed and it is investigated whether it is appropriate to assume parameter homogeneity across the whole period. In the second step, the results for the interaction effects are considered in more depth. The third section explores how far the basic assumptions of linear regression analyses are met and whether the estimates are robust for different country samples. Finally, at the end of the chapter, a summary and comparison of the findings for the two dependent variables is given.

7.1 Government Consumption Expenditure

Model 1 in table 7.1 gives the results for the government consumption expenditure analysis based on pooled data over the whole period. The fit is quite good for a model with a dependent variable in changes as the R-squared of 0.50 designates and there is no sign of autocorrelation in errors as indicated by the insignificant and small autocorrelation coefficient ρ.

As can be inferred from the standardized coefficients, changes in government consumption in percent of GDP are mainly driven by socio-economic factors and other controls. The GDP variable is negatively related to government consumption, demonstrating that controlling for changes in the denominator of the dependent variable is warranted. Baumol's thesis is strongly supported by the data, indicating that the public sector indeed suffers from automatic increases of its production costs. Together with GDP, baumol has the by far strongest effect on the dependent variable. Change in the unemployment rate also has a clear positive effect as expected. The economic development hypothesis is also supported. Income as measured in GDP per capita is positively related to government consumption, growing affluence of the population seems indeed to result in more demand for public goods.

Table 7.1: .....Regression Results for Civilian Government Consumption

	Model 1 1965-1994	Model 2 1965-1979	Model 3 1980-1994
IDEOLOGY $_{t-1}$	0.072* (1.57)	0.111** (1.88)	0.024 (0.34)
CORPORATISM $_{t-1}$	-0.060** (1.78)	-0.039 (0.82)	-0.058 (0.96)
VETO PLAYERS $_{t-1}$	0.017 (0.48)	0.039 (0.87)	-0.016 (0.25)
IDEOLOGY x CORPORATISM $_{t-1}$	0.056* (1.58)	0.038 (0.59)	0.038 (0.57)
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.021 (0.62)	-0.060* (1.34)	0.051 (0.84)
OPENNESS $_{t-2}$	-0.009 (0.19)	0.005 (0.10)	-0.074 (0.81)
Δ TRADE $_{t-1}$	-0.208*** (4.16)	-0.254*** (3.16)	-0.164*** (2.66)
Δ INCOME $_{t-1}$	0.132** (2.30)	0.077 (1.03)	0.173** (2.16)
Δ BAUMOL	0.351*** (8.11)	0.409*** (6.64)	0.269*** (4.39)
Δ UNEMPLOYMENT	0.142*** (2.51)	0.155** (2.19)	0.169** (1.70)
Δ ELDERLY	-0.102*** (2.36)	-0.113* (1.58)	-0.116** (1.76)
Δ GDP	-0.355*** (6.32)	-0.386*** (5.23)	-0.296*** (3.51)
Δ CONSUMPTION $_{t-1}$	0.023 (0.37)	-0.064 (0.65)	0.094 (0.84)
R^2	0.50	0.52	0.43
ρ	0.074 (0.74)	0.043 (0.32)	0.232* (1.44)
Observations	480	240	240
Countries	16	16	16

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients based on standardized variables; constant and T-1 time-dummies included but not shown; ρ is the autocorrelation coefficient (see Wooldridge, 2002: 176); Δ percentage change (difference for unemployment) * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests);.

The impact of the globalization variables is ambiguous. Both variables have a negative sign, indicating that growing international integration leads to a smaller public sector. Hence, the alternative hypothesis that governments compensate for the uncertainties brought about by globalization finds no evidence. But whereas the effect of changes in trade is statistically and substantially significant, Quinn's financial deregulation indicator cannot be interpreted as having any relation to government consumption. The negative effect of elderly is puzzling. According to the hypothesis, an aging society should lead to more need for publicly provided health and social services. A plausible interpretation of this finding is that the variable signifies the move from the production into the service economy and the combined effect of all its elements on the size of the public sector (Lybeck, 1988: 30).

Turning to the effects of the political-institutional variables, it is obvious that their overall influence on government consumption is comparatively low. Although the interaction term of government ideology and the number of veto players has the expected sign, the variability of the estimate is too high to interpret this as evidence for a constraining effect of veto players on government discretion. The main effect of veto players is also negligible. The interaction term of ideology and corporatism is statistically significant, but its positive sign supports the alternative social-democratic corporatism thesis. The statistically significant negative effect of corporatism is somewhat surprising, but one has to recall that this is not a main effect in the normal meaning. In the presence of an interaction, the coefficient is conditional on the value of its interacting variable. In this case, the coefficient of corporatism shows the conditional effect on government consumption when government ideology is set at its mean. Staying in the framework of social-democratic corporatism, there is less reason to expect a positive effect of corporatism when strong unions are not accompanied by left governments. The ideology of government shows on average a statistically significant positive association with changes in consumption expenditure as expected by partisan theory. The effect size seems rather small compared to the economic variables, but in practice a change of one standard deviation is probably easier accomplished in government ideology than, for example, in unemployment. The next section explores whether the relationships identified hold over the entire time period analyzed.

7.1.1 Temporal Stability

Models 2 and 3 in table 7.1 show the regression results for two sub-periods, the first period ranging from 1965 to 1979 and the second period from 1980 to 1994. Whereas the sixties and seventies were marked by a rapid government growth, the eighties and nineties have seen a slowdown or in some countries even a reduction of public sector size. The early 1980s are often referred to as the starting point of a time of "retrenchment" and "austerity" (Kittel & Obinger, 2003) brought about by increasing unemployment, internationalization, declining economic growth, and rising public debt. It has been argued that there is not much opportunity for governments to pursue distinct partisan policies in such an environment. The year 1980 seems to be a natural cut-off point to divide these two periods, since it identifies the start of a new business cycle (Hicks & Kenworthy, 1998: 1644).

Regarding socio-economic factors, almost all variables yield the same sign over both periods, but except for unemployment and old age population, the magnitude of the association varies considerably. The relative price effect of public goods decreased by approximately one third, indicating that the assumption of no productivity increase at all, which underlies the operationalization of the indicator, might be inappropriate. Many governments in the eighties and nineties went to great lengths to increase efficiency in public administration by introducing management practices and organizational structures developed in the private sector. Income is not statistically significant for the first period, although it shows the predicted positive sign. However, the size of the effect is more than double as high for the second period, indicating that richer countries were longer able to afford a larger public sector. The decrease of the effect of trade for the eighties and nineties is contrary to expectations, since it is hypothesized that economic integration increased strongly in this period and led to more pressure for downsizing the public sector. The change in the estimated coefficient for financial openness is more in accord with the efficiency hypothesis of globalization theory. Whereas it shows virtually no effect in the first period, it considerably increases in the second. Nevertheless, even in the second period it is far from any statistical significance level.

The average effect of government ideology shows an interesting development. While it is statistically significant and quite large for the first period, it shrinks to under one fourth of its value for the eighties and early nineties and loses statistical significance. The

independent effects of corporatism and veto players are not statistically significant in either period. Regarding the interaction terms, the results are perplexing, especially when compared to the base model. The regression for the whole sample displayed a statistically significant interaction of government ideology with corporatism and an insignificant negative interaction with veto players. In contrast, the situation is exactly reversed in model 2. The negative interaction effect of veto players is stronger as in the base model and statistically significant, supporting the veto players theory, but the interaction with corporatism is substantially smaller than in model 1 and does not reach any significance level. In the second period, no interaction effect at all is visible. It seems like the statistically significant effects of corporatism and its interaction with ideology in model 1 are statistical artifacts, brought about by pooling the data over the whole time period.

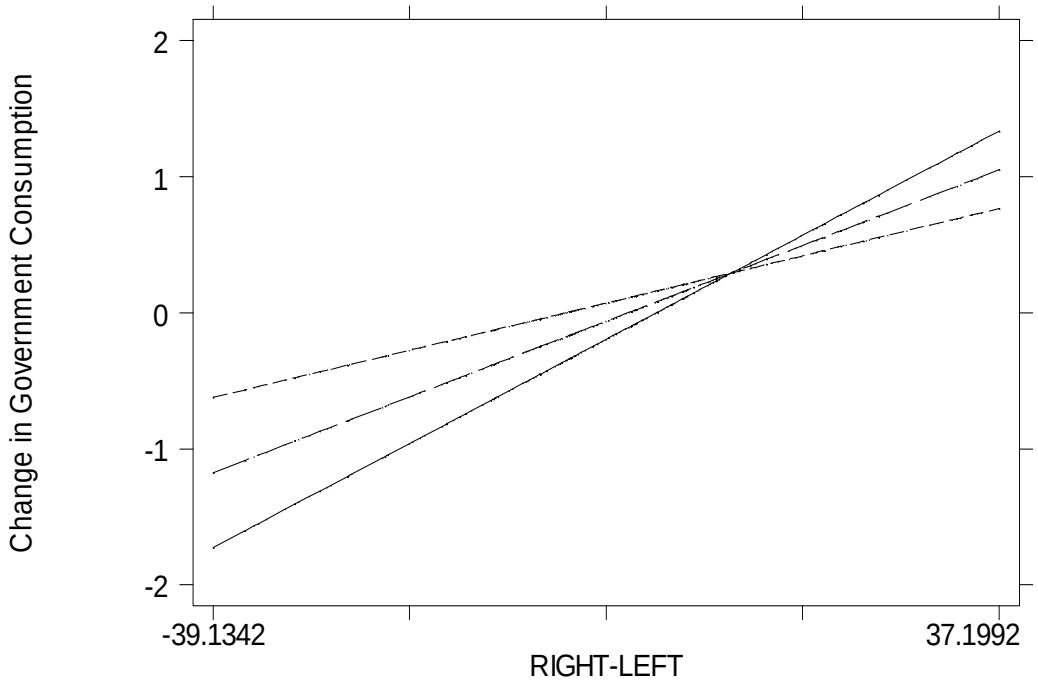
Since model 2 and 3 show sizeable changes in the parameter estimates, the discussion in the following two sections focuses on the two sub-section models. It remains to be recognized that for the eighties and early nineties, no effect of any political variable or interaction term can be identified with certainty. Thus, the next section focuses on the partisan effect in the first period and its interaction with veto players.

7.1.2 Interaction Analysis

Figure 7.1 shows the effect of the ideological position of the leading government party on government size for several levels of the veto player variable. As the number of veto players increases, the slope of ideology flattens. The conditional coefficients and their t-statistics given in table 7.2 confirm this visual interpretation[31]. The ideology effect is almost nullified when the number of veto players exceeds three. The coefficient of ideology is quite large when a government party does not face any other veto players and decreases as the number of veto players increases. With four or more veto players, the ideology effect virtually vanishes.

[31] Note that in contrast to the models in table 7.1, the coefficients in table 7.2 are based on centered but unstandardized variables. Unstandardized variables allow for the identification of empirically meaningful levels of the interacting variables. Conditional ideology effects at a certain number of veto players are more revealing than conditional effects at one or two standard deviations above or below the mean of the variable. However, for comparative reasons, the unstandardized conditional coefficient at the mean of veto players is also given in table 7.2. It corresponds to the standardized coefficient of ideology given in model 2 of table 7.1. The unstandardized regression results for the full models are presented in table A9.

Figure 7.1: Simple Regression Lines of Civilian Government Consumption on Ideology as a Function of Veto Players, 1965-1979



——— Simple slope on ideology at one veto player

— — — Simple slope on ideology at two veto players

– – – – – Simple slope on ideology at three veto players

Notes: Conditional effects plot according to Kohler and Kreuter (2001: 224-226), all other independent variables are set to their means.

The counterfactual estimates given in table 7.2 indicate that government ideology had a substantial effect on changes in the dependent variable in the sixties and seventies. The figures represent the difference in the dependent variable that is due to different ideological positions of government at various levels of the veto player variable. In other words, they reflect the difference in the predicted value when ideology is set to its tenth and ninetieth percentile, respectively, and all other variables in the regression, except the veto player indicator, are set to its mean.

If the veto player variable is also set to its mean, the counterfactual estimate is based on the ideology coefficient given in model 2 in table 7.1. Here, a change in the ideology variable from its tenth to its ninetieth percentile is associated with a 1.26 percentage point increase in the change of government consumption. Taking into account that the average change in

the dependent variable for the period is 2.81 %, a difference of 1.26 % between right and left parties is considerable.

Table 7.2: Ideology Effect on Civilian Government Consumption Conditional on Veto Players; and Counterfactual Estimates, 1965-1979

IDEOLOGY $_{t-1}$	1 Veto Player	2 Veto Players	Mean of Veto Players	3 Veto Players	4 Veto Players	5 Veto Players
Coefficient	0.040** (1.94)	0.029** (1.94)	0.026** (1.88)	0.018* (1.45)	0.007 (0.48)	-0.004 (0.18)
Counterfactuals	1.93	1.41	1.26	0.88		

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients are based on unstandardized variables; estimates are based on model A2 in table A9; * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests); counterfactuals give the difference in the predicted values that results from a hypothetical change in the ideology variable from its 10th (far right) to its 90th (far left) percentile at different levels of veto players and when all other independent variables are set to their means..

Choosing the tenth and the ninetieth percentile for the calculation of the effect sizes is not too liberal. The tenth percentile of ideology corresponds closely to the ideology score of the German Christian Democratic Party in 1964 and the ninetieth percentile to the score of the British Labor Party in 1976. Neither of these parties exhibits extreme ideological positions. In addition, the raw scores of these percentiles are roughly -25 and +25, whereas the ideology variable can theoretically range from -50 to +50.

The 1.26 % increase in the dependent variable reflects the average effect of ideology over all possible numbers of veto players. Comparing the effect sizes for different numbers of veto players illustrates the constraining effects these have on the discretion of the leading government party. Where a party is governing alone and does not face any institutional veto players, the change in the predicted value amounts to 1.93 %. This effect is more than halved to 0.88 % if a government party faces two other veto players.

A note of caution is in order here. The differences in predicted values are given to aid in the interpretation of effect sizes. Of course, the regression coefficients also represent effect sizes, but they often do not convey their impact on the “real world”. However, a

shortcoming of predicted values is that they do not give any information about the uncertainty involved in their estimation (King et. al., 2000: 356). Hence, the differences in predicted values should not be regarded in isolation, but only in combination with the t-statistics of the regression coefficients and their statistical significance. For this reason, only counterfactual estimates for statistically significant conditional effects are given and only their slopes are graphed in conditional effects plots like figure 7.1.

To sum up, this section showed that government ideology had a substantial effect on changes in government consumption during the sixties and seventies. The extent to which leading government parties could realize its favored policy outcome apparently depended on the number of veto players. The next section explores how robust these results are and describes the regression diagnostics performed.

7.1.3 Model Assumptions and Robustness

According to Hamilton (1992: 110-112), a model has to fulfill several assumptions for the coefficient estimates to be unbiased. These assumptions are that independent variables and errors are not correlated, that the errors have a mean of zero, and that the expected value of the dependent variable is a linear function of the independent variables. Only the latter assumption can be checked using sample data (Hamilton, 1992: 112). A scatterplot matrix plotting the change in government consumption against all independent variables[32] and component-plus-residual plots[33] (see Schnell, 1994: 238; Kohler & Kreuter, 2001: 204) for each independent variable gave no indication of any nonlinear relationship in the models.

As noted above, to account for panel heteroscedasticity and contemporaneous correlation of errors, which lead to biased standard errors, the panel correction as proposed by Beck and Katz (1995) is employed. Another source for biased standard errors is serial correlation in errors. As the insignificant coefficient for first order autocorrelation ρ (see Wooldridge, 2002: 176) in table 7.1 suggests, there is no sign of serial correlation in models 1 and 2. A problem arises in model 3. Here, the null of no serial correlation is rejected by the t-test. Besides biased standard errors, the likely result of serial correlation in the presence of a

[32] See figures A4 and A5.

[33] Not shown for reasons of space.

lagged dependent variable is an overestimation of the autoregression coefficient at the expense of the other independent variables (Ostrom, 1990: 65). Since the size of the coefficient of the lagged dependent variable and the size of ρ is rather modest, this seems not too serious a problem. Indeed, in a regression using an additional dependent variable lagged two years on the right hand side of the equation, the null of no serial correlation is not rejected[34]. Because the results are not substantially different when using a second dependent variable lagged two years, it was decided to stick with the current specification.

A problem that is often encountered in regression analysis is multicollinearity among independent variables, which leads to inefficient parameter estimates (Hamilton, 1992: 113). It was mentioned already that the variables were either standardized or centered before entered in the regression to alleviate this problem. None of the substantial variables showed a variance inflation factor higher than 4. By far the largest variance inflation factor exhibited a time dummy in model 2 with a value of 6.4. Since factors above 10 are usually regarded as problematic (Schnell, 1994: 247), multicollinearity is not an issue in the models[35].

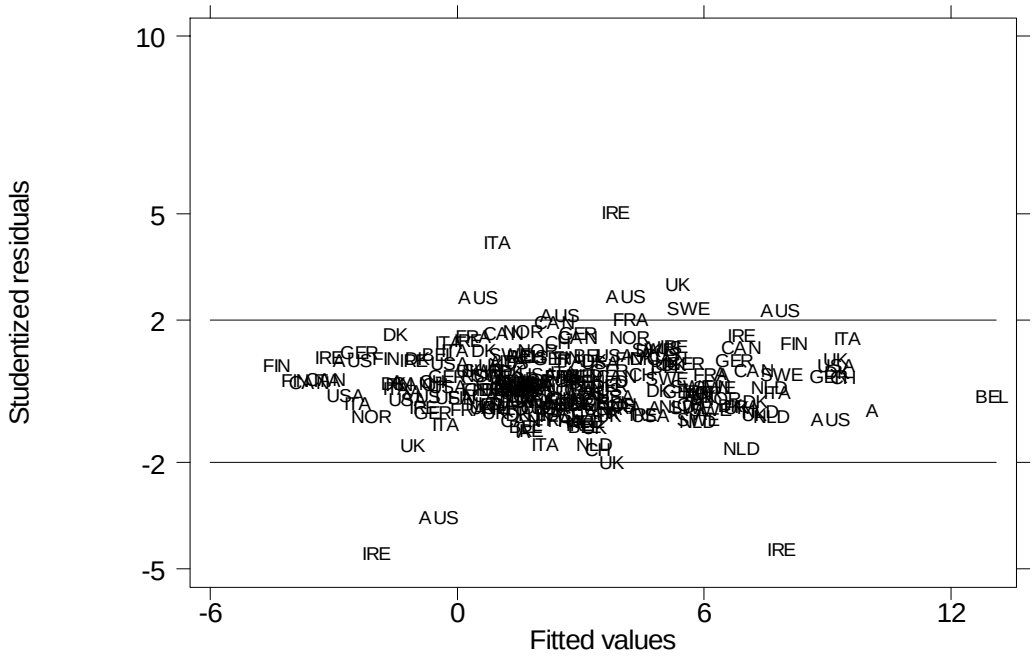
Statistical results can also be unduly influenced by outlying observations. Outliers are observations that have such extreme values on one or a combination of variables that they distort statistics (Tabachnick & Fidell, 1996: 65). Visual inspection of the models suggests that they are both plagued by this problem. The plots of the studentized OLS residuals[36] against the fitted values (see Schnell, 1994: 231; Kohler & Kreuter, 2001: 200) in figures 7.2 and 7.3 show several observations far above or below the overall swarm.

[34] See regression results for model A7 in table A11.

[35] See also the correlation matrices of the main variables in table A7 and A8.

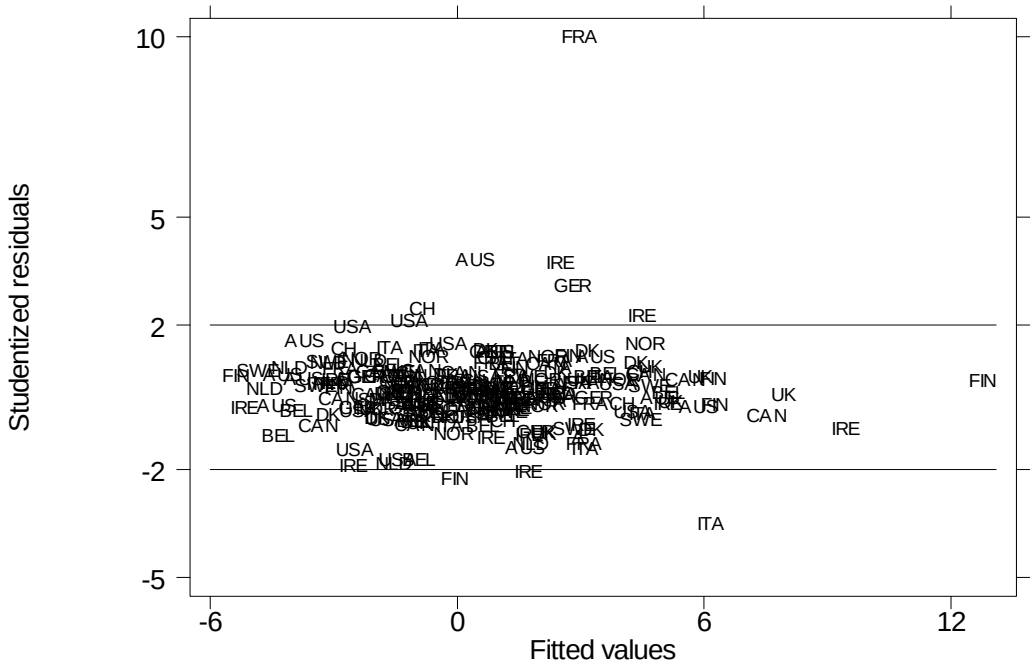
[36] For the advantages of using studentized instead of raw residuals see Schnell (1994: 222).

Figure 7.2: .....Residual vs. Fitted Plot for Civilian Government Consumption, 1965-1979



Note: Residual vs. fitted plot according to Schnell (1994: 231); for country codes see table A1; studentized residuals with absolute values higher than 2 are considered as "large" (Schnell, 1994: 222).

Figure 7.3: Residual vs. Fitted Plot for Civilian Government Consumption, 1980-1994



Note: Residual vs. fitted plot according to Schnell (1994: 231); for country codes see table A1; studentized residuals with absolute values higher than 2 are considered as "large" (Schnell, 1994: 222).

Principally, there are two options in treating such outliers. They can be either dropped or corrected. The first strategy may be permissible in the case of a random sample if there are some hints that the outlying observation actually does not belong to the underlying population (Tabachnick & Fidell, 1996: 69). But in TSCS designs there is no theoretical justification to remove single observations from the sample because the sample constitutes the population. In addition, dropping single country-times would interrupt time-series which is especially problematic when a lagged dependent variable is included in the regression.

Since most outliers in figures 7.2 and 7.3 have extreme values on the dependent variable, a transformation of the government consumption variable could principally be helpful. But the dependent variable is approximate normally distributed for both periods, thus a transformation would make matters rather worse than better. Just changing the dependent variable to less extreme values is also not permissible, except if there are strong reasons to suggest measurement error. But none of the extreme values is so unrealistic as to imply such a measurement error. Even the very large residual for France in figure 7.3 is not solely driven by its exceptionally high value on the dependent variable, since there are several other observations in the sample that exhibit more extreme scores.

Without any rationale, single observations cannot be dropped or variable scores changed. But one way to examine the robustness of the results in general and to some extent the influence of outlying observations is to run the regression repeatedly, leaving out the data for one country at a time (Kittel & Obinger, 2000: 36). The results of such a Jackknife analysis for the two sub-period models are presented in table 7.3. The Jackknife range gives the lowest and the highest standardized coefficients obtained for the different samples together with their t-statistics. The country code indicates which country was excluded from the regression where the estimate is derived from.

Table 7.3: Results of Jackknife Analysis for Civilian Government Consumption, Sub-Periods

	Model 2 1965-1979	Jackknife Range		Model 3 1980-1994	Jackknife Range	
		lower	upper		lower	upper
IDEOLOGY $_{t-1}$	0.111**	0.019	0.176***	0.024	-0.058	0.087
	(1.88)	(0.33)	(2.62)	(0.34)	(0.93)	(1.24)
		IRE	UK		FRA	IRE
CORPORATISM $_{t-1}$	-0.039	-0.098**	0.023	-0.058	-0.128**	0.018
	(0.82)	(1.76)	(0.43)	(0.96)	(1.69)	(0.34)
		UK	A		IRE	FRA
VETO PLAYERS $_{t-1}$	0.039	-0.004	0.096**	-0.016	-0.043	0.010
	(0.87)	(0.10)	(1.93)	(0.25)	(0.57)	(0.13)
		IRE	NLD		CH	GER
IDEOLOGY x CORPORATISM $_{t-1}$	0.038	-0.035	0.120**	0.038	0.004	0.078
	(0.59)	(0.48)	(1.93)	(0.57)	(0.05)	(1.05)
		UK	IRE		IRE	GER
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.060*	-0.085**	0.016	0.051	0.033	0.102*
	(1.34)	(1.79)	(0.37)	(0.84)	(0.54)	(1.44)
		FIN	IRE		IRE	CH
OPENNESS $_{t-2}$	0.005	-0.044	0.040	-0.074	-0.108	-0.030
	(0.10)	(0.67)	(0.96)	(0.81)	(1.11)	(0.34)
		UK	AUS		CH	AUS
Δ TRADE $_{t-1}$	-0.254***	-0.291***	-0.166**	-0.164***	-0.239***	-0.096*
	(3.16)	(3.48)	(2.28)	(2.66)	(3.80)	(1.47)
		NOR	AUS		USA	AUS
Δ INCOME $_{t-1}$	0.077	0.042	0.105*	0.173**	0.101	0.220***
	(1.03)	(0.51)	(1.33)	(2.16)	(1.18)	(2.40)
		CH	DK		USA	CAN
Δ BAUMOL	0.409***	0.367***	0.445***	0.269***	0.227***	0.341***
	(6.64)	(5.89)	(7.23)	(4.39)	(3.19)	(5.58)
		ITA	NLD		NOR	IRE
Δ UNEMPLOYMENT	0.155**	0.059	0.197***	0.169**	0.120	0.341***
	(2.19)	(0.92)	(2.58)	(1.70)	(1.15)	(5.58)
		IRE	DK		USA	FIN
Δ ELDERLY	-0.113*	-0.149**	-0.071	-0.116**	-0.185***	-0.059
	(1.58)	(1.81)	(1.16)	(1.76)	(2.34)	(1.10)
		FIN	IRE		ITA	FRA
Δ GDP	-0.386***	-0.427***	-0.353***	-0.296***	-0.369***	-0.254***
	(5.23)	(5.70)	(4.45)	(3.51)	(3.98)	(2.74)
		ITA	SWE		GER	FIN
Δ CONSUMPTION $_{t-1}$	-0.064	-0.101	0.044	0.094	0.029	0.146**
	(0.65)	(1.03)	(0.51)	(0.84)	(0.24)	(1.67)
		UK	IRE		IRE	FRA
R^2	0.52	0.50	0.62	0.43	0.40	0.53
		FIN/USA	IRE		FIN	FRA

Notes: Entries for upper and lower bounds are the most extreme coefficients obtained from repeated regressions where one country was excluded after another from the sample (see Kittel & Obinger, 2000: 33); country codes (see table A1) refer to the excluded country; t statistics in parentheses based on panel-corrected standard errors; coefficients based on standardized variables; constant and T-1 time-dummies included but not shown; Δ percentage change (difference for unemployment); * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

The R-squared statistics at the bottom of the table indicate that the model fit is best for Finland. Excluding Finland leads to the lowest R-squared statistic in both periods. It can be seen what quite dramatic effects some outliers have on the statistic. Excluding Ireland from model 2 and France from model 3, the two countries with the largest residuals in these models, increases the model fit by 10 %. Similarly, excluding those countries increases the parameter estimates of the lagged dependent variable considerably in a positive direction. This can be expected since outlying values are usually not very well explained by their value in the previous year.

Turning to the parameter estimates, it is obvious that they all vary substantially in size for different samples. Nevertheless, except for financial deregulation, all control variables keep their initial sign; hence their substantial interpretation does not change. Furthermore, most of the socioeconomic variables keep their statistical significance or at least a t-value larger than one for the different samples. Regarding financial openness, the original interpretation seems prudent. There is no unambiguous effect in the first period visible and the effect in the second period is, although consistently negative across samples, also very uncertain.

Given the consistently positive coefficient for ideology, it seems like the partisan stance of the leading government party indeed had some impact on government consumption during the sixties and seventies. The results for the other political variables are more ambiguous and hard to interpret. Generally, they vary widely across different country samples. Most importantly, the negative interaction of veto players and government ideology identified for the first period crucially depends on the inclusion of Ireland in the sample. If Ireland is excluded, the interaction term loses statistical significance and even turns its sign. During the sixties and seventies, Ireland was characterized by few veto players and showed some very large changes in the dependent variable which were in line with the predictions made by partisan theory. Thus, the results of the interaction analysis presented in the last section are mainly a story about Ireland. Although interesting in its own right, this finding cannot be generalized to a larger sample of countries.

Overall, the only prudent conclusion about the political variables one can draw is that ideology was related to changes in government consumption as expected, but only in the

sixties and seventies. The ideology effect for the eighties and nineties is highly dependent on the specific countries in the sample and does not reach any level of statistical significance. The effects of the other political variables are too weak or too sensitive with respect to the sample coverage. No other political effects on government consumption can be detected unambiguously. In contrast, political factors are the major determinants of changes in government employment, as the following sections illustrate.

7.2 Government Employment

This part of the chapter describes how the statistical model performs on changes in civilian government employment as the dependent variable. Similarly to the last part, the general model results are described at first and the temporal stability of parameter estimates examined. The interaction effects are explored in a second step. The validity of the model assumptions is discussed in the third section, together with the robustness of the model.

Considering model 4 in table 7.4, which is based on all observations over the whole sample period, some results are striking. Whereas changes in government consumption are mainly associated with socioeconomic factors, the dynamics of government employment are highly dependent on political variables. Indeed, the strongest effect yields the ideology variable and the direction of the effect is as hypothesized by partisan theory. Left governments increased and right governments cut back public employment. In addition, this relationship was highly conditioned by veto players and corporatist interest groups. The interaction effect of veto players and ideology shows the predicted negative sign; hence veto players theory is supported. However, the effect of corporatism interacted with ideology turns out contrary to expectations. Similar to the results in model 1, a corporatist interest group system seems to have enhanced the possibility for partisan policies, which corroborates the alternative social-democratic corporatism thesis. Both, the average effect of veto players and of corporatism are not significant.

Table 7.4: .....Regression Results for Civilian Government Employment

	Model 4 1965-1994	Model 5 1965-1979	Model 6 1980-1994
IDEOLOGY $_{t-1}$	0.158*** (3.48)	0.219*** (3.13)	0.086* (1.61)
CORPORATISM $_{t-1}$	0.050 (1.23)	0.120** (1.75)	0.006 (0.10)
VETO PLAYERS $_{t-1}$	0.021 (0.58)	-0.081* (1.39)	0.090** (1.76)
IDEOLOGY x CORPORATISM $_{t-1}$	0.104*** (2.57)	0.110* (1.55)	0.114** (2.17)
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.100*** (2.90)	-0.080** (1.74)	-0.140** (1.66)
OPENNESS $_{t-2}$	-0.090** (2.30)	-0.111** (1.91)	-0.016 (0.25)
Δ TRADE $_{t-1}$	-0.036 (0.60)	-0.093 (0.92)	0.064 (0.91)
Δ INCOME $_{t-1}$	-0.091** (1.65)	-0.185** (2.34)	0.017 (0.22)
Δ BAUMOL	0.069** (1.71)	0.055 (0.86)	0.070* (1.42)
Δ UNEMPLOYMENT	-0.048 (0.92)	0.054 (0.70)	-0.093 (1.18)
Δ ELDERLY	0.041 (1.04)	0.022 (0.27)	0.087** (1.74)
Δ WORKING AGE POPULATION	-0.047 (1.11)	-0.054 (0.90)	0.026 (0.45)
Δ EMPLOYMENT $_{t-1}$	0.214*** (3.30)	0.070 (0.63)	0.492*** (5.88)
R^2	0.46	0.30	0.43
ρ	0.212 (1.21)	0.316 (1.19)	-0.337*** (2.51)
Observations	480	240	240
Countries	16	16	16

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients based on standardized variables; constant and T-1 time-dummies included but not shown; ρ is the autocorrelation coefficient (see Wooldridge, 2002: 176); Δ percentage change (difference for unemployment); * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

Compared to the political variables, the results for socio-economic factors show relatively little influence. Financial deregulation, trade and the denominator of the dependent variable working age population show negative signs, consistent with the model for government consumption. But whereas the coefficients for trade and for the denominator of the dependent variable are statistically significant in model 1 and the coefficient for financial deregulation is not, the situation here is just reversed. Openness is strongly related to government employment, but trade and working age population cannot be said to have any effect. Only the relative price of public goods shows the same positive effect on changes in government employment as on government consumption. Old age population, unemployment, and economic development have reversed signs, but only the latter has a substantial and statistically significant negative effect. An interpretation that somewhat balances the contradictory findings for income could be that economic development leads indeed to more publicly provided goods, but that their provision does not necessarily have to occur through public employees. But why economic development should have a negative effect on government employment remains in question. In comparison to the model on government consumption, it is also interesting to note the high autoregression coefficient of the lagged dependent variable. The dynamics of government employment are much stickier than changes in public consumption. Change brought into motion in earlier years seems harder to reverse in the case of public employment.

7.2.1 Temporal Stability

Regarding the stability of the coefficient estimates over time (see models 5 and 6 in table 7.4), the picture is just turned around as compared to the models on government consumption. The rather weak socioeconomic effects are highly unstable, whereas the strong political associations hold over time. Trade, unemployment, and working age population change their signs between the two periods but never reach any statistical significance level. The ambiguous negative effect of income was very strong for the sixties and seventies, but virtually vanished in the second period. The signs of the coefficients for financial deregulation, Baumol's disease, and old age population are stable over time, but while the latter two have a stronger positive effect in the second period, the effect of openness decreases and loses statistical significance. The consequences of an aging population with the need for more service-intensive public health and elderly care seemed to have realized only in the second period. The slightly higher coefficient for the relative

price of public goods indicates that if there were really productivity gains in the eighties and nineties, they did not result in less public employment. The strong negative effect of financial openness in the first period and its disappearance in the eighties and nineties is not in accord with the efficiency hypothesis of globalization theory, similar to the decreasing effect of trade in the models on government consumption. Finally, the strong increase of the coefficient for the lagged change in government employment is an indication that the dependent variable varied much less in the period of retrenchment in contrast to the first period. The rather low R-squared of 0.30 for the first period as compared to an R-square of 0.43 for the second supports this interpretation.

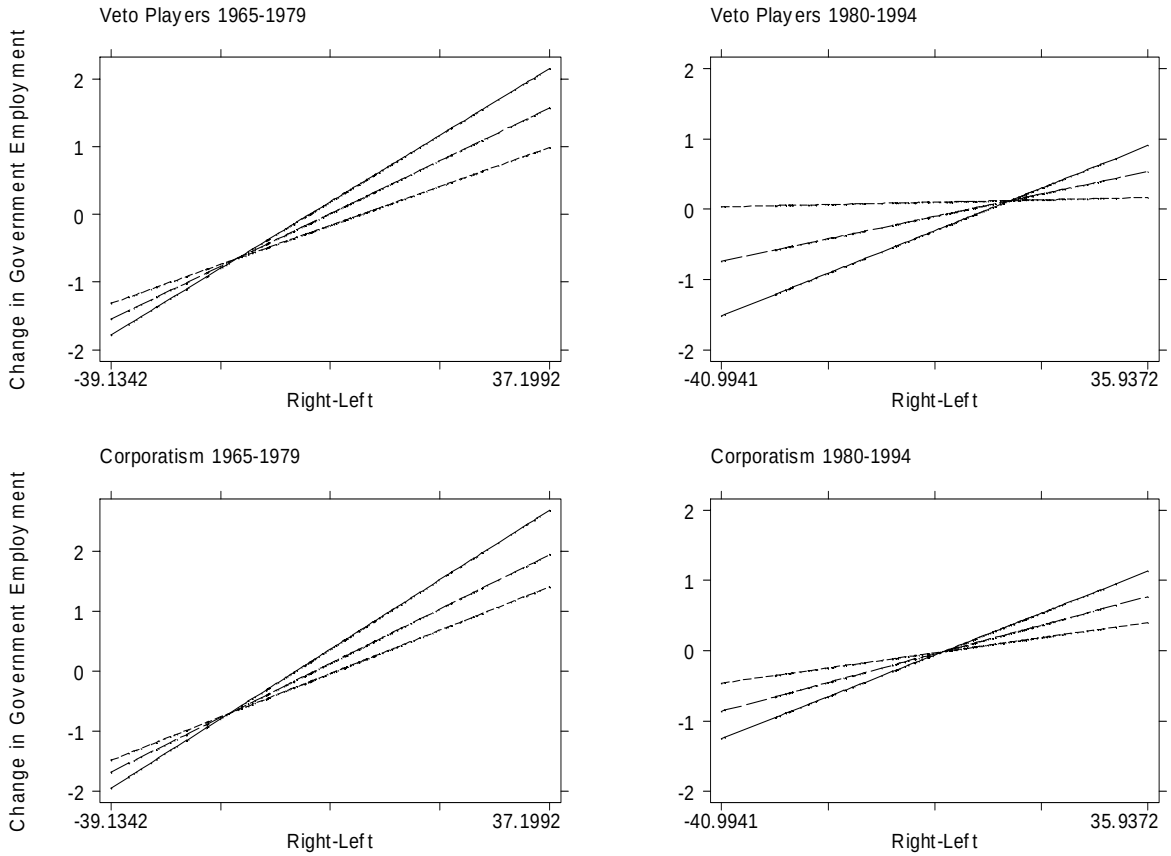
Turning now to the political variables, the findings from the base model are generally reproduced for the two sub-periods. Although the effect of ideology decreased markedly, it is still statistically significant and of substantial size for the second period. The larger effect of the interaction with veto players suggests that governing parties were even more dependent on the number of veto players in transforming their ideological position into policy outcomes in the eighties and nineties than in the earlier period. The interaction with corporatism stayed more or less the same, signifying that the combination of left governments and strong unions did not lose in importance for the achievement of leftist policies. The average effect of corporatism was strong and positively related to government employment during the first period, but disappeared in the second. The average effect of veto players was significant in both periods, but while it had a negative sign for the sixties and seventies, it turned positive for the eighties and nineties. It is questionable whether this turnaround can be given a substantial meaning.

7.2.2 Interaction Analysis

In this section, the interacting relationships of government ideology with corporatism and veto players are investigated in more detail. Tables 7.5 and 7.6 present the conditional effect of ideology for several levels of veto players and corporatism, respectively, figure 7.4 gives a graphical representation. With respect to veto players (see table 7.5), the ideology effect was largest in the case of single party governments facing no counteracting institutional actors, and diminished as the number of veto players grew. Although both periods were characterized by this relationship, the role of veto players was even stronger in the eighties and nineties as can be inferred from the larger differences in the conditional

coefficients[37] for the second period. In the first period, the ideology effect was still visible even when the leading government party faced two other veto players, whereas in the latter period, two other veto players were sufficient to nullify the relationship. This might be an indication that the resistance to ideological and probably especially leftist policies with regard to government employment grew stronger in the context of a larger public debt, higher unemployment, less economic growth, and growing globalization.

Figure 7.4: Simple Regression Lines of Civilian Government Employment on Ideology as a Function of Veto Players and Corporatism, Sub-Periods



——— Simple slope on ideology at one veto player and maximum corporatism, respectively

— — — Simple slope on ideology at two veto players and high corporatism, respectively

– – – – – Simple slope on ideology at three veto players and mean corporatism, respectively

Notes: Conditional effects plot according to Kohler and Kreuter (2001: 224-226); the interacting variable not used in the calculation of the conditional slopes and all other independent variables are set to their means.

[37] The coefficients in table 7.5 and 7.6 are also based on centered but unstandardized variables for the reasons outlined in section 7.1.2. Unstandardized regression results for the complete models are given in table A10.

Table 7.5: Ideology Effect on Civilian Government Employment Conditional on Veto Players, Sub-Periods

	1 Veto Player	2 Veto Players	Mean of Veto Players	3 Veto Players	4 Veto Players	5 Veto Players
1965-1979	0.052*** (3.42)	0.041*** (3.30)	0.038*** (3.13)	0.030** (2.42)	0.020 (1.28)	0.009 (0.45)
1980-1994	0.031** (2.15)	0.017** (2.09)	0.011* (1.61)	0.002 (0.20)	-0.013 (0.84)	-0.028 (1.17)

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients are based on unstandardized variables; estimates are based on models A5 and A6 in table A10; Minimum Corporatism = 0.06 (UK), Low = 0.285, Mean = 0.55 (CH), High = 0.735 (DK/BEL), Maximum = 0.96 (AT, NOR, SWE); * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

Table 7.6: Ideology Effect on Civilian Government Employment Conditional on Corporatism, Sub-Periods

	Minimum Corporatism	Low Corporatism	Mean of Corporatism	High Corporatism	Maximum Corporatism
1965-1979	0.008 (0.31)	0.021 (1.18)	0.038*** (3.13)	0.047*** (3.79)	0.061*** (3.52)
1980-1994	-0.008 (0.72)	0.002 (0.21)	0.011* (1.61)	0.021*** (2.51)	0.031*** (2.66)

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients are based on unstandardized variables; estimates are based on models A5 and A6 in table A10; Minimum Corporatism = 0.06 (UK), Low = 0.285, Mean = 0.55 (CH), High = 0.735 (DK/BEL), Maximum = 0.96 (AT, NOR, SWE); * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

In fact, the increased interaction effect in combination with the decreased average ideology effect in the second period even turns the sign of the ideology coefficient when the number of veto players is larger than three. Since the multiplicative term forces the interaction to be linear, none of these simple slopes is statistically significant, and there are no theoretical reasons to believe that a very high number of veto players turns the direction of the ideology effect, these negative coefficients cannot be treated as substantially meaningful. Consequently, the illustrations in figure 7.4 take only those conditional effects into account

which are statistically distinguishable from zero[38]. This also holds for the corporatist interaction effects discussed in the next paragraph.

As can be inferred from table 7.6, corporatism had just the reverse effect. The more corporatist an interest group system, the stronger was the ideology effect. The levels of corporatism at which the ideology effect was calculated were chosen along two criteria. The first was that the different levels should have some real world expression. Thus maximum corporatism refers roughly to the average corporatism value of Sweden, Norway, and Austria (0.96 of a scale from 0.01 to 0.99) for the whole period. Similarly, high corporatism reflects approximately the average score of Denmark and Belgium (0.735), mean corporatism the average score for Switzerland (0.55), and minimum corporatism the average score for the United Kingdom (0.06). Only low corporatism (0.275) is not related to any average country score and was chosen by the second criteria that distances between the different levels should be about the same size. Nevertheless, the value is not unrealistic since the scores for Australia during the sixties and first half of the seventies were very close to it. For both periods, the ideology effect is strongest in maximum corporatist countries and fades away in countries that can be characterized as low corporatist.

As mentioned earlier, this finding is probably driven by the combination of left governments and strong unions. There is no rationale to expect that right governments are better able to cut back government employment when faced by corporatist interest groups, just the contrary. Furthermore, in the case of government employment, the corporatism interaction reflects probably not only the influence of unions through policy making channels, but also their role as interest representatives of public employees. The more so since public employees are highly organized in terms of union membership (Garrett, 1998: 148). Overall, the combined power of unions and left governments was very successful in promoting egalitarian policies through a larger public sector in the first period. This effect declined somewhat in the second period, but was still substantially large.

[38] An exception is the conditional relationship at three veto players, which is given for comparative reasons, although it is statistically not significant in the second period.

So far, the discussion centered on ideology effects conditional on either corporatism or veto players. Figure 7.5 presents counterfactual estimates of the ideology effect for different configurations of veto players and corporatism. As in table 7.2, the figures in the cells represent the difference in the predicted values when the ideology score changes from the tenth to the ninetieth percentile. This time they are not given for different levels of one interacting variable, but for different combinations of levels of both interacting variables. Only the region where the conditional ideology effect stays significant is considered, and to keep complexity low, only the minimum and maximum level of the interacting variables for this region. Overall then, there are four combinations for differences in predicted values given for each period.

For example, the value of 3.58 in the upper left cell for the first period means that left government parties were associated with a change in government employment 3.58 percentage points higher than right government parties when they did not face any other veto players and were backed by strong unions. For both periods, the ideology effect was highest in these cases and lowest at mean corporatism and three veto players, as can be inferred from the smallest values in the lower right cells. Thus, the worst situations left governments could face were characterized by low corporatism and many veto players.

Figure 7.5: Counterfactual Estimates for Ideology Effect on Changes in Civilian Government Employment under Different Constellations of Veto Players and Corporatism, Sub-Periods.

1965-1979	1 Veto Player	3 Veto Players
Maximum Corporatism	3.58	2.56
Mean of Corporatism	2.48	1.46

1980-1994	1 Veto Player	3 Veto Players
Maximum Corporatism	2.41	1.01
Mean of Corporatism	1.48	0.08

Notes: Figures in cells give the difference in the predicted values that results from a hypothetical change in the ideology variable from its 10th (far right) to its 90th (far left) percentile at different levels of veto players and corporatism, and when all other independent variables are set to their means; estimates are based on models A5 and A6 in table A10.

Starting in the upper left cell, an increase in veto players or a decrease in corporatism led to a reduction of the ideology effect as the smaller estimates in the upper right and lower left cell, respectively, signify. Whereas the impact of more veto players and less corporatism was approximately the same in the first period, the increased constraining effect of veto players in the eighties and nineties is illustrated by the stronger decrease in the counterfactual estimate when one moves from the upper left to the upper right cell, as contrasted to a move from the upper to the lower left cell. Overall, it is also obvious that the general influence of ideology decreased over time. In the next section, it is explored whether these findings are more reliable than those on changes in government consumption expenditure.

7.2.3 Model Assumptions and Robustness

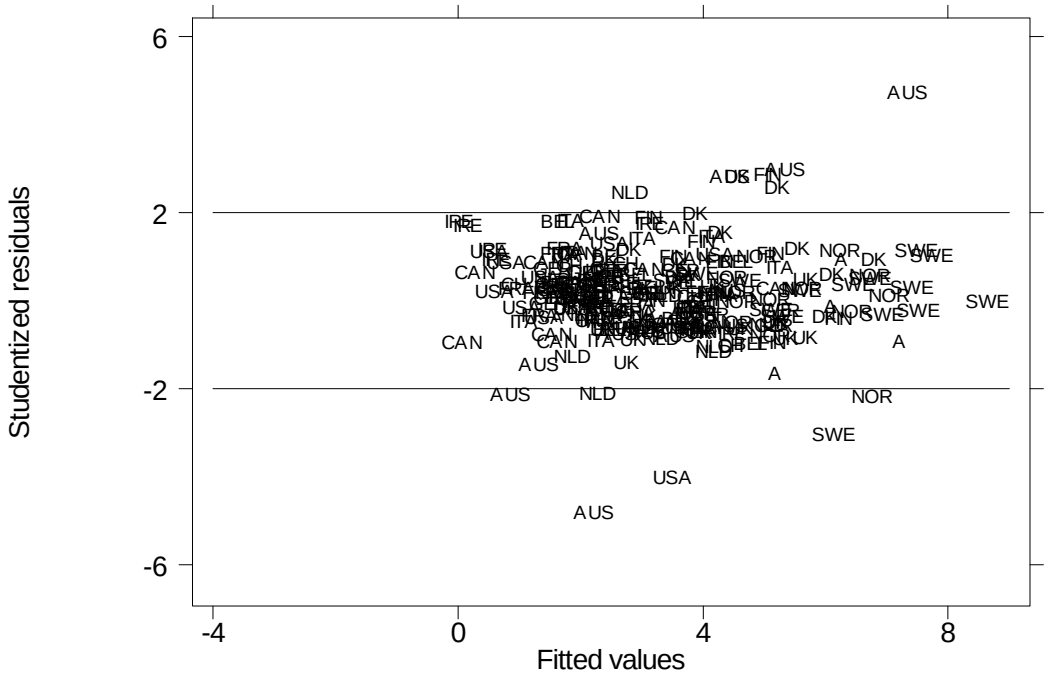
Turning to the model assumptions first, there were no serious violations detectable. Employing the same regression diagnostics as described in section 7.1.3, there were no signs of nonlinear relationships between the dependent and any of the independent variables or of multicollinearity in either period [39]. Autocorrelation of the residuals was not an issue for the base model and the first period model. But like in the second period model for government consumption, the null of no serial correlation is rejected in the employment model for the eighties and nineties (see ρ in table 7.1). Again, the model was recalculated with an additional dependent variable lagged two years where autocorrelation could not be detected anymore[40]. Here too, the coefficients did not change substantially and it was decided to keep the initial model specification.

Concerning the general fit, the model for the whole period and the eighties and nineties show reasonable R-squared statistics. The model for the sixties and seventies is more problematic. Figures 7.6 and 7.7 show the plot of the fitted values versus the residuals for the two periods. The first period is characterized by a generally higher variation in the residuals and several large outliers. As outlined in section 7.1.3, in the absence of any clear hints that outliers are due to measurement errors the usual cures applied for random samples are not applicable.

[39] Highest variance inflation factor was 5.92.

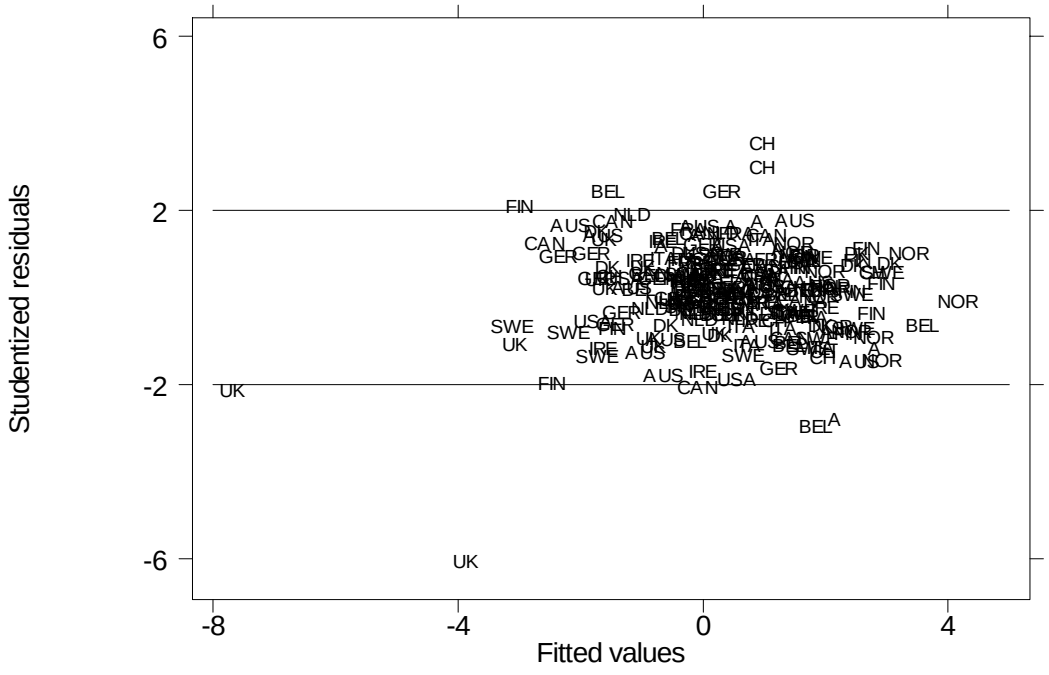
[40] See regression results for model A8 in table A11.

Figure 7.6: Residual vs. Fitted Plot for Civilian Government Employment, 1965-1979



Note: Residual vs. fitted plot according to Schnell (1994: 231); for country codes see table A1; studentized residuals with absolute values higher than 2 are considered as "large" (Schnell, 1994: 222).

Figure 7.7: Residual vs. Fitted Plot for Civilian Government Employment, 1980-1994



Note: Residual vs. fitted plot according to Schnell (1994: 231); for country codes see table A1; studentized residuals with absolute values higher than 2 are considered as "large" (Schnell, 1994: 222).

Table 7.7: Results of Jackknife Analysis for Civilian Government Employment, Sub-Periods

	Model 5 1965-1979	Jackknife Range lower	upper	Model 6 1980-1994	Jackknife Range lower	upper
IDEOLOGY $_{t-1}$	0.219***	0.149***	0.311***	0.086*	0.046	0.135**
	(3.13)	(2.50)	(3.77)	(1.61)	(0.89)	(2.24)
		AUS	UK		UK	USA
CORPORATISM $_{t-1}$	0.120**	0.007	0.195**	0.006	-0.049	0.041
	(1.75)	(0.08)	(2.20)	(0.10)	(0.66)	(0.61)
		UK	A		GER	SWE
VETO PLAYERS $_{t-1}$	-0.081*	-0.129**	-0.026	0.090**	0.033	0.131***
	(1.39)	(1.89)	(0.38)	(1.76)	(0.59)	(2.64)
		A	NLD		UK	GER
IDEOLOGY x CORPORATISM $_{t-1}$	0.110*	0.018	0.163***	0.114**	0.034	0.176***
	(1.55)	(0.21)	(2.58)	(2.17)	(0.49)	(3.25)
		UK	AUS		USA	UK
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.080**	-0.136**	-0.037	-0.140**	-0.184**	-0.013
	(1.74)	(2.26)	(0.67)	(1.66)	(2.00)	(0.17)
		IRE	NLD		SWE	UK
OPENNESS $_{t-2}$	-0.111**	-0.192***	-0.037	-0.016	-0.066	0.002
	(1.91)	(2.60)	(0.53)	(0.25)	(1.21)	(0.03)
		UK	FIN		UK	NLD
Δ TRADE $_{t-1}$	-0.093	-0.136*	-0.038	0.064	0.042	0.091
	(0.92)	(1.34)	(0.35)	(0.91)	(0.58)	(1.28)
		NLD	DK		SWE	ITA
Δ INCOME $_{t-1}$	-0.185**	-0.242***	-0.144**	0.017	-0.009	0.054
	(2.34)	(2.76)	(2.08)	(0.22)	(0.10)	(0.67)
		IRE	AUS		USA	AUS
Δ BAUMOL	0.055	-0.019	0.091*	0.070*	0.054	0.111**
	(0.86)	(0.31)	(1.47)	(1.42)	(1.11)	(1.85)
		AUS	NLD		BEL	NOR
Δ UNEMPLOYMENT	0.054	0.015	0.128	-0.093	-0.123*	-0.019
	(0.70)	(0.21)	(1.47)	(1.18)	(1.53)	(0.22)
		AUS	USA		AUS	FIN
Δ ELDERLY	0.022	-0.054	0.084	0.087**	0.047	0.113**
	(0.27)	(0.62)	(0.80)	(1.74)	(0.82)	(1.74)
		FIN	IRE		GER	ITA
Δ WORKING AGE POPULATION	-0.054	-0.117*	0.016	0.026	-0.009	0.064
	(0.90)	(1.57)	(0.21)	(0.45)	(0.15)	(1.07)
		FIN	ITA		UK	CH
Δ EMPLOYMENT $_{t-1}$	0.070	0.012	0.108	0.492***	0.343***	0.536***
	(0.63)	(0.10)	(1.06)	(5.88)	(4.44)	(6.46)
		DK	AUS		UK	BEL
R^2	0.30	0.26	0.33	0.43	0.35	0.47
		SWE	IRE		UK	A/BEL

Notes: Entries for upper and lower bounds are the most extreme coefficients obtained from repeated regressions where one country was excluded after another from the sample (see Kittel & Obinger, 2000: 33); country codes (see table A1) refer to the excluded country; t statistics in parentheses based on panel-corrected standard errors; coefficients based on standardized variables; constant and T-1 time-dummies included but not shown; Δ percentage change (difference for unemployment) * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests);.

However, to derive some information about the robustness of the results, a jackknife analysis was performed. Table 7.7 presents the results for the two sub-period models. It turns out that both models are highly robust. Neither of the statistically significant effects, be it political or economic, turns its sign due to the exclusion of a single country. Furthermore, the exclusion of Australia from the first period model, which had the two largest residuals, even strengthens the link between ideology and government employment as well as the interaction effect with corporatism.

Excluding the United Kingdom from the second period model, which had by far the largest residual in this period, decreases the ideology effect and the interaction effect with veto players somewhat but both keep their signs. Furthermore, the interaction coefficient for corporatism is actually larger when the United Kingdom is excluded. Thus, there is hardly any distortion by the one outlying British observation. In fact, the model loses considerably in predictive power when the United Kingdom is excluded as indicated by the decrease in R-squared of 8 %. Overall, there seem no major problems with the models on changes in government employment which would qualify any results presented earlier.

7.3 Summary

This chapter explored the determinants of changes in public sector size using two different indicators, civilian government consumption expenditure and civilian government employment. The general model developed in the previous chapter was applied to each dependent variable, first for the whole period and subsequently for two sub-periods in order to investigate the stability of the estimates. It turned out that several political as well as socio-economic effects cannot be treated as constant over time. Consequently, the latter discussion centered on the results for the sub-period models.

Comparing changes in consumption expenditure with changes in employment, the latter were mainly associated with political variables, while the former were mainly related to socio-demographic and economic factors. The effect of ideology decreased over time with respect to both dependent variables, but whereas it was still one of the main factors related to government employment in the eighties and nineties, it disappeared in the second period model on government consumption.

Regarding conditional relationships, the results for government consumption showed a negative effect of the veto player interaction in the sixties and seventies, as hypothesized by veto players theory. But analysis of the robustness of the model showed that the effect strongly depended on the inclusion of one country (Ireland) in the analysis, whose observations were plagued by several outliers. Overall, besides the positive ideology effect in the first period, no firm conclusions about political factors can be drawn from the results of the government consumption models.

The situation is much clearer when the government employment models are considered. The interaction term with corporatism consistently showed a strong and positive association, rejecting the hypothesis of a constraining effect of corporatism and supporting the social-democratic corporatism thesis. The veto players theory is clearly corroborated with regard to government employment, the corresponding interaction term being strong and negatively related to the dependent variable during both periods and actually increasing for the second. In addition, the jackknife analysis showed that these results are robust across different country samples. Hence, the conclusion that change in government employment is to a large extent explained by the ideological position of the leading government party and its political context conditions seems to rest on firm foundations.

8 Discussion and Conclusion

This analysis set out to investigate the determinants of government size. More precisely, it aimed at identifying the impact of government ideology on changes in public sector size. It was hypothesized that the influence of government ideology crucially depends on political-institutional factors and the structure of the interest group system. Veto players as well as corporatist interest groups were supposed to hinder government parties in realizing their preferred policy outcomes. Two government statistics were proposed as being most appropriate indicators for the economic activity of the state, government consumption expenditure and government employment. A statistical analysis was performed on each of these measures, yielding quite different results. This chapter takes up these findings, puts forward possible explanations for the differing results, and closes with some cautious conclusions.

The findings from the analysis in the last chapter show some evidence in favor of the partisan hypothesis. Both government indicators were substantially associated with government ideology during the second half of the sixties and the seventies. But the influence of ideology decreased for the eighties and early nineties, leading in the model on government consumption even to a loss of statistical significance of the ideology coefficient. Hence, growing unemployment, a slowdown of economic growth, rising public debt, and the competitive pressures brought about by the increasing international economic and financial integration of markets might indeed have changed the beliefs of left parties about the appropriateness and effectiveness of government involvement in the economy. Parties are multi-goal organizations (Schmidt, 2002: 168), besides policy pursuit their major goal is office-seeking. The worsening economic and financial situation might simply have forced left parties to revise their traditional policy strategies in order to enhance their chances for reelection.

Another issue regarding the findings for government ideology concerns the differences in its explanatory power for the two public sector indicators. The ideology variable is far stronger related to government employment than to consumption expenditure. As noted earlier, there are some reasons to expect that not only left-leaning parties favored increases in public consumption, but also parties of a Christian democratic type. Consumption

expenditure mainly constitutes welfare spending in kind, for example on education, housing, health, elderly, and day care. It is well known that Christian democratic parties are also committed to providing for the welfare of citizens. But the difference lies in the means to do so.

According to Huber and Stephens (2000), Christian democratic governments are funding welfare services to a similar extent as left-wing governments, but in contrast to social-democratic cabinets they do not promote the state delivery of these services. Part of Christian democratic social thought is the principle of subsidiarity, the reliance on the smallest possible group that can perform a certain social function (Huber & Stephens, 2000: 326). Therefore, Christian democratic parties have a preference for the delivery of social services by nongovernmental entities like non-profit organizations, cooperatives, private businesses, and particularly the church and church-related organizations. In contrast, social-democratic parties promote a direct public provision of these goods and services, because they believe that only state delivery can assure equal access and equal quality for all citizens. As Huber and Stephens (2000: 335) note, "… it is with regard to government delivery of services … that the social democratic welfare state is most distinctive from the Christian democratic welfare state."

Hence, the differing findings for government ideology could be explained by the characteristics of the variable. It is an indicator for the general ideological position of parties along the classic left-right scale, not a direct indicator of their preferences regarding public sector size. Since Christian democratic parties are positioned quite to the right of this scale but actually also favor high spending on welfare goods and services, it is not surprising that the ideology variable is less related to government consumption. In contrast, the public delivery of these goods and services seems to be a core left-wing policy, explaining the high association of ideology with government employment.

Turning to the results for the interaction effects, one conclusion is clear. The hypothesis about a constraining effect of corporatism on government ideology is clearly rejected. In fact, there is considerable evidence that corporatism actually enhanced the possibility for partisan policies. In all models, the interaction term of government ideology and corporatism is positively signed and in the regressions for government employment the

effect is large and statistically significant. At least with regard to government employment, these findings are interpreted as supporting the alternative hypothesis of social-democratic corporatism, that the combination of left governments and strong trade unions furthered the realization of traditional leftist policies. But whether organized labor only enhanced the possibility for policy pursuit by left parties is questionable.

Especially in times of retrenchment of government size, the positive interaction could also be interpreted as strong unions hindering left governments in changing their policy objectives. Unions represent at least a large part of the core electorate of social-democratic and labor parties, thus left governments depend strongly on their support in elections. Additionally, left parties and unions are often characterized by interlocking memberships, which should lead to more responsiveness to union claims on the side of left-wing governments, in order to keep up support of their own party base. From this point of view, organizationally strong unions act as "watch-dogs" of "their" government. Left governments might be under pressure to put through ideologically more extreme policies than they actually preferred in order to appeal to a wider electorate.

The findings for the interaction of veto players with ideology are more ambiguous. In the government employment models the interaction term is consistently large, statistically significant, and shows a negative sign in accordance with veto players theory. However, the statistically significant and negatively signed interaction in the first period model for government consumption turned out to be very sensitive to the country coverage of the sample, and the effect in the second period model was negligible.

Looking at the overall picture, it seems that the constraining effect of veto players is not independent of the specific policy envisaged. If public employment is one of the core policies distinguishing left from other pro-welfare state parties with respect to public sector size, it is not surprising to see a large constraining effect of veto players. Substantial changes in public employment exhibit a large symbolic character for parties on both side of the left-right divide. Thus, resistance to such changes should be more pronounced than in the case of public consumption, which is used by parties of different ideological stances to foster the welfare of citizens. In addition, higher public employment often goes hand in hand or is even a cause of institutional changes, like the establishment of new state

agencies or public social service organizations. Since such changes are hard to reverse, opposition to them should be stronger. A similar argument can be made about the interaction effect with corporatism. Policies with high symbolic content as well as strong institutional implications might be easier to put through by left governments if supported by strong unions, but it will also make cut backs much harder when government subsequently changes its mind.

To sum up, the analysis showed that public sector size is indeed to some extent dependent on government ideology, but that this influence decreased over time. Furthermore, its impact was much stronger on government employment than on government consumption expenditure, indicating that at least in the case of government size, it is means rather than results where ideology shows its largest impact. The same holds for the interaction effects with corporatism and veto players. Whereas no clear mediating effect in the case of public consumption expenditure was detectable, the number of veto players decreased and the level of corporatism increased the impact of government ideology on public employment. In accordance with Huber and Stephens (2000), it was argued that the state delivery of welfare goods and services, as indicated by public employment, is a core policy of left parties, whereas the funding of these goods and services is also increased by more centrist parties. A tentative conclusion from the analyses is that structural context factors like political institutions and the organizational power of interest groups are most important where policies are ideologically highly controversial, as in the case of public employment.

Appendices

Additional Tables

Table A1: List of Countries

No.	Country	Country Code
1	Australia	AUS
2	Austria	A
3	Belgium	BEL
4	Canada	CAN
5	Denmark	DK
6	Finland	FIN
7	France	FRA
8	Germany	GER
9	Ireland	IRE
10	Italy	ITA
11	Netherlands	NLD
12	Norway	NOR
13	Sweden	SWE
14	Switzerland	CH
15	United Kingdom	UK
16	United States	USA

Table A2: Descriptive Statistics on Civilian Government Consumption by Country, 1965-1994

	1965	Change in % 1965-1980	1980	Change in % 1980-1994	1994	Change in % 1965-1994
Australia	8.2	76.0	14.3	4.6	15.0	84.0
Austria	12.2	37.4	16.7	8.4	18.1	48.9
Belgium	9.6	51.9	14.6	-10.9	13.0	35.4
Canada	11.9	49.9	17.8	4.0	18.5	55.8
Denmark	13.5	79.9	24.3	-1.5	23.9	77.2
Finland	12.0	38.8	16.6	23.4	20.5	71.2
France	7.9	42.0	11.2	43.9	16.1	104.3
Germany	10.8	55.4	16.8	7.0	18.0	66.3
Ireland	11.8	21.8	14.4	0.9	14.5	22.8
Italy	10.4	36.2	14.2	6.8	15.2	45.5
Netherlands	11.0	34.7	14.8	-17.9	12.2	10.6
Norway	11.3	40.5	15.9	18.1	18.7	65.9
Sweden	13.7	88.6	25.8	-4.0	24.7	81.0
Switzerland	7.9	35.4	10.7	19.3	12.7	61.6
United Kingdom	10.9	49.9	16.4	11.7	18.3	67.5
United States	9.6	35.4	13.0	-8.6	11.8	23.7
Mean	10.79	48.37	16.09	6.56	16.96	57.61
Standard Deviation	1.79	18.51	4.01	14.96	3.90	25.22
Range	5.77	66.85	15.09	61.79	12.89	93.73
Coeff. of Variation	0.17	0.38	0.25	2.28	0.23	0.44

Source: Cusack (for source description see table A6).
Note: All statistics based on original (unrounded) data.

Table A3: Descriptive Statistics on Civilian Government Employment by Country, 1965-1994

	1965	Change in % 1965-1980	1980	Change in % 1980-1994	1994	Change in % 1965-1994
Australia	6.7	48.3	9.9	-0.0	9.9	48.2
Austria	7.1	48.9	10.6	26.1	13.4	87.8
Belgium	5.9	60.8	9.5	0.4	9.5	61.3
Canada	8.7	47.5	12.9	9.2	14.0	61.0
Denmark	7.8	152.8	19.8	6.5	21.1	169.1
Finland	5.6	99.1	11.2	18.3	13.2	135.5
France	9.0	27.3	11.5	16.0	13.4	47.6
Germany	5.7	48.1	8.5	-3.1	8.2	43.5
Ireland	5.7	52.8	8.7	-1.8	8.6	50.1
Italy	5.0	52.0	7.6	10.2	8.4	67.5
Netherlands	5.0	30.3	6.5	-2.5	6.3	27.0
Norway	8.3	93.3	16.1	32.2	21.3	155.6
Sweden	9.2	151.6	23.2	-5.8	21.8	137.0
Switzerland	5.0	52.4	7.6	14.6	8.7	74.6
United Kingdom	10.1	38.1	13.9	-32.2	9.4	-6.3
United States	7.3	29.8	9.4	9.0	10.3	41.5
Mean	7.01	64.55	11.68	6.07	12.34	75.07
Standard Deviation	1.68	39.48	4.60	14.91	5.00	49.38
Range	5.10	125.48	16.67	64.40	15.48	175.46
Coeff. of Variation	0.24	0.61	0.39	2.46	0.40	0.66

Source: Cusack (for source description see table A6).
Note: All statistics based on original (unrounded) data.

Table A4: Left-Right Scale Based on Manifesto Estimates

Right emphases: sum of %s for		Left emphases: sum of %s for
Military: positive		Decolonization
Freedom, human rights		Military: negative
Constitutionalism: positive		Peace
Effective authority		Internationalism: positive
Free enterprise		Democracy
Economic incentives		Regulate capitalism
Protectionism: negative	minus	Economic planning
Economic orthodoxy		Protectionism: positive
Social Services limitation		Controlled economy
National way of life: positive		Nationalization
Traditional morality: positive		Social Services: expansion
Law and order		Education: expansion
Social harmony		Labor groups: positive

Source: Budge & Klingemann. (2001: 22)

Table A5: Variables

Variable	Description	Calculations	Original Variable Name and Source
EXPENDITURE	General government civilian consumption expenditure as a share of GDP	Percentage change	GGCIVGC Cusack
EMPLOYMENT	General government civilian employment as a share of working age population	Percentage change	CGEWAP Cusack
IDEOLOGOY	Three election moving average score on right-left scale for party of prime minister, right-left scale according to Budge and Klingemann (2001)	Year average of (MA3L_R*PTYPM) weighted by number of days in office, rescaled to right-left, lag 1	MA3L_R, PTYPM McDonald
CORPORATISM	Composite index of corporatism according to Hicks and Kenworthy (1998)	Lag 1	hkcorp Kenworthy
VETO PLAYERS	Number of veto players according to Tsebelis (1999, 2002)	Data for USA from Franzese, lag 1	VPS/NoP Tsebelis/Franzese
OPENNESS	Deregulation of financial markets according to Quinn (1997)	Lag 2	OPENNESS Armingeon et. al.
TRADE	Sum of exports and imports as a share of GDP	Lag 1, percentage change	OPENX Franzese
INCOME	Real GDP per capita	Lag 1, percentage change	RGDPCX Franzese[6]
BAUMOL	Public consumption deflator divided by GDP deflator	PCG/PGDP, percentage change	PCG, PGDP OECD
UNEMPLOYMENT	Standardized unemployment rate	Difference	UE Franzese
ELDERLY	Share of population above 64	Percentage change	ELDERLY Armingeon et. al.
GDP	Gross Domestic Product	Percentage change	GDPGR Armingeon et. al.
WORKING AGE POPULATION	Share of population above 14 and under 65	1-(Pop65o+Pop14u), percentage change	Pop65o, Pop14u Franzese

Note: For details on data sources see table A6.

Table A6: ..... Data Sources

Cusack, Thomas R.: Public Employment Data Set and General Government Spending and Revenues Data Set. Wissenschaftszentrum für Sozialforschung, Berlin. http://www.wz-berlin.de/ag/ism/staff/cusack_data_sets.en.htm#data (23.10.2002)

McDonald, Michael: Parties in Parliament and Government, 1950-1995. Department of Political Science, Binghamton University. http://www.binghamton.edu/polsci/research/mcdonalddata.htm (02.01.2002)

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Armingeon, Klaus, Michelle Beyeler, and Sarah Menegale: Comparative Political Data Set 1960-2001. Institut für Politikwissenschaft, Universität Bern. http://www.ipw.unibe.ch/mitarbeiter/armingeon/default.asp?inhalt=CPD_Set.htm (27.11.2002)

Franzese, Robert, Jr.: The Political Economy of Public Debt Data Base. Department of Political Science, University of Michigan, Ann Arbor. http://www-personal.umich.edu/~franzese/Publications.html (13.11.2002)

OECD: Economic Outlook. Electronic Edition in OECD Statistical Compendium ed. 02#2002. OECD, Paris. (09.01.2003)

Table A7: .....Correlation Matrix of Main Variables, 1965-1979

	Δ CONS	Δ EMPL	IDEO $_{t-1}$	CORP $_{t-1}$	VETO $_{t-1}$	IDEO x CORP $_{t-1}$	IDEO x VETO $_{t-1}$
Δ CONSUMPTION	1.0000						
Δ EMPLOYMENT	0.2510	1.0000					
IDEOLOGY $_{t-1}$	0.0886	0.2869	1.0000				
CORPORATISM $_{t-1}$	0.0885	0.2837	0.4282	1.0000			
VETO PLAYERS $_{t-1}$	0.0004	-0.0723	0.0159	0.2492	1.0000		
IDEOLOGY x CORPORATISM $_{t-1}$	0.0050	0.2259	0.2360	0.4056	-0.0310	1.0000	
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.0788	-0.1451	-0.0699	-0.0388	0.4723	0.0677	1.0000

Notes: Coefficients based on standardized variables; N = 240.

Table A8: Correlation Matrix of Main Variables, 1980-1994

	Δ CONS	Δ EMPL	IDEO $_{t-1}$	CORP $_{t-1}$	VETO $_{t-1}$	IDEO x CORP $_{t-1}$	IDEO x VETO $_{t-1}$
Δ CONSUMPTION	1.0000						
Δ EMPLOYMENT	0.1131	1.0000					
IDEOLOGY $_{t-1}$	0.0288	0.2737	1.0000				
CORPORATISM $_{t-1}$	-0.0044	0.2189	0.4946	1.0000			
VETO PLAYERS $_{t-1}$	0.0067	0.0945	-0.0564	0.2459	1.0000		
IDEOLOGY x CORPORATISM $_{t-1}$	0.0540	0.0116	-0.2863	-0.3564	-0.3608	1.0000	
IDEOLOGY x VETO PLAYERS $_{t-1}$	0.0862	-0.1551	-0.2154	-0.3928	-0.2129	0.4753	1.0000

Notes: Coefficients based on standardized variables; N = 240.

Table A9: ..... Unstandardized Regression Results for Civilian Government Consumption

	Model A1 1965-1994	Model A2 1965-1979	Model A3 1980-1994
IDEOLOGY $_{t-1}$	0.017* (1.57)	0.026** (1.88)	0.005 (0.34)
CORPORATISM $_{t-1}$	-0.759** (1.78)	-0.489 (0.82)	-0.671 (0.96)
VETO PLAYERS $_{t-1}$	0.058 (0.48)	0.123 (0.87)	-0.053 (0.25)
IDEOLOGY x CORPORATISM $_{t-1}$	0.040* (1.58)	0.028 (0.59)	0.025 (0.57)
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.004 (0.62)	-0.011* (1.34)	0.010 (0.84)
OPENNESS $_{t-2}$	-0.018 (0.19)	0.010 (0.10)	-0.174 (0.81)
Δ TRADE $_{t-1}$	-0.129*** (4.16)	-0.147*** (3.16)	-0.105*** (2.66)
Δ INCOME $_{t-1}$	0.214** (2.30)	0.127 (1.03)	0.282** (2.16)
Δ BAUMOL	0.769*** (8.11)	0.848*** (6.64)	0.630*** (4.39)
Δ UNEMPLOYMENT	0.660*** (2.51)	0.978** (2.19)	0.618** (1.70)
Δ ELDERLY	-0.380*** (2.36)	-0.533* (1.58)	-0.368** (1.76)
Δ GDP	-0.633*** (6.32)	-0.676*** (5.23)	-0.566*** (3.51)
Δ CONSUMPTION $_{t-1}$	0.023 (0.37)	-0.064 (0.65)	0.095 (0.84)
R^2	0.50	0.52	0.43
ρ	0.074 (0.74)	0.043 (0.33)	0.232* (1.44)
Observations	480	240	240
Countries	16	16	16

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients based on centered variables; constant and T-1 time-dummies included but not shown; ρ is the autocorrelation coefficient (see Wooldridge, 2002: 176); Δ percentage change (difference for unemployment); * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

Table A10: ..... Unstandardized Regression Results for Civilian Government Employment

	Model A4 1965-1994	Model A5 1965-1979	Model A6 1980-1994
IDEOLOGY $_{t-1}$	0.027*** (3.48)	0.038*** (3.13)	0.011* (1.61)
CORPORATISM $_{t-1}$	0.452 (1.23)	1.106** (1.75)	0.041 (0.10)
VETO PLAYERS $_{t-1}$	0.049 (0.58)	-0.185* (1.39)	0.165** (1.76)
IDEOLOGY x CORPORATISM $_{t-1}$	0.053*** (2.57)	0.059* (1.55)	0.043** (2.17)
IDEOLOGY x VETO PLAYERS $_{t-1}$	-0.013*** (2.90)	-0.011** (1.74)	-0.015** (1.66)
OPENNESS $_{t-2}$	-0.129** (2.30)	-0.156** (1.91)	-0.021 (0.25)
Δ TRADE $_{t-1}$	-0.016 (0.60)	-0.040 (0.92)	0.023 (0.91)
Δ INCOME $_{t-1}$	-0.106** (1.65)	-0.223*** (2.34)	0.016 (0.22)
Δ BAUMOL	0.108** (1.71)	0.084 (0.86)	0.094* (1.42)
Δ UNEMPLOYMENT	-0.161 (0.92)	0.250 (0.70)	-0.192 (1.18)
Δ ELDERLY	0.109 (1.04)	0.077 (0.27)	0.158** (1.74)
Δ WORKING AGE POPULATION	-0.297 (1.11)	-0.344 (0.90)	0.127 (0.45)
Δ EMPLOYMENT $_{t-1}$	0.215*** (3.30)	0.068 (0.63)	0.507*** (5.88)
R^2	0.46	0.30	0.43
ρ	0.212 (1.21)	0.316 (1.19)	-0.337*** (2.51)
Observations	480	240	240
Countries	16	16	16

Notes: t statistics in parentheses based on panel-corrected standard errors; coefficients based on centered variables; constant and T-1 time-dummies included but not shown; ρ is the autocorrelation coefficient (see Wooldridge, 2002: 176); Δ percentage change (difference for unemployment); * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

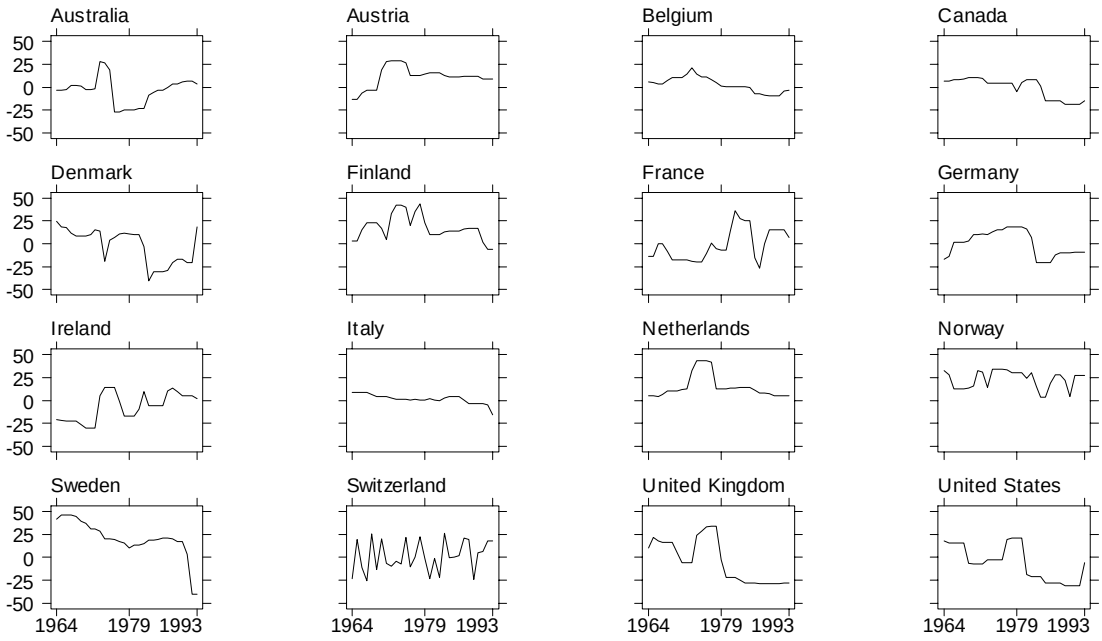
Table A11: Regression Results and Autocorrelation with Dependent Variable Lagged Two Years, 1980-1994

	Model 3: Δ Consumption Lag 1	Model A7: Δ Consumption Lag 1 and 2	Model 6: Δ Employment Lag 1	Model A8: Δ Employment Lag 1 and 2
IDEOLOGY $_{t-1}$	0.024 (0.34)	0.035 (0.51)	0.086* (1.61)	0.076* (1.46)
CORPORATISM $_{t-1}$	-0.058 (0.96)	-0.062 (1.00)	0.006 (0.10)	-0.015 (0.23)
VETO PLAYERS $_{t-1}$	-0.016 (0.25)	-0.019 (0.29)	0.090** (1.76)	0.081* (1.63)
IDEOLOGY x CORPORATISM $_{t-1}$	0.038 (0.57)	0.043 (0.64)	0.114** (2.17)	0.098** (1.74)
IDEOLOGY x VETO PLAYERS $_{t-1}$	0.051 (0.84)	0.062 (1.03)	-0.140** (1.66)	-0.151** (1.82)
OPENNESS $_{t-2}$	-0.074 (0.81)	-0.089 (0.97)	-0.016 (0.25)	0.001 (0.01)
Δ TRADE $_{t-1}$	-0.164*** (2.66)	-0.142*** (2.34)	0.064 (0.91)	0.063 (0.89)
Δ INCOME $_{t-1}$	0.173** (2.16)	0.146** (1.86)	0.017 (0.22)	0.017 (0.21)
Δ BAUMOL	0.269*** (4.39)	0.267*** (4.42)	0.070* (1.42)	0.074* (1.51)
Δ UNEMPLOYMENT	0.169** (1.70)	0.190** (1.91)	-0.093 (1.18)	-0.102* (1.33)
Δ ELDERLY	-0.116** (1.76)	-0.126** (1.96)	0.087** (1.74)	0.087** (1.76)
Δ DENOMINATOR	-0.296*** (3.51)	-0.293*** (3.54)	0.026 (0.45)	0.076 (0.62)
GOV $_{t-1}$	0.094 (0.84)	0.107 (0.94)	0.492*** (5.88)	0.435*** (4.61)
GOV $_{t-2}$		-0.135 (1.27)		0.143** (1.67)
R^2	0.43	0.45	0.43	0.44
ρ	0.232* (1.44)	0.147 (0.92)	-0.337*** (2.51)	-0.076 (0.23)

Notes: GOV is the dependent variable; DENOMATOR is the denominator of the dependent variable; 240 observations in each model; t statistics in parentheses based on panel-corrected standard errors; coefficients based on standardized variables; constant and T-1 time-dummies included but not shown; ρ is the autocorrelation coefficient (see Wooldridge, 2002: 176); Δ percentage change (difference for unemployment) * significant at 10%; ** significant at 5%; *** significant at 1% (one-tailed tests).

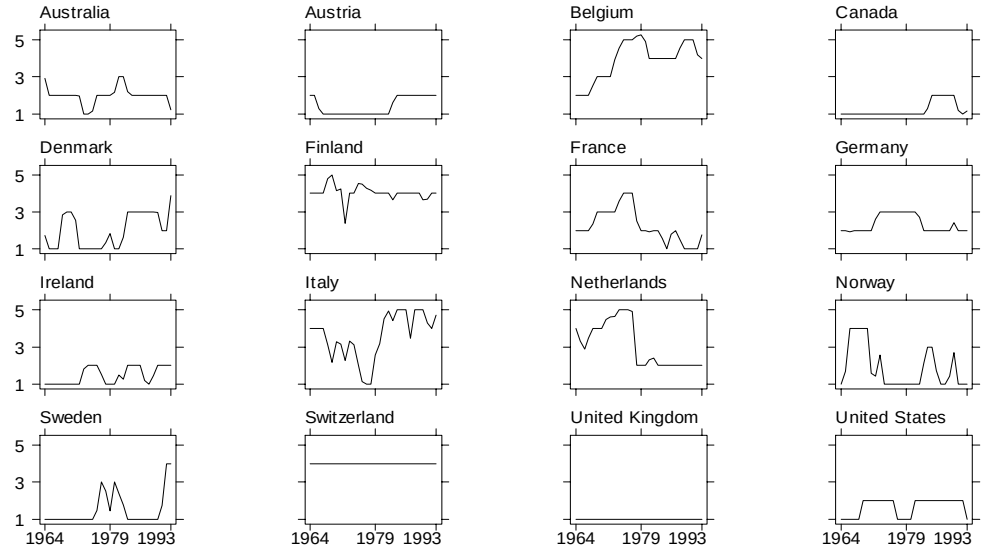
Additional Figures

Figure A1: Ideology by Country, 1964-1993



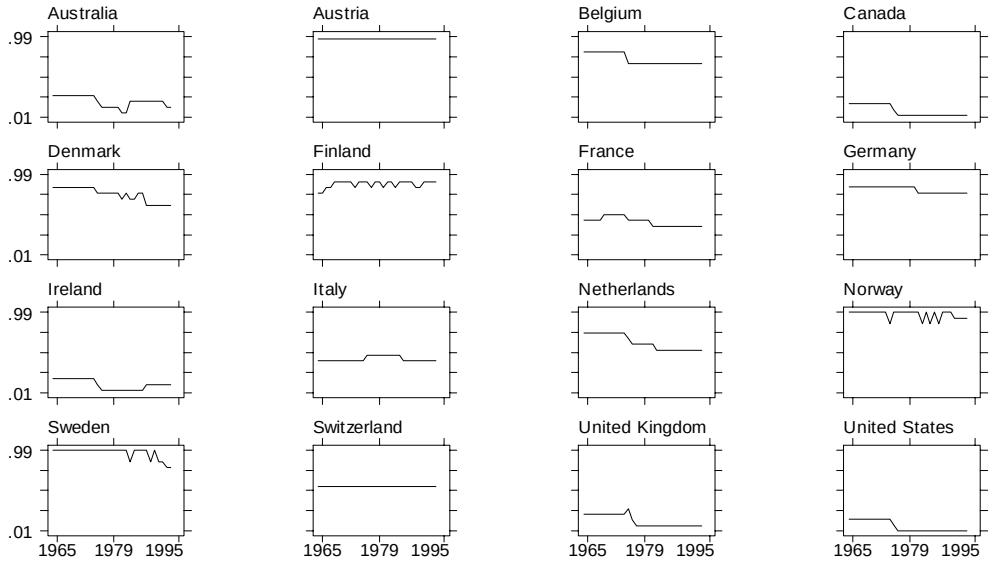
Source: McDonald (for source description see table A6).
Notes: Ideology is the three election moving average of the right-left scale (for its derivation see table A4; Budge & Klingemann, 2001) for the leading government party; high scores indicate left parties.

Figure A2: Veto Players by Country, 1964-1993



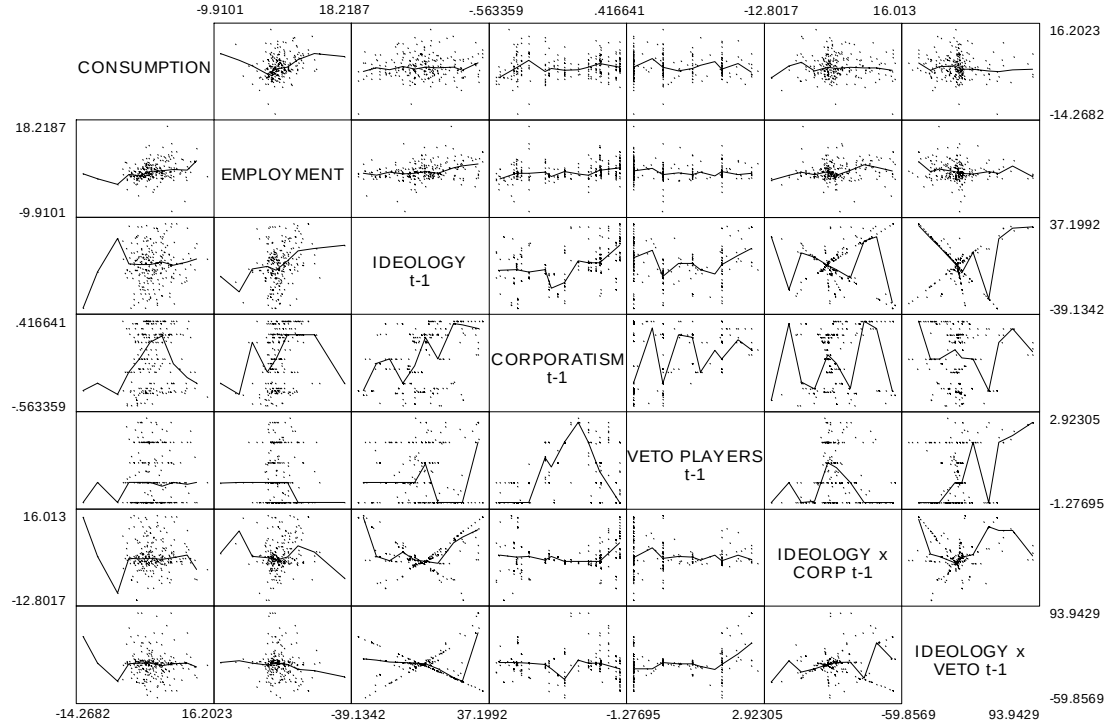
Source: Tsebelis/Franzese (for source description see table A6).
Note: Number of veto players according to Tsebelis (1999, 2002).

Figure A3: Corporatism by Country, 1964-1993



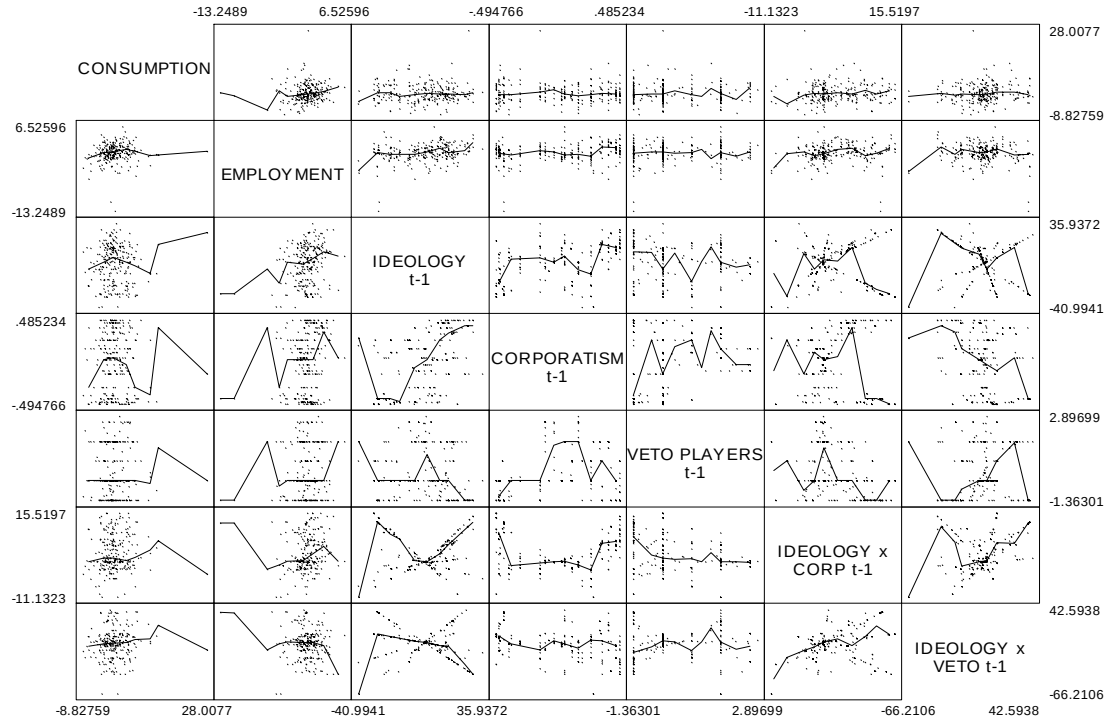
Source: Kenworthy (for source description see table A6).
Note: Composite Corporatism Indicator according to Hicks and Kenworthy (1998).

Figure A4: .....Scatterplot Matrix of Main Variables, 1965-1979



Note: Lines are median traces (ten bands), see Kohler and Kreuter (2001: 202).

Figure A5: Scatterplot Matrix of Main Variables: 1980-1994



Note: Lines are median traces (ten bands), see Kohler and Kreuter (2001: 202).

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