Beyond dichotomous explanations: Explaining constitutional control of the executive with fuzzy-sets

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Abstract. What are the main variations in the constitutional control of the executive in 45 parliamentary democracies and how can these differences be accounted for? Four competing hypotheses, based on dichotomies, explain the degree of this control by means of contrasting institutional settings: consensus democracy versus majoritarian democracy, presidentialism versus parliamentarism, thick versus thin constitutionalism and established versus new democracies. These hypotheses are tested with the help of fuzzy-sets that allow for varying degrees of membership that go beyond the presence/absence suggested by these dichotomies. The necessary and sufficient conditions for constitutional control are specified with the help of this new methodology. The fuzzy-set analysis shows that the degree of constitutional control can be explained solely by a specific *combination* of institutional conditions stemming from the four dichotomies, and not by one single dimension. This constellation remains hidden for the traditional correlational techniques like regression. Hence, the fuzzy-set logic presents a promising new tool for comparativists that can be used to reveal causalities.

Introduction

The increase in the number of democratic states during the 1990s has made modern democracy more varied. New democracies have adopted constitutions with a wide variety of executive-legislative relations. Central to these relations is constitutional control: the formal powers of parliaments and Heads of State to constrain executive behavior. Most of the existing studies on constitutional control are limited to Europe, the Organization for Economic Cooperation and Development (OECD) or a particular region in the world. The scope of this study is much broader because it seeks to capture the variations of constitutional control in a representative group of countries in which parliaments (whether fused with or separated from the executive) play a substantial role in the shaping of the policy-making process.

Since the democratization in Central and Eastern Europe and parts of Asia, a large number of new democracies have been established that are not always similar to established democracies. Four of the newly democratized states of former Soviet-controlled Central and Eastern Europe (Bulgaria,

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Hungary, Latvia and Slovakia) have installed parliamentary executives that are drawn from and responsible to the assembly. A further four (the Czech Republic, Estonia, Lithuania and Slovenia) have 'dual executives', partnerships between presidents and prime ministers with varying degrees of legislative and executive powers. The remaining 19 states in this region and ex-Soviet Central Asia have presidential executives. It is significant that the presidential, rather than the parliamentary, executive type has been adopted most often by newly democratized states, including most of the Southern European ones (Liebert & Cotta 1990; Derbyshire & Derbyshire 1996). An exception to this trend has been South Asia where, since 1988, Pakistan and Bangladesh have moved from presidential to parliamentary executives.

The aim of this article is to examine and explain the variations in constitutional control in a full population of democracies that fulfill certain criteria. In order to accomplish this, four well-known hypotheses are selected to explain these variations. These general hypotheses have in common that they seek to trace the main institutional differences between modern democracies. They take a central place in the political science literature, but as they contradict each other, it is interesting to know to what extent they are able to account for differences in constitutional control. Hence, the focus is on this causal chain of conditions and an outcome:

- The conditions are the structural factors that determine the executive-legislative relations.
- The outcome is the constitutional control of the executive by parliaments and Heads of State.

The analysis will ultimately tell us to what extent the diversity in constitutional control of modern democracies can be accounted for by dichotomous causal explanations.

I expect that the explanatory power of the four dichotomies is weak because they cannot capture the full complexity of modern constitutional control. A multitude of conditions is determining the type and degree of constitutional control so that one has to examine various conditions at the same time. Moreover, the degree to which structural factors are present should be studied by means of membership grades instead of mere presence or absence.

In order to enable such a multicausal explanation of constitutional control with partial memberships, the scores of the conditions and the outcome are transformed into so-called 'fuzzy-sets'. Fuzzy-sets are sets with elements whose membership grades can have any real value between '0' and '1'. They allow for varying degrees of membership that go far beyond the presence/absence indicated by dichotomies. Fuzzy-sets are used, among other

things, to determine the conjunctural causation (combinations of conditions) of an outcome. More specifically, fuzzy-set logic (Ragin 2000) is applied to discover causal patterns (i.e., necessary and sufficient causal conditions) behind the variations in constitutional control.

It is expected that the third wave of democratization (Huntington 1991) has made constitutional control even more diverse (i.e., a multitude of constitutional conditions constrains governments to a higher or lower degree) so that simple dichotomies do not hold anymore. Instead, modern democracies are complex constellations, integrating a mixture of institutional devices that can be used to control the executive. For this reason, it is expected that variations of constitutional control are not caused by one single factor or dimension, but by a combination of conditions that can be revealed more precisely with the help of fuzzy-sets rather than with crisp sets (= Boolean or dichotomous scores) because fuzzy-sets are based on membership grades. One should note that this article does not simply present the standard critique of dichotomous measures, but more importantly it is a critique of monocausal explanations tied to dichotomous measures. The remedy advocated here is to use fuzzy-sets and to examine causal conditions configurationally.

Monocausal explanations and dichotomous measures

In the present-day debate on executive-legislative relations, several hypotheses are proposed to account for variations in the distribution of formal powers of governments and parliaments:

- *Majoritarianism versus consensus democracy* (Lijphart 1999): In consensus democracies, power-sharing is the central device used to enhance the cooperation between divergent minority groups in segmented societies. The opposite model is majoritarian democracy, which concentrates all political power in the winning party. Consensus democracies enlarge the room to maneuver of parliaments compared to majoritarian democracies, and their governments are expected to be weaker because they are built on coalitions. Majoritarian countries are characterized by weak parliaments and by executive dominance as expressed by cabinets that stay in power for a relatively long time.
- *Old versus new democracies* (Schmidt 1999): The difference between established and fragile democracies has become more important than the juxtaposition of consensus and majoritarian democracies. This hypothesis explicitly contradicts the previous one, stating that the divide between majoritarianism and consensus democracy cannot account for major

differences (especially in terms of political performance) of modern democracies. In established democracies, parliaments are more developed and better equipped to perform legislative tasks and to counteract the executive than in new democracies (Schmidt 1999: 291). In the context of this article, this hypothesis is applied not to the performance of parliaments, but to their formal powers. It is expected that newly developed democracies distinguish themselves from established democracies by the many constitutional provisions installed in order to limit the power of executives.

- *Thick versus thin constitutionalism* (Lane & Ersson 2000): This hypothesis also contradicts the first one, but on different grounds. It states that thin constitutions (mainly characterized by division of powers as institutionalized by the Westminster state) enhance strong legislatures because the division of power principle entails that the legislature has to compete with the other two main state organs. Thick constitutions, on the other hand, restrict the room to maneuver of parliaments (and governments) because of their rigidity as expressed by a fundamental bill of rights and special protection of minorities.
- *Parliamentarianism versus presidentialism* (Linz 1994): Linz argues that the performance of presidential regimes is far lower than that of parliamentary regimes. In addition, the room to maneuver of parliaments is much higher in parliamentary as opposed to presidential regimes. Presidentialism is conducive to a weak party system, which in turn strengthens the dominant position of the president and the chance of political instability. The main reason is that presidentialism is based on dual popular legitimation which may result in a deadlock between president and parliament because both are (in)directly elected and are mandated to pursue policies. It is assumed that the more powers are assigned to the president, the weaker is the parliament. In this article, this hypothesis is applied to semi-presidential regimes in which the government is responsible to parliament.[1]

The four juxtapositions have in common that they seek to account for differences in constitutional control of the executive in a monocausal and exclusive fashion. The focus is on one single factor that accounts for the strength of parliaments and governments. There are several reasons why these dichotomies offer at best partial explanations.

First, the dichotomies refer to ideal types that hardly exist in their pure form because their characteristics are getting more and more mixed in modern democracies (Dunleavy & Margetts 1995). Devolution in the United

Kingdom, centralism in the Netherlands and a Mixed Member Proportional System in New Zealand are all examples of systems drifting away from their ideal-type image. Second, the degrees of presidentialism, consensus democracy and constitutional rigidity vary significantly so the classification of democratic regimes is problematic. For example, how much legislative and/or executive presidential power is needed in order to classify a system as semi-presidential? Finally, the effects of constitutional arrangements on parliamentary strength are not unequivocal. For example, Lijphart (1999) assumes strong parliaments in consensus democracies. However, case study analysis has shown that the parliament's position is seriously weakened by the majority's duty to support the coalition government (the osmosis between parliament and government) (Keman 1996; De Winter 1998). On the other hand, the role of government backbenchers can also be conducive to parliamentary strength in cases where consultation forces the government to modify its proposal in order to safeguard its support in parliament (De Winter 1993; Mezey 1998: 784). For this reason, it is not too obvious that the underlying rationale of Lijphart's hypothesis is correct since the effects of the institutions of consensus democracy on parliamentary strength are not always the same. This does not mean that dichotomies should be rejected altogether because ideal-types can help the researcher to establish a threshold between the '0' and '1' values of fuzzy-sets (Kvist 1999).

So, how can fuzzy-sets help to classify systems and measure the diversity of constitutional control in a parsimonious way? Dichotomies resemble the Boolean analysis from which fuzzy-set social science has originated. In Boolean analysis, the scores '0' and '1' are assigned to denote either the presence ('1') or absence ('0') of a phenomenon under investigation. This dichotomization has the disadvantage of a large information loss since phenomena are rarely either completely present or completely absent. Dichotomies are even more simplifying than Boolean scores. Whereas Boolean analysis aims at the identification of constellations of causal conditions, dichotomies are based on a single cause or dimension. This monocausality is problematic because the interactions between legislatures and executives are complex and embedded in institutional settings that may weaken or strengthen constitutional control.

Given these complexities, both crisp set and fuzzy-set analysis are better equipped to incorporate institutional conditions that may facilitate constitutional control than simple dichotomies (i.e., bivariate analysis). The fuzzy-set approach is particularly well suited for identifying, categorizing and measuring complex patterns of similarities and differences across cases. The study of diversity is the main strength of this methodological strategy due to its

capacity to measure partial memberships. Note that fuzzy-sets are not only superior to dichotomous scores, but also to interval scales because fuzzy-sets involve calibration (e.g., defining what is 'full' membership). Conventional interval scales are not calibrated in this way since all that matters is that they vary, which is a prerequisite for correlational analysis. Crucial for the calibration of membership is that it has a substantive rationale that clarifies why which scores are assigned to which cases.

Constitutional control in a democratizing world

Fuzzy-sets can be derived from existing scorings and operationalizations. Before doing this, it is necessary to have a closer look at both the meaning and variations of constitutional control of the executive.

The exploration of variations in constitutional control is based on a new data set that comprises several variables on the interactions between 45 parliaments and executives during the period 1945 to 1998 (Woldendorp et al. 2000). Included are solely parliamentary or semi-presidential democracies where the government is (fully) responsible to parliament.[2] Whereas parliamentary systems are based on the principal of power-sharing between governments and parliaments, in semi-presidential systems either the parliamentary government or the president directs government actions. All of the countries included meet the conditions of democratic government, in particular free elections, civil rights (formal and in practice) and the supremacy of the Rule of Law by means of a constitution.

The data set includes a broad range of institutional features of parliamentary government, including the role of Heads of State, the state format and organization, the structure of parliament, relations between the executive and legislature, decision rules in parliaments and the role of referendums, and features of governments. Following Derbyshire and Derbyshire (1996), the selected democracies can be subdivided into:

- *parliamentary executives* drawn from and responsible to the assembly which makes these governments formally accountable (n = 29);
- *limited presidential executives* where the presidency is the executive with powers limited by the need for the approval of parliament for certain executive actions (n = 8); and
- *dual executives* (also referred to as 'semipresidential' or 'premier-presidential' – see Shugart & Carey 1992: 6–7) in which the executive consists of a working partnership between the president and the prime minister (n = 8).

The borders between these types are not always clear – for example, a dual executive with a weak president functions as a parliamentary system (Mezey 1998: 781). Of the selected countries, most of the limited presidential and dual executives are rooted in new independent states, most of them breakaways from former Soviet countries.

According to the IPU-Parline database, there were 180 national parliaments operating in May 1997 (Copeland & Pattersen 1998: xix). Many of these parliaments do not meet the regular criteria for democracy, especially those in communist and one-party states. The countries included in the analysis have in common that the government is ultimately responsible to parliament. Of all selected countries, 55 per cent are uninterrupted democracies (since independence) and 45 per cent have been interrupted or experienced drastic changes in their constitution. Hence, the included countries are very diverse in history and, as such, the universe of discourse is quite uncommon in the field of parliamentary research.

There are at least three types of constitutional control (Mény 1996: 121):

- *partisan control*, voiced by the opposition, which is only effective under conditions in which the government is vulnerable;
- *non-partisan control* by means of parliamentary oversight which may take numerous forms: questions, committees, hearings and so on; and
- *control with a penalty*, like a motion of censure, which is most drastic, but cannot be used often without destabilizing the system.

In this article, the focus is on constitutional control with a penalty which occasionally occurs prior to government actions (*ex ante* accountability such as votes of investiture), but more frequently as a reaction to government performance (*ex post* accountability such as votes of no confidence). The available data are limited to formal procedures and do not reveal how these procedures are actually used (Mezey 1998). Formal powers of legislatures are in themselves important enough to study (Laver & Shepsle 1994: 134; Sartori 1994). The reason is that 'the constitutional state requires that legislatures define themselves in relation to the executive and the judiciary and maintain the basic pattern of the balance of power typical of the Rule of Law' (Lane & Ersson 2000: 288). Or, as Gallagher et al. (1992: 28) conclude: 'The fact that . . . governments must be able to survive in the legislature is, when all is really said and done, what makes . . . politics democratic.' Hence, in the constitutionalist view, it is worthwhile to study formal powers of parliaments and executives as they are.

Constructing fuzzy-sets

Charles Ragin has recently opened the gate for a new major advancement in comparative social science by introducing the fuzzy-set approach, which seeks to transcend the gap between case-oriented and variable-oriented research in a more advanced manner than the earlier Boolean approach (Ragin 1987, 1994, 2000). Whereas variable-oriented research tends to stress the study of lawful relationships between variables as the main purpose of social science, case-oriented research tends to advocate an idiographic view in which all cases are different. This particularistic bias is not shared by the fuzzy-set-oriented approach, which argues that it is possible to identify and characterize types of cases and to present these in a parsimonious way. Nonetheless, Ragin's approach (both crisp sets and fuzzy-sets) shares one key preoccupation of qualitative analysis: to take into account fully the richness and specificity of each individual case (Ragin 1987).

The fuzzy-set approach allows partial membership of a case in a given configuration. The cases' membership scores reflect the degrees to which cases are in or out of sets, where '0' is fully out, '1' is fully in and '0.5' is the cross-over point, being neither more in nor more out. The membership of a case – here a country – can vary from being fully in to being fully out of the sets. Because the estimation of the values of constitutional variables like presidentialism, constitutional rigidity, and so on is not fully precise due to measurement problems and lack of comparative data, I use value sets with only seven levels of membership: '1.00' fully in, '0.83' mostly but not fully in, '0.67' more or less in, '0.50' neither in nor out, '0.33' more or less out, '0.17' mostly but not fully out and '0.00' fully out.

By allowing for *partial membership*, sets become 'fuzzy' in contrast to 'crisp'. The majority of consensus democracies, for example, may neither qualify to be fully out of majoritarianism nor fully in consensus democracy. The fuzzy-set approach is suited to capture the complexities of modern democracies, which dichotomies evidently fail to do. The main differences can be summarized as follows:

- Dichotomies are monocausal in assuming that one single dimension accounts for the variations under study (but note that configurations of dichotomies could solve the problem of monocausality).
- Contrary to simple dichotomies, both fuzzy-sets and crisp sets allow for a multicausal explanation by combining multiple causal conditions into one equation.
- Fuzzy-sets have the same multicausal focus as crisp sets and additionally allow for partial memberships, which makes them more precise.

Fuzzy-sets are constructed on the basis of the original scores in the data set. In order to clarify the partial membership of cases, an overview of the operationalization of the outcome and the conditions is given.

The outcome 'constitutional control' is based on a combination of formal powers of parliaments and Heads of State. Because of the central role of this variable, its composition will be discussed in detail. With respect to the formal powers of parliaments, it is important to note that parliamentary government is a fused system, meaning that there is no straightforward separation of powers as in most presidential systems (Shugart & Carey 1992; Andeweg & Nijzing 1995; Kurian 1998). Parliament and government should not be seen as two independent entities, but as two overlapping bodies (King 1976; Andeweg & Nijzink 1995). The modes of interactions between parliament and government depend on the power divisions within and between parliament and government. Basically, there are three modes of interactions: the government dominates parliament, the parliament dominates government, and the parliament and government are balanced.

The basic variables that constitute these legislative-executive relationships are:

- *The role of the vote of investiture*: when this is constitutionally required, it imposes a barrier on the executive when there is no majority in parliament (De Winter 1995).
- *The vote of confidence*: this procedure can be used by both parliaments and governments in order to achieve their goals (Huber 1996).
- *The role of the Head of State*: in particular, the formal powers in relation to the parliament and government (Shugart & Carey 1992).

Most parliaments have the right to exert a vote of investiture or a vote of (no) confidence, but the *combination* of both a vote of investiture and the vote of (no) confidence, however, is mainly seen in three types of 'new' democracies – namely the defeated nations that rebuilt their democracy after the Second World War (Germany, Italy), the successors to (fascist) dictatorship (Spain, Portugal) and, finally, post-communist democracies.

Of the 21 countries in which both types of votes do exist, no less than 15 belong to the new and previously interrupted or drastically changed democracies. Obviously, the need to strengthen parliament was felt most profoundly in these new democracies. The experience of an authoritarian regime has led to new constitutions in which the parliament was given relatively high control over government (Maddex 1996). The main exceptions are the post-colonial democracies that mostly do not have a vote of investiture.

Until now, the focus has been on parliamentary strength, but constitutional control is more encompassing than that because it also incorporates the formal

role of Heads of State. This role is the extent to which the Head of State can influence the composition and continuation of a government. Powers are not only exerted from parliaments to governments, but also the other way around. These formal powers are measured by taking into account whether governments can ignore losing a vote of confidence and whether governments and/or Heads of State can dissolve parliament.

Constitutional control is operationalized by combining all these factors into one composite index of the relative strengths of executive and legislative powers (as is explained in detail in the Appendix). The scores range from –1.5 to +1.5. The higher the score, the more governments are restricted in their room to maneuver. It is an institutional measure based on formal powers anchored in the constitution. The creation of a seven-value fuzzy-set is straightforward because the composite index also has seven values. The crossover point (0.5) is assigned to countries where the executive-legislative relationship is in balance (i.e., where the score = 0).

The conditions are derived from the four hypotheses discussed earlier. The contrast between majoritarianism and consensus democracy is operationalized with the help of two variables: the effective number of parties and the type of government. The latter is the percentage of governments led by one party that takes all government seats. The higher this percentage, the higher the degree of majoritarianism. The means of the scores on both variables, of which 'type of government' was inverted, constitute a new index which measures the structural preconditions for consensus democracy (and not so much actual cooperative behavior within consensus democracy) (Armingeon 2002). The reduction of consensus democracy to this single variable is justified because it is a summary of Lijphart's first (executives-parties) dimension, which is core to the idea of consensus democracy. Lijphart's second (federal-unitary) dimension adds institutional features to consensus democracy that are contested (e.g., federalism and decentralization are found in both consensus and majoritarian democracies). Our summary measure has the advantage of the concept becoming uni-dimensional and straightforward in its interpretation.

The correlation with Lijphart's first (executives-parties) dimension (being 0.79) is high enough to claim that it is suited to be a proxy for the conditions of consensus democracy. Lijphart assumes that the number of parties corresponds more or less linearly with the strengths of parliament and government. The more parties there are, the more likely the chance of coalition governments which strengthens the power of parliaments. The second variable ('type of government') is added to correct for those cases where one-party cabinets occur in multi-party systems. The correlation between both variables is very high (0.91). Fuzzy scores are created by dividing the scores into seven groups with the highest scores for Switzerland, Italy, Israel and Belgium. As expected,

the lowest scores are occupied by the Commonwealth countries. Hence the calibration of membership in the set of 'consensus democracies' has a substantive rationale, namely that low scores are assigned to countries commonly identified as majoritarian and higher scores to countries that are more consensual.

The division between established and new democracies is operationalized by the year in which a democratic regime was established. Normally, extreme values influence the outcome of statistical analyses but, in the case of fuzzy-sets, this distortion does not occur because all scores are forced into the same range from '0' to '1'. In this case, '0' is assigned to the older democracies and '1' to the newest democracies which gives the calibration of the fuzzy membership scores in this set a clear substantial rationale. A score of '0.5' is assigned to regimes that were established between 1945 and 1950. The higher this score, the younger the democracy. It is expected that new democracies have equipped parliaments with relatively more formal powers than established democracies in order to prevent a fallback into forms of authoritarianism or dictatorship.

Thick versus thin constitutionalism concerns the decision rules with regard to constitutional change and the existing reviewing process within the polity. The more requirements that have to be met in order to change or amend the constitution, the more rigid the constitution. The rationale for the fuzzy-set scorings is that extremely flexible countries with an unwritten constitution (Israel, New Zealand, the United Kingdom) are scored '0' whereas extreme rigid countries where the amendment of the constitution is loaded with many requirements are scored '1'. The measure of Woldendorp et al. (2000) has five scores, ranging from '1' (most rigid) to '3' (most flexible). A large group of 36 countries has scores between '2' and '2.5'. By comparing these scores with Lijphart's measure of constitutional flexibility (Lijphart 1999), two new categories are created in order to be able to differentiate within this large group. In this way, seven more or less homogeneous categories are created. The higher the score, the more rigid the constitution.

Finally, the juxtaposition of presidentialism and parliamentarism is based on the degree of presidential power. The legislative and non-legislative powers of presidents are measured by Shugart and Carey's index (Shugart & Carey 1992; Strøm & Neto 1999). The resulting index is the sum of a selection of legislative presidential powers (e.g., veto power, decree powers) and executive powers (e.g., cabinet formation, cabinet dismissal, dissolution of the assembly). In most cases, executive powers are more decisive than legislative powers: the share of legislative powers among the 45 countries is only 21 per cent. This measure of presidential power is, despite its limitation to formal powers, more informative than the simple dichotomy between presidential and

parliamentary systems that neglects the crucial variations in degrees and types of presidential powers. The rationale for the calibration of the fuzzy membership scores is based on the degree of presidential power. The score ranges from '0' (no president; n = 18) to '17' (maximum presidential power). The 27 countries with a president are subdivided into six groups of four to five countries on the basis of the degree of presidential power (as reported by Shugart & Carey 1992).

Table 1 presents an overview of all fuzzy-set scores of the conditions and the outcome. It clearly shows that situations in which the parliament dominates over government are rare. They are mainly found in countries that expe-

Table 1. Fuzzy-set partial membership scores of the dependent and independent variables (1998)

Country	Constitutional control	Consensus democracy	Presidentialism	New democracy	Rigid constitution
Australia	0.33	0.33	0	0.33	0.83
Austria	0.33	0.5	0.5	0.33	0.67
Bangladesh	0.33	0.17	0.17	1	0.67
Belgium	0.17	1	0	0.17	0.67
Botswana	0	0	1	0.67	0.17
Bulgaria	0.67	0.5	0	1	0.17
Canada	0.33	0.17	0	0.17	0.83
Czech Republic	0.5	0.5	0.83	1	0.17
Denmark	0.5	0.83	0	0.17	0.5
Estonia	0.67	0.83	0.33	1	0.17
Finland	0.17	0.83	0.67	0.33	0.67
France V	0	0.67	0.5	0.67	0.5
Germany	0.67	0.5	0.17	0.5	0.83
Greece	0.5	0.33	0.67	0.83	0.5
Guyana	0.17	0	0.33	0.67	0.67
Hungary	1	0.67	0	1	0.33
Iceland	0.17	0.67	0.83	0.33	0
India	0.33	0.33	0.5	0.5	0.67
Ireland	0.5	0.33	0	0.33	0.5
Israel	0.83	1	0	0.5	0
Italy	0.67	1	0.67	0.5	0.33
Jamaica	0.33	0	0	0.67	0.67
Japan	0.33	0.17	0	0.5	1
Latvia	0.83	0.83	0.17	1	0.67
Lithuania	0.17	0.33	0.33	1	0.33

Table 1. Continued

Country	Constitutional control	Consensus democracy	Presidentialism	New democracy	Rigid constitution
Luxembourg	0.5	0.67	0	0.17	0.33
Macedonia	1	0.5	0	1	0.67
Malta	0.33	0	0.17	0.83	0.33
Namibia	0.17	0	0.83	1	0.33
Netherlands	0.5	0.83	0	0.17	0.67
New Zealand	0.17	0.67	0	0.17	0
Norway	0.5	0.67	0	0.17	0.67
Pakistan	0	0.17	1	0.83	1
Poland	0.5	0.5	0.5	1	0.33
Portugal	0.5	0.17	0.67	0.83	0.67
Romania	0.5	0.83	0.33	1	1
Russian Federation	0.5		1	1	0.33
Slovakia	0.67	0.83	0.83	1	0.17
Slovenia	0.33	0.83	0.5	1	0.17
South Africa	0.5	0	0.67	1	0.67
Spain	0.5	0.33	0	0.83	0.33
Sri Lanka	0.17	0.33	1	0.83	0.33
Sweden	0.5	0.67	0	0.17	0
Turkey	0.17	0.5	0.17	0.83	1
United Kingdom	0.17	0	0	0	0

Notes: Constitutional control: the higher the score, the more constraints are put on governments. Consensus democracy: the higher the score, the higher the level of consensus democracy. Presidentialism: the higher the score, the more powers are assign to the president. New democracy: the higher the score, the newer a democracy. Rigid constitution: the higher the score, the more rigid a constitution.

rienced forms of authoritarianism (Hungary, Macedonia and Latvia). The weakest parliaments (with a score of '0') are always found in combination with a president. There are, however, also examples of weak parliaments (with a score of '0.17') that have no president at all (Belgium, New Zealand, the United Kingdom). Hence, weak parliaments cannot be explained with the help of only one single factor, as will be shown in more detail later. Most common are situations in which the legislative-executive relations are balanced or when the government dominates over parliament. Apparently, most countries do not wish to constraint the government too much in order to guarantee the ample room to maneuver needed to achieve effective policy-making.

Necessary and sufficient conditions of constitutional control

The overarching hypothesis of this article is that dichotomies are too crude to account for variations in constitutional control. Fuzzy-sets enable us to transcend the dichotomy of either weak or strong parliaments. Instead, more variation in the degree of constitutional control is allowed in order to identify the circumstances in which parliaments and/or Heads of State are granted formal powers. The causation is expected to be conjunctural or multicausal, meaning that combinations of the four hypotheses cause varying degrees of constitutional control by parliaments and Heads of State.

There are two kinds of causal conditions that may account for constitutional control: those that are necessary and those that are sufficient. Fuzzy-sets enable the identification of these conditions by means of the so-called 'subset principle': a condition is necessary when its score is consistently higher than the outcome (the outcome is a subset of the condition); and a condition is sufficient when its score is consistently lower than the outcome (the condition is a subset of the outcome). This logic can be illustrated by a routine example. All successful politicians are popular, but popularity as such is not sufficient for success. In order to be successful, politicians must also obey party discipline, avoid scandals, etc. Hence, popularity is a necessary, but not a sufficient, condition for success.

In the case of necessity, every instance of constitutional control should involve the presence of a causal factor (Braumoeller & Goertz 2000). The reverse situation is not always true since a cause can be necessary without being sufficient. In that case, additional factors are needed to produce the outcome. Sufficiency means that a particular combination of conditions may produce a relatively high level of constitutional control, but, at the same time, there may be countries with the same level of constitutional control where this combination is absent, meaning that other combinations are relevant too. Different combinations of conditions can be linked to the presence of constitutional control (the so-called 'multiple conjunctural causation') (Ragin 1987).

Fuzzy-sets scores offer a parsimonious way to identify necessary and sufficient conditions because they enable the application of the subset principle. In the case of necessity, the outcome is a subset of the cause ($Y_i \leq X_i$ or, if the outcome is present, then the cause is also present). In the case of sufficiency, it is the other way around: the cause is a subset of the outcome ($X_i \leq Yi$ or, if the cause is present, than the outcome is also present). A score on the outcome should not be lower than the level set by the score on relevant sufficient conditions.

In reality, strictly necessary and sufficient conditions will be exceptional. Ragin (2000) has introduced the concepts of 'quasi-necessity' and 'quasi-

sufficiency' in order to enlarge the applicability of the fuzzy-set logic. In many cases, the measurement of membership scores is imprecise, especially in the middle range. These imprecisions are taken into account by incorporating an 'adjustment factor'. Given the seven-value fuzzy-sets, I have chosen an adjustment factor of '0.17'. In order to constitute a violation, a case's membership in the outcome must exceed its membership in the causal condition by more than 0.17 fuzzy-membership points.

The 'quasiness' of necessity and sufficiency is further invoked by statistical tests that use benchmark proportions. The benchmark refers to the proportion of cases that are consistent with the argument being tested. As it is plausible that there are exceptions to the rule, a benchmark of, for example, '0.80' is specified. This means that a causal combination is claimed to be 'almost always' sufficient in 80 per cent of the cases where the causal combination applies. The lower the benchmark and the higher the adjustment factor, the larger the analytical distance to the concepts of necessity and sufficiency. A causal condition can be interpreted as sufficient for constitutional control, with an adjustment of 0.17 fuzzy-membership units, if $X_i - 0.17 \leq Y_i$. Logically, a necessary condition is always part of the logical statement summarizing patterns of sufficiency.

The computer program FS/QCA[3] is used to identify the necessary and sufficient conditions for the degree of constitutional control. In the case of necessary conditions, the analysis is based on a test proportion of 0.80 ('almost always necessary'), a significance level of 0.05 and a fuzzy adjustment factor of 0.17. The absence of presidentialism turns out to be a necessary condition for constitutional control of the executive (see Figure 1). This necessary condition is plausible because a strong presidency implies that there are few formal constraints on executive power. However, the absence of a strong president is not sufficient as this does not automatically imply that the executive is bound by formal powers of parliaments and/or Heads of State.

The necessary and sufficient conditions for constitutional control can be examined with the help of scatter plots that show the distribution of the 45 cases along the condition and the outcome. In a perfect plot with an unadjusted diagonal, we expect all cases to be under (in case of necessity) or above (in case of sufficiency) the diagonal. The fuzzy adjustment factor raises the diagonal 0.17 points above or below its normal position (i.e., a straight line going from corner to corner) so that more points are consistent with the adjusted diagonal. Figure 1 is a two-dimensional plot with the outcome ('constitutional control') and the condition ('no or weak presidentialism'). The lower-triangular plot shows that the absence of a strong president is a quasi-necessary condition for a high score on constitutional control of the executive. The combination of strong presidents and strong parliaments is unlikely.

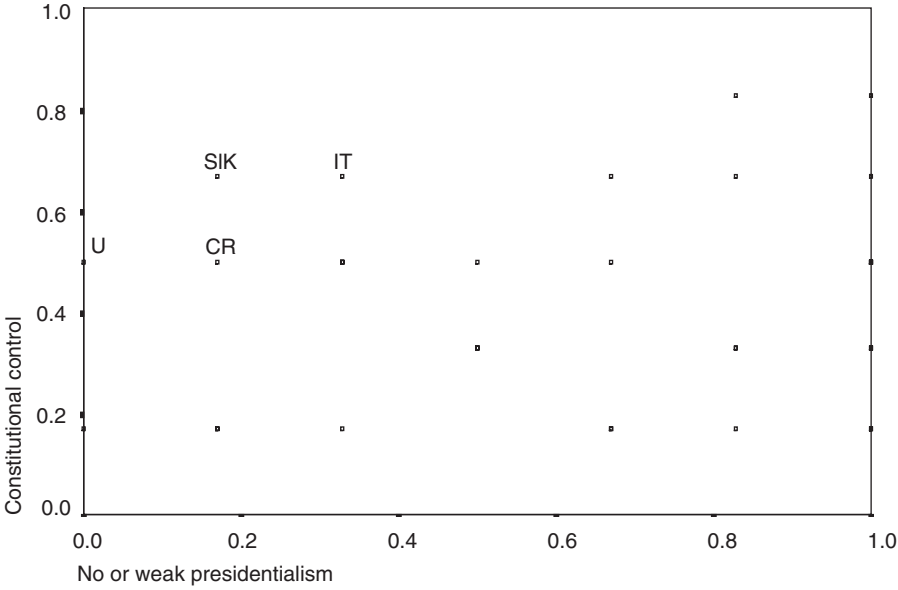


Figure 1. The absence of presidentialism as a necessary condition for constitutional control (U = Russian Federation Slk = Slovakia, CR = Czech Republic, IT = Italy).

However, there are some instances in which the values of the outcome are higher than the cause. Four countries outside the margin of the adjustment score of 0.17 (i.e., $Y_i \leq X_i + 0.17$) are plotted above the diagonal: the Russian Federation, Slovakia, Italy and the Czech Republic. These countries are exceptional because they combine strong presidents with a relatively high degree of constitutional control. Cases in the lower right-hand corner of the plot are countries with no or weak presidents in combination with a low level of constitutional control. Obviously, this pattern shows that the absence of a (strong) president is a quasi-necessary, but not sufficient, condition for constitutional control of the executive. The four exceptions are remarkable and unexpected because they combine the concentration of formal powers in the hands of both parliaments and presidents. Russia has a very strong popularly elected president and, at the same time, a balanced relationship between the legislative and executive powers. In the other exceptional countries, presidential power is weaker but not lower than 0.67, in combination with a constitutional control of 0.5 or higher. On the one hand, the identified necessary condition confirms Linz's (1994) hypothesis. Yet at the same time the exceptions make Linz's statement less absolute.

Findings

Several different combinations of causal conditions may be linked to high levels of constitutional control, which is called 'multiple-conjunctural causation'. A fuzzy membership in this combination of conditions is the minimum of the membership scores in the selected sets. The analysis of sufficiency shows that, in addition to the quasi-necessary cause of weak or no presidentialism, there are two combinations of conditions 'almost always' sufficient (note that '•' means 'and'; '+' means 'or' – in the Boolean nomenclature, uppercase indicates 'positive' value and lowercase 'negative' value):

> presidentialism • CONSENSUS DEMOCRACY • NEW DEMOCRACY, presidentialism • CONSENSUS DEMOCRACY • thick constitution.

These two expressions can be minimized to this solution:

> presidentialism • CONSENSUS DEMOCRACY • (NEW DEMOCRACY + thick constitution).

The maximum of the two conditions 'new democracy' and the 'absence of a thick constitution' provides the value of this logical *or* combination, but the minimum score of all conditions determines the ultimate sufficiency score of the solution, as presented in Figure 2 (Ragin 2000: 304). The fuzzy-set analysis leads to this conclusion: a high level of formal constitutional control of the executive is found in countries with: (1) no or weak presidentialism, (2) a consensus democracy and (3) either a new democracy or the absence of a thick constitution.

The plot of sufficient conditions in Figure 2 is a mirror image of Figure 1. In the case of sufficiency, an upper-triangular pattern indicates that several different combinations of conditions are conducive to constitutional control of the executive. Four cases are exceptional because the combined scores of the sufficient conditions are higher than the scores of the outcome so that they are not part of the subset of the outcome. This means that we would have expected a higher degree of constitutional control in these countries, given the relatively favorable conditions. It is striking that most exceptions have encountered a form of regime change in the postwar period. The collapse of the French Fourth Republic, for example, has weakened the French parliament *vis-á-vis* government and president because its controlling instruments are limited by the constitution (Woldendorp et al. 2000: 212). The transformation of the electoral system in New Zealand into proportional representation has increased the favorable conditions for a stronger parliament.

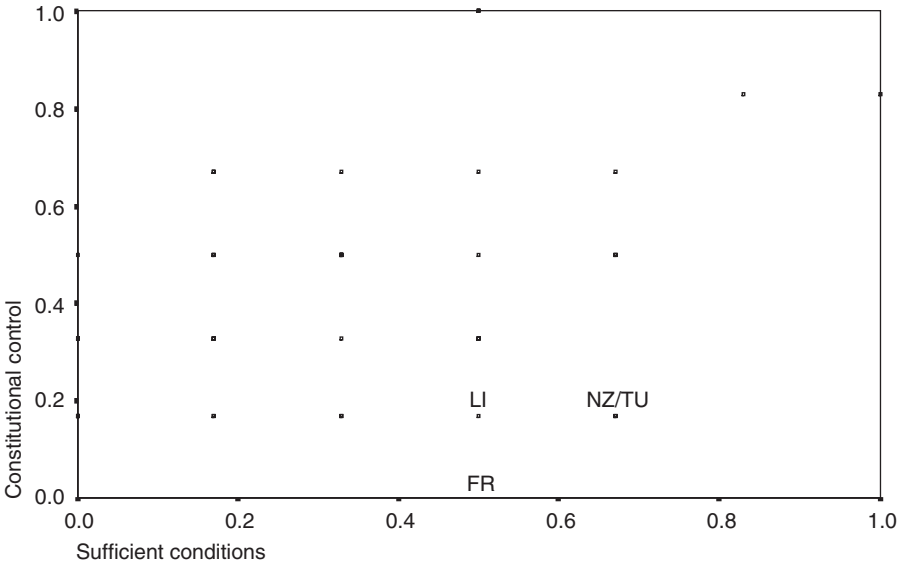


Figure 2. Sufficient conditions for constitutional control (LT = Lithuania, FR = France, NZ = New Zealand, TU = Turkey).

The fuzzy-set analysis leads to the conclusion that, in order to account for the degree of constitutional control, *all* four causal conditions appear to be relevant and *none* of them forms an fully adequate explanation in itself. However, there is a serious restriction – namely that the causal expression only confirms the direction of the relationships that are implied by the four hypotheses in a 'quasi-mode'. Despite this confinement, the main findings do make sense and confirm the assumptions underlying the four main hypotheses on which the analysis is based. The absence of presidentialism enhances constitutional control because presidents are inclined to concentrate executive and legislative powers which weaken parliaments (Linz's hypothesis). Consensus democracies can, in some instances, be sufficient for constitutional control because power-sharing gives parliaments a say in collective decision-making (as is hypothesized by Lijphart), but it does so only in combination with weak or no presidentialism. This combination confirms Lijphart's assumption that consensus democracy vitually rules out presidential or semi-presidential forms of government. The absence of a rigid constitution gives parliaments and Heads of State more room to maneuver and is therefore conducive to (but not decisive for) constitutional control (as stated by Lane & Ersson). Finally, new democracies are inclined to assign significant formal powers to parliaments and/or Heads of State in order to prevent a fallback

into authoritarianism. However, none of these four isolated factors is strictly necessary or sufficient.

Fuzzy-sets compared with crisp sets

It is has been shown that fuzzy-sets allow one to go beyond the presence/absence on which dichotomous are based. However, how much 'added value' do fuzzy-sets bring, compared to crisp sets? The latter already provide some interesting explanations that take multiple conjunctural causation into account, so that the added value of fuzzy-sets cannot be taken for granted. So, what is the improvement? This question can be answered by performing a crisp set analysis on the same data (as presented in Table 1). In principle, there are four scenarios.

First, if the crisp set test reveals many contradictions, then this is a clear demonstration that fuzzy-sets bring much added value (as the occurrence of contradictory configurations means that Boolean minimization cannot be envisaged other than by restricting the analysis to cases with clear outcomes). Second, if those tests allow one to reach solutions (minimal equations) that are less parsimonious than the solutions reached with fuzzy-sets, then this is a demonstration that fuzzy-sets bring added value. Third, if those tests provide different solutions to those reached with fuzzy-sets (but solutions that are just as parsimonious, no more, no less) then there would be room to discuss on theoretical grounds which solutions are more 'relevant' or 'interesting'. Fourth, if those tests provide exactly the same solutions as the ones reached with fuzzy-sets, then this would mean that fuzzy-sets do not bring added value and that the extra work is not useful.

In order to perform a crisp set analysis, the fuzzy-sets have to be transformed into binary scores. The dichotomy 'threshold' (between the '0' and '1' values) is placed between the '0.33' and '0.5' values (i.e., placing the bar low for all four conditions and for the outcome: their presence becomes more likely). As a rule for including configurations in the Truth Table, a minimum frequency is used of 2 for '0 configurations' and 4 for '1 configurations'. This decision is based on two considerations. One is that a higher frequency (like 3 for '0 configurations' and 5 for '1 configurations') would be preferable, but leads to a loss of 85 per cent of the cases due to contradictions. The other is that the 2:4 ratio is to some extent justified by the low dichotomy threshold used to transform fuzzy-sets into binary scores. As a consequence, 40 per cent of the cases is dropped due to contradictory outcomes. This confirms Hypothesis 1: The many contradictions indicate the capacity of the fuzzy-set approach to generalize (be it in a 'quasi-mode'), whereas the crisp sets approach

performs much worse. The output code of each configuration can be one of the following possibilities (for a full elaboration on this issue, see Ragin 1987; Drass 2000):

0 Configurations: For all cases in these kinds of configurations the outcome is absent.

1 Configurations: For all cases in these kinds of configurations the outcome is present.

– Configurations: For all cases in these kinds of configurations the researcher decided to assign the 'Don't Care' option. This allows the computer to treat these configurations having either outcome present or having the outcome absent, depending on the situation.

Contradictions: Not all cases of these kinds of configurations have the same outcome value.

Remainders: These are configurations with no cases in the data set.

The Truth Table will be minimized according to a given specification that results in the crisp set solution. In order to prevent some arbitrary choices having a strong impact on the outcome, the six most common ways of analysis and their crisp set solutions are reported in Table 2.

Solutions 1, 3 and 5 to which Table 2 refers are:

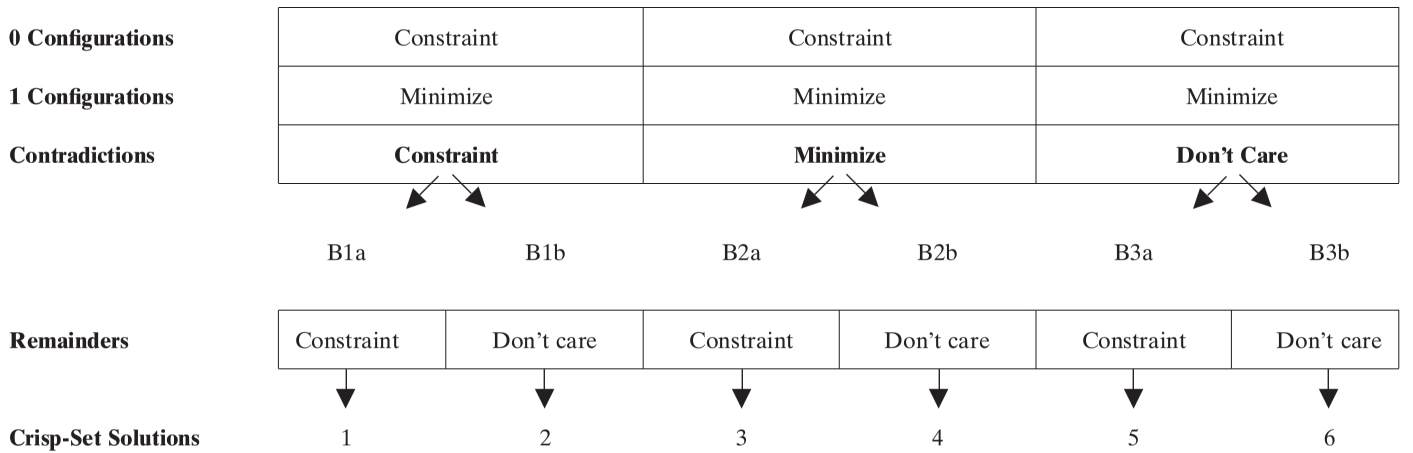
CONSENSUS DEMOCRACY • NEW DEMOCRACY • (thick constitution + presidentialism)

Solutions 2, 4 and 6 are:

CONSENSUS DEMOCRACY • NEW DEMOCRACY

It should be stressed that the outcomes of the crisp set and fuzzy-set approaches can hardly be compared because the former applies to only 60 per cent of the cases. When we disregard this important fact, the crisp set analysis suggests an alternative explanation that is as parsimonious as the fuzzy-set solution. Whereas the latter focuses on the combination of weak presidentialism and a strong consensus democracy, the former emphasizes the combination of consensus democracy and new democracy. Is this solution better than the one offered by the fuzzy-set logic? First of all, both outcomes do not totally contradict each other since both stress consensus democracy as an important condition. Second, the crisp set solution cannot be generalized and it is arrived at after transforming fuzzy-sets into crisp sets (i.e., by deleting information) which makes the crisp sets less informative. Hence, this comparison leads to

Table 2. Six different ways of analysis and their crisp-set solutions



the conclusion that, although crisp set solutions are in this case as parsimonious as fuzzy-set solutions, it is impossible to generalize to whole of the population since 40 per cent of the cases is dropped due to contradictory outcomes.

In sum, the first and probably most important value added of the fuzzy-set analysis is the problem (faced immediately when constructing the crisp analysis) of dichotomizing. Here it is done in a relatively mechanistic manner (and there are many other ways to do it), each way, in the end, resulting in different 'findings'. Another 'value-added' is that the crisp analysis is not oriented toward looking for necessary conditions and in fact is likely to miss them when they do exist. Basically, in crisp set analysis, the more limited the data in their diversity, the greater the role of simplifying assumptions. The greater this role is, the more likely it is that necessary conditions will be missed. This means that the main point of contrast between the two results is the necessary condition revealed in the fuzzy-set analysis.

Discussion

The constitutional control of executives cannot be explained by dichotomies alone. The fuzzy-set analysis has shown that a high level of formal constitutional control of the executive is 'almost always' found in countries with: (1) no or weak presidentialism, (2) a consensus democracy and (3) either a new democracy or the absence of a thick constitution. This statement incorporates elements of all four hypotheses formulated by Lijphart, Linz, Lane and Ersson, and Schmidt. This conjunctive explanation of constitutional control makes sense because the ideal types, which still dominate the literature, have in reality been replaced by hybrid systems that combine elements of different worlds. This also accounts for the 'quasiness' of both the sufficient and necessary conditions.

The main conclusion of this article could not be arrived at easily with the conventional qualitative and quantitative techniques. The identification of necessary and sufficient conditions and the countries that form an exception would have been less straightforward (Ragin 2000; Braumoeller & Goertz 2000). These exceptions could not be discovered by conventional residual analysis because they are not evoked by extreme or deviant scores. Only the combination of scores is exceptional. Whereas fuzzy-set analysis reveals the presence of necessary and causal conditions, quantitative correlational analysis can only indicate the association of two variables, but not their set-theoretic relationship (i.e., one being a subset of the other).

When crisp sets are compared with fuzzy-sets it turns out that they share many qualities since both are able to capture complexity, examine various determinants at the same time, enable multicausal explanation, allow one to study diversity, identify constellations of causal conditions, etc. The main drawback of crisp sets is the loss of information which leads to a less reliable, but not necessarily less parsimonious, outcome.

Similarly, fuzzy-sets also overlap with qualitative analysis in the sense that both have an eye for peculiarities of individual cases, especially those that are not consistent with the hypothesized causal effect. On the other hand, fuzzy-set analysis also has advantages compared to qualitative analysis. An example of this type of research is found in the compilation of country studies of the functioning of parliaments by Kurian (1998). The main conclusion that can be drawn from these case studies is that formal powers do not always lead to actual impact of parliaments (as in the case of most Eastern European democracies) and the lack of formal powers also does not automatically mean that a parliament is powerless. The drawback of Kurian's descriptive approach is that the functioning of parliaments is merely depicted as varied and diverse, and it does not unravel systematic patterns behind these differences. This is exactly what the fuzzy-set logic allows one to do. This does not mean that this new method can replace the other approaches. Qualitative case studies on executive-legislative relations are still necessary in order to account for deviant cases. Quantitative studies are still necessary in order to arrive at generalizations and hypotheses. Evidently, the fuzzy-set logic is not always the best way to study causal conditions. It is only applicable to a not-so-large number of countries for which no time series are available and for which only a small number of causal conditions are relevant.

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Appendix: Operationalization of the outcome: The constitutional control of the executive by parliaments and Heads of State

Variable	Description
Parliamentary dominance (Parlgov)	Extent to which parliament is dominant over government. This cumulative index is constructed by adding up scores of: vote of investiture is necessary condition to govern (1.0) and vote of confidence is necessary condition to continue to govern (1.0).
Executive dominance (Govparl)	Extent to which government is dominant over parliament. It is by adding up scores of: government can ignore losing a vote of constructed confidence (0.5) and government (or prime minister) can dissolve parliament (1.0) (if shared with Head of State, then 0.5).
Dominance of Head of State (Hosgov)	Extent to which the Head of State can influence the composition and continuation of the existence of a government. It indicates the independent power of the Head of State (HoS) *vis-à-vis* Parliament. This variable is constructed by adding up the scores of: HoS is directly involved in the formation of government (0.5), HoS can dissolve parliament (0.5) and HoS also has executive powers (1.0).
Executive control (dependent variable)	Extent to which the relationship between the executive and legislative powers is more/less balanced. This variable is a composite index constructed on the basis of the foregoing three variables. A positive score implies dominance of parliament over the executive powers (including the Head of State); a negative score implies dominance of government and/or Head of State over parliament. The closer the score is to 0, the more balanced the relationship between executive and legislative powers in a parliamentary democratic polity is assumed to be. The scores are computed by deducting the sum of (Hosgov + Govparl) from Parlgov.

Source: Woldendorp et al. 2000: 56–57.

Notes

1. In the Russian Federation, the administration is only indirectly responsible to parliament and therefore not comparable to the other countries. It is included in the analysis because of its significance due to the size of its population.
2. Several countries are excluded: The Bahamas because of too many missing data. The United States because of the independent position of the executive – Congress cannot send away the President and therefore has a limited control of the executive. Congress cannot initiate an alternation of power: it neither selects or unseats the chief executive and is therefore not a 'parliament' in the British sense. Switzerland because its governing committee cannot be dismissed by the parliament and because the referendum instru-

ment makes it different from a parliamentary system of government. Also excluded are all other systems that are either unlimited presidential or low on democraticness (measured by means of the Freedom House indicators) or one-party systems of governance or too small in size (like most of Caribbean Islands, of which Jamaica and Guyana are sampled to represent the rest). Although small in size, Malta is included because it is an established democracy. On the Freedom House index ('1' = democracy high; '7' = democracy low), 80 per cent of the countries has a score lower than or equal to 2. On Jaggers and Gurr's index ('1' = low on democracy; '10' = high on democracy), 85 per cent of the countries scores 8 or higher. This implies that a few countries are included that are less stable and democratic than the established democracies in the OECD. The reason for this is that, since the democratization gulf in the 1990s, many new democracies have entered the democratized world so the dividing line between democracies and non-democracies has been blurred. This is reflected in the selection of cases.

3. FS/QCA stands for 'Fuzzy-Set/Qualitative Comparative Analysis' and is developed by Kriss Drass and Charles Ragin. The program is downloadable from: http://smalln.spri.ucl.ac.be, and its manual from: http://www.u.arizona.edu/~cragin (consulted 12 April 2002).

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