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Abstract

This master thesis examines the autonomy of constituent units across different federations. No comprehensive study has thus far accounted for these differences. This master thesis will therefore help fill that gap by examining in particular the asymmetric structures and origins of federations. Asymmetric tendencies appear to be mainly symbolic, as there are no significant differences compared to symmetric federations. Still, this is of major importance to keep some ethnic minorities inside the federal state¹. The recognition of special groups' positions, without granting them substantially more autonomy proves a means of balancing the interests of different groups and keeping them together. The origins of federations do not result in a significant effect, which means that the initial distribution of powers is not fixed, but subject to continuous change. Three control variables are added, the dual/cooperative character of which turns out to account best for the autonomy of constituent units. Constituent units enjoy more autonomy in federations where powers are either assigned to the national or sub-national level as opposed to federations in which both tiers of government are involved in the same policy areas. All contemporary 24 federations have been included in the analysis, which means the findings apply directly to the entire population.

¹ The term 'state' might invoke some confusion as it usually applies to the national level, but constituent units are many times called states as well (e.g. India, United States, Australia). To avoid confusion, the term state will be used for the national level, unless specifically referred to the sub-national level.

1. Introduction

Most states around the world are unitary in shape, but forty percent of people around the world live in federations (Elazar, 1987, p. 6; Kincaid, 2019, p. 1; Kincaid & Chattopadhyay, 2020, p. 1). With regards to the democratic world only, this number even adds up to encompass a majority of citizens (Stepan, 2001, p. 315). Federations have two major strengths, though some authors have pointed at other minor advantages as well (Bednar, 2011). Federalism entails a vertical division of powers (between different levels of government) that just like the horizontal counterpart constitutes a restraint on government power, thus protecting citizens against potential tyranny, e.g. in the form of a populist majority (Riker, 1982). In addition, federal arrangements can keep together divided societies (Bednar, 2011; Lijphart, 1977). At least under certain circumstances, it can reduce tensions between different ethnic groups and therefore dampen inter-groups conflicts (Bakke & Wibbels, 2006; Brancati, 2006; Hale, 2004).

Federal states are not randomly scattered around the globe, although they are found on all continents. Indeed, among other factors, it is predominantly large size and ethnic division that account for the adoption of federal structures (Gibson, 2004, p. 183; Hague & Harrop, 2013, p. 256; Heywood, 2013, pp. 382-383; Lijphart, 2012, p. 183). However, just as these factors can explain the existence of federal systems, the variance within federations has been studied less thoroughly. This is all the more striking as some authors have identified different degrees of autonomy within federal states, but have not explained the observed variance in full detail (Bolleyer & Thorlakson, 2012; Lijphart, 2012, p. 178), or have limited the scope of their analysis by not including all existing federations (Dardanelli, Kincaid, Fenna, Kaiser, Lecours, & Singh, 2019; Dardanelli, Kincaid, Fenna, Kaiser, Lecours, Singh, et al., 2019; Gibson, 2004; Watts et al., 1996).

This variance matters because it entails a trade-off. An increase in the autonomy of constituent units has both advantages and disadvantages. Increasing the autonomy of constituent units sometimes helps keep divided countries together. More autonomy has, among others, helped keep Quebec in Canada, non-Russian speaking parts in Russia and several minorities in the Union of India (Lecours, 2019; Zuber, 2011). On the other hand, when constituent units have more space to set their own rules, this can increase confusion among citizens. For instance, during the COVID-19 pandemic, different *Länder* in both Germany and Austria issued different measures to tackle the issue, increasing citizens' confusion with what rules to comply with. In addition, increasing the autonomy of some 'nationality-based units' (NBUs) to keep them in, while neglecting the 'regional-based units' (RBUs) increases tensions between these two types of constituent units (Zuber, 2011).

As a comprehensive study that accounts for the differences in autonomy between federations is lacking, this master thesis will help fill that gap. It does so by focusing on the asymmetric features (some constituent units have more autonomy than others) and the origins (bottom-up/top-down) of a federation. These variables have been chosen on two conditions: their effect has not been settled and they relate to ethnic division (which already has explanatory power according to existing research). Other variables that do not meet these conditions can still be used as control variables.

Asymmetry and the origins of federations, however, relate to ethnic diversity. Asymmetric features are mostly found in plural societies. This asymmetry means that a few special constituent units dominate the struggle over the distribution of powers, leaving fewer room for other constituent units to articulate their needs. In other words, autonomy is usurped by a few privileged regions at the expense of the rest. Moreover, top-down federations are usually a solution to keeping together a divided country. Previous research (Aroney, 2019, pp. 65-66; Watts et al., 1996, p. 32) has indicated that the origins of a federation affect the

distribution of powers, but have not drawn an exhaustive conclusion yet. This master thesis therefore addresses the following research question: *How do a federation's asymmetry and origins affect the autonomy of constituent units?*

The issue of asymmetry can be approached in two ways. First, asymmetry involves differences between constituent units (e.g. differences of population). Second, asymmetry means that some constituent units have more powers than others (e.g. Quebec and the rest of Canada). This master thesis will adopt the second approach. With regards to the origins of federations, there are basically two variants. Federations are either the result of a coming together of (former) independent states (e.g. USA) or the result of centrifugal forces in a unitary states that eventually have transformed that state into a full-fledged federation (e.g. Belgium). Consequently, a distinction can be made between bottom-up and top-down federations.

The analysis includes multiple linear regression. The effect on the dependent variable (autonomy of constituent units) will be assessed using two independent (asymmetry and origins) and three control variables (ethnic division, size, and the dual/cooperative character of a federation). The dependent variable incorporates three dimensions of autonomy: the constitutional division of powers, fiscal autonomy, and safeguards.

The results of this analysis will show that the variables relating to both asymmetry and origins do not have a significant effect on the autonomy of constituent units. However, the dual/cooperative character has a significant positive effect, i.e. constituent units enjoy more autonomy in dual federations as opposed to cooperative federations.

The discussion regarding the results will indicate that asymmetric features mainly have a symbolic, albeit important, value. Some regions do not significantly dispose of more powers, but nevertheless enjoy a well-desired special status. At the same time, the other constituent units (who do not have that special status) retain, to a large extent, the same

powers as the special regions and are thus treated equally. With regards to the federal origins, the initial relationship does not have significant effects in the long run. The different tiers of government engage in a constant struggle over where the power boundaries lie. This happens in both bottom-up and top-down federations. Finally, constituent units enjoy more autonomy in dual federations, i.e. states in which the powers of different tiers overlap only to a small extent. In contrast, constituent units have less autonomy in cooperative federations, i.e. states in which both the central and sub-national governments are involved in the same policy areas.

This master thesis is structured as follows. The next section will assess the existing literature and state of current research by focusing on the defining characteristics of federations and discussing existing findings. Next, the theoretical framework discusses the two independent variables in more detail and formulates two hypotheses that incorporate these variables. The research design will lay out how the analysis should be conducted by operationalizing the dependent, independent, and control variables. The next two sections involve descriptive statistics and displaying the results. These sections validate the conducted analysis and describe the found relationships between the various variables. The discussion will shed light on the findings and discuss them in light of the theoretical framework. The last section will draw the final conclusions by summarizing the main findings. In addition, the limitations will have to be acknowledged and suggestions for future research have to be mentioned.

2. Literature Review

This literature review starts out with a definition of federalism, by breaking down the difference between the normative and empirical dimensions and clarifying that not all federal structures constitute federations per se. There exists some disagreement over what states to consider federal. This disagreement can be solved by identifying four criteria, the most

notable of which is that a state must constitutionally identify as a federation. The second part of the literature review examines the findings of previous research and notes, in particular, that ethnic division can account for the autonomy of constituent units.

2.1 What is a Federation?

Some authors have proposed to make a distinction between federalism and federations (Burgess, 2006; King, 1982; Watts et al., 1996). The former denotes a normative proposition, which advocates the adoption of a federal political structure. The latter takes a more empirical approach and encompasses political systems in which national and sub-national governments share sovereignty within one body politic. This master thesis focuses on the empirical dimension in order to account for differences between federations.

The empirical concept of federal structures can be broken down further. Not all federal arrangements have to denote a federation. A federation consists of cantons (Switzerland), provinces (Argentina), regions (Belgium), or states (India), bound together by a federal government. Federal arrangements can also be found in other state structures, like federacies (e.g. Greenland-Denmark) or associated states (e.g. Monaco-France) (Elazar, 1987, pp. 54-58; Watts et al., 1996, p. 11). The focus of this master thesis will solely be on federations and not all federal structures in general.

What then are federations? This is a crucial question to ask, not least because different scholars disagree on what countries constitute federations (Bolleyer & Thorlakson, 2012; Griffiths et al., 2020; Kincaid, 2019; Lijphart, 2012; Siaroff, 2013). Federal states can be characterized by four major characteristics. The first characteristic constitutes the decisive criterion. Regarding all other criteria, at least one federation does not fulfill them.

The first and foremost characteristic of a federation is that it identifies as one. For example, the Austrian constitution states “*Österreich ist ein Bundesstaat*” (“Bundes-

Verfassungsgesetz," 2013). In contrast, Spain is coined federal by some scholars (Erk & Koning, 2010; Stepan, 2001, p. 346), but the constitution refers to "*la indisoluble unidad de la Nación española*" ("Constitución de España," 2011), i.e. displaying unitary credentials. A belief in federalism can exist without the actual existence of a federal structure, but no federation can exist without an underlying principle that justifies its existence (King, 1982, p. 76). Therefore, the first criterion a federation has to fulfil denotes the will to be federal in the first place (Elazar, 1987, p. 42; Lijphart, 2012, p. 177).

Second, federations have written constitutions that lay out which powers lie at which level of government (Elazar, 1987, p. 157; Kincaid, 2019, p. 3). Powers like foreign affairs are usually allocated to the federal government, whereas municipal affairs tends to reside with the constituent units. Some powers can be concurrent powers, which means both levels of government are involved (Watts et al., 1996, pp. 117-122).

Third, constituent units enjoy special representation at the federal level. This takes on two concrete forms: (1) a bicameral legislature and (2) provisions for constitutional amendment. The first chamber (or lower house) of a legislature usually represents the people, whereas the second chamber (or upper house) represents the constituent units. Argentina constitutes a clear example. Each province elects three MPs (members of parliament) into the *Senado de la Nación* (Farah et al., 2020, p. 22).

Finally, a court is authorized to settle disputes between the national and sub-national governments over what powers lie at which level (Bednar, 2009, p. 96; Watts et al., 1996, p. 7). Federal and sub-national governments might have different interpretations of the constitution and how it allocates different powers to the different tiers. An umpire, in the form of a court, could settle these disputes. For instance, the German *Bundesverfassungsgericht* sided with Niedersachsen against the federal government in a dispute over education (King, 1982, p. 54). Though this is a common feature of federations, it

is not practiced everywhere. For instance, Kincaid (2019, p. 4) and Siaroff (2013, pp. 209-211) note that judicial review is absent in Ethiopia, Argentina, St. Kitts and Nevis, and Switzerland.

The decisive criterion is the constitutional identification of a state. In that vein, the autonomy of constituent units can be defined as “*The range of powers that lie with the constituent units vis-à-vis the federal government. This division of powers must be constitutionally embedded.*” All federations have constitutions that identify the state as a federal state. In addition, all countries’ constitutions make reference to a division of powers. This way, the federal government (or constituent units) cannot come up with a powers division on its own, but is bound by the constitution.

Now that has been defined what a federation denotes it is important to identify the clues that previous research on federations have left in order to identify in what direction to conduct further research. Current research provides some suggestions, but an overall assessment is still needed.

2.2 State of Existing Research

The current literature suggests that some variables can account for differences in the autonomy of constituent units between federations, most notably ethnic division. Nevertheless, the literature contains two problems. First, autonomy of constituent units and decentralization are incorrectly used interchangeably, blurring the distinction between sub-national governments within federal and unitary states. Second, no comprehensive study has exhaustively examined all factors in all federations that could account for different degrees of autonomy.

Back in 1987, Elazar (p. 34) already rightly noted that scholars (Bednar, 2011; Benz & Broschek, 2013; Bolleyer & Thorlakson, 2012) mistakenly use the term ‘decentralization’

in a federal context. Watts et al. (1996, p. 65) and Dardanelli, Kincaid, Fenna, Kaiser, Lecours and Singh (2019, p. 107) even continue to do so, consciously knowing the objection of Elazar. Decentralization is not the same concept as autonomy, given the fact that the central government can re-centralize powers back from sub-national governments at any moment (Kincaid & Chattopadhyay, 2020, pp. 12-13).

The second problem is that many studies that have examined federal states have included only a limited number of federations (Bolleyer & Thorlakson, 2012; Dardanelli, Kincaid, Fenna, Kaiser, Lecours, & Singh, 2019; Lijphart, 2012; Watts et al., 1996). Countries like Switzerland, the USA, and Australia are typically included whereas federal states like Micronesia, the UAE (United Arab Emirates), and Ethiopia are mostly excluded. These studies have taken a more qualitative approach as they focus on countries that are stable Western-styled democracies that have a long history of federalism. The lack of more quantitative indicators means, however, that the findings are not generalizable to the worldwide population of federal states.

These limitations notwithstanding, the findings of these studies remain all the more useful. For instance, the Regional Authority Index (Hooghe et al., 2016) that covers many countries all over the world and reports significantly higher scores for federal than unitary states. In addition, the index includes, among others, indicators like bicameralism and the representation of constituent units in constitutional amendments procedures.

Several indices (Hooghe et al., 2016; Lijphart, 2012; Siaroff, 2013; Trinn & Schulte, 2020) have identified sub-national autonomy, but Dardanelli, Kincaid, Fenna, Kaiser, Lecours and Singh (2019) have noted that a comprehensive study that explains these different degrees of autonomy between federations is still lacking. Consequently, they propose several hypotheses, although these are based only on a limited number of (mostly Western)

federations. Colino (2013, p. 50) likewise notes that current studies on different outcomes between federations have not yet proved exhaustive.

A comprehensive study might be lacking, but current research does provide some direction. There is a whole host of factors that vary from federation to federation and could therefore explain the variance in autonomy of constituent units: (1) ethnic diversity, (2) the size of the federation, (3) the dual/cooperative character of a federation, (4) whether the constituent units are territorial or non-territorial in character, (5) the asymmetric or symmetric features of a federation, and (6) the origins of a federation (bottom-up or top-down). These last two, in particular, merit further study. The others could still prove useful by including them as control variables.

First and foremost comes ethnic diversity. Ethnic diversity not only explains the existence of federations by itself. It accounts for differences between federal states as well. Watts et al. (1996, p. 31) have noted that more divided societies tend to have weaker central governments. Ethnic division introduces the need to hold together a state, thus explaining the top-down origins of some federal states (e.g. India, Belgium) (Siaroff, 2013, p. 157).

The second variable has to do with size. Ethnic diversity and size are the two variables that mostly explain the variance between unitary and federal states (Lijphart, 2012, p. 183). As ethnic diversity also explains the variance between federations, the same pattern can be expected regarding size. Federations (if relatively ethnically homogeneous) tend to be large in landmass (e.g. Australia), population size (e.g. Germany) or both (USA), although there exist some homogeneous small federations (Austria, UAE). This variable certainly merits further study, but unlike the last two variables, is not connected to the previous findings of ethnic diversity as an explanatory variable. Both large (India) and small (Bosnia and Herzegovina) countries can be divided in ethnic terms. Likewise, both large (Australia) and small (UAE) states can be more or less homogeneous.

The dual/cooperative character of a federation encompasses the third variable. In a dual federation, the federal government and constituent units each have exclusive authority regarding some policy areas, but they stay out of each other's domains as much as possible. In a cooperative federation, both tiers of government have the right to make policy with regards to the same domains, i.e. the policy areas overlap to a great extent. Bolleyer and Thorlakson (2012) have reported that, except for fiscal matters, the dual/cooperative distinction cannot account for differences in the autonomy of constituent units. Hence, the effect of this variable has already been settled.

The fourth variable denotes the territorial/non-territorial distinction. Usually, constituent units are territorial in character. Clear geographic boundaries distinguish constituent units from one another. The Belgian federation is made up of both territorial (Flanders, Wallonia, Brussels) and non-territorial (the respective language groups) constituent units (Jacobs & Swyngedouw, 2008). Examining whether territorial or non-territorial constituent units dispose of more autonomy is certainly worthwhile, but could only be conducted within Belgium as it is the only case that would suit this research. As a result, generalizability to the rest of the world would be an issue.

Asymmetry is the fifth variable. This entails a federation in which some constituent units dispose of more powers than others. For instance, Sabah and Sarawak enjoy more autonomy than the other Malaysian states. Russia even divides constituent units into different categories (e.g. Chechnya is a republic, whereas Moscow is a federal city) (Project, 2022). In contrast, different constituent units dispose of the exact same powers in symmetric federal states. Asymmetry occurs foremost in diverse countries (Stepan, 2001, pp. 327-328), whereas a federation does not have to encompass a plural society per se (e.g. Argentina and Austria are quite homogeneous). Only one (UAE) out of the current six asymmetric federations cannot be traced back to ethnic divisions. As the theoretical framework will make clear, the

special regions could dominate the struggle over powers in asymmetric federations, which in turn leaves fewer room for the other constituent units to articulate their needs. This, however, has not been examined yet and should therefore be subject to further research.

The sixth variable has to do with federal origins. Current research does suggest that origins affect the distribution of powers, but a clear account of whether constituent units enjoy more autonomy in top-down or bottom-up federations has not been laid out. Federations can be formed by a coming together of constituent units (bottom-up; e.g. USA, Switzerland) or by a unitary state that devolves powers to such an extent that it becomes a full-fledged federal state (top-down; e.g. Belgium, Nepal). This distinction relates to ethnic diversity as divided societies mostly contain centrifugal pressures to federalize a unitary state. Current research suggests that the formation of federal states affects the distribution of powers (especially regarding residual powers), but does not make explicit inferences in which kind of federations the constituent units enjoy more autonomy (Aroney, 2019, pp. 65-66; Watts et al., 1996, p. 32). This therefore merits further study.

The existing research contains two problems that this master thesis will help to address. First, terms like ‘decentralization’ are applied in a federal rather than a unitary context. Second, many studies on federalism have limited themselves by not encompassing all (contemporary) federal states (Bolleyer & Thorlakson, 2012; Dardanelli, Kincaid, Fenna, Kaiser, Lecours, Singh, et al., 2019; Lijphart, 2012; Watts et al., 1996). Nevertheless, five predictor variables can be deduced, the asymmetry and origins variables of which are particularly suited for further research. These two variables will be explained in fuller detail in the next section, whereas the other variables can still serve as control variables.

3. Theoretical Framework and Hypotheses

Given that a comprehensive study of variations in autonomy across federal systems is still lacking, this master thesis will propose two concrete hypotheses (with three control variables) to help fill the existing gap. This means that the study is not exhaustive, as it focusses on two independent variables. However, it does advance from current research and could lead to new insights. The two hypotheses have to do with asymmetry/symmetry and bottom-up/top-down federations. They both relate to ethnic diversity, a variable that previous research has considered an explanatory variable.

The first independent variable has to do with the asymmetric features of federations. Asymmetry can be approached in two ways. First, symmetry refers to the extent to which different constituent units share in the same makeup (Tarlton, 1965). According to this definition, all federations are in principle asymmetric, due to differences in geography and economics, among other things (Burgess, 2006, pp. 215-217; Watts et al., 1996, pp. 57-60). A second approach, one that this master thesis will focus on, examines the differences in autonomy within one federation. A federation is symmetric if all constituent units enjoy the same degree of autonomy (e.g. Brazil, Austria). A federation is asymmetric if some constituent units enjoy more autonomy than the rest (e.g. non-Russian speaking parts of Russia; Sarawak and Sabah in Malaysia) (Loh, 2020). Asymmetric arrangements tend to occur foremost in ethnically divided countries (Burgess, 2006, pp. 220-221; Watts et al., 1996, pp. 60-62). Although ethnic division in itself constitutes a sufficient factor for the presence of federalism as a whole, it is by no means a necessary factor. Indeed, some federations are quite homogeneous (e.g. Argentina, Austria), and therefore unlikely to be asymmetric in character.

The division of powers within federations is never fixed, but rather the outcome of a continuous struggle between the center and the regions (Dardanelli, Kincaid, Fenna, Kaiser,

Lecours, & Singh, 2019, p. 1; Stepan, 2001, p. 336). In asymmetric federations, this struggle is dominated by some special regions that seek autonomy (or even independence). Zuber (2011, p. 548) terms these special regions ‘nationality-based units’ (NBUs) and refers to the rest as ‘regional-based units’ (RBUs). In an asymmetric federation, the struggle between the center and the NBUs is likely to reduce room for the RBUs to articulate their needs. In symmetric federations, more ethnic division (e.g. Switzerland) is expected to result in more autonomy for all constituent units, but in asymmetric federations this results in more autonomy for the NBUs and less autonomy for the RBUs. This expected usurpation results in the following hypotheses:

H1a: Nationality-based constituent units in asymmetric federations have more autonomy than constituent units in symmetric federations.

H1b: Regional-based constituent units in asymmetric federations have less autonomy than constituent units in symmetric federations.

The origins of federations constitute the second independent variable. Some authors (Riker, 1964, 1975) have, by definition, assumed that federations are the result of a coming together of former independent states. Indeed, the Latin word *foedus*, in essence, means covenant (Elazar, 1987, p. 5; Kincaid, 2019, p. 1). Thus, the Swiss cantons federated in 1848 and created a *Bundesstaat*. By forming a federation, constituent units are viewed to enjoy certain benefits from the federal system (foremost military security, but also commerce/trade), while at the same time maintaining some powers for themselves to make their own laws. Belgium poses a clear contrasting case. The Belgian federation is the result of decades of devolution down from the center. The Belgian case thus perfectly fits the top-down federation. Next to the bottom-up/top-down classification, Stepan (2001) proposes a classification between federations that are the result of a coming together of states, or the keeping together of a state. Just like the asymmetric variable, the bottom-up/top-down (holding together/coming

together) variable can be impacted by the variable of ethnic division. Top-down federations mostly occur in plural societies, as ethnic minorities induce centrifugal pressures to devolve autonomy.

The way a federation came into being could matter for the division of powers. Watts et al. (1996, p. 32) suggest that in bottom-up federations the residual powers (those powers that are constitutionally assigned to neither tier) remain at the regional level, while the central level disposes of those in top-down federations. He does not make inferences with regards to the overall distribution of powers, though his findings clearly indicate that a federation's formation has an effect. Aroney (2019, pp. 65-66) likewise notes the different natures of bottom-up and top-down federations. In bottom-up federations, constituent units retain complete autonomy, with the only exception of those powers that have been explicitly transferred to the federal level. In top-down federations, it is the other way round. The national level retains all powers, except those that have been explicitly transferred to the sub-national units. Aroney does, however, note that a discrepancy can occur between these principles and reality. For instance, in top-down federations, pressures to transfer more powers to the sub-national level can increase the autonomy of constituent units. Nevertheless, the way a federation is set up is likely to affect the division of powers, which results in the following hypothesis:

H2: Constituent units have more autonomy in bottom-up federations than in top-down federations.

Having established in what direction to conduct further research, the next task involves conducting that research. The next part of the thesis therefore crystallizes what concrete research design to adopt in order to test the formulated hypotheses.

4. Research Design

In order to assess the differences in the autonomy of constituent units within federations, a multiple linear regression analysis will be conducted. The regression includes a dependent (the autonomy of constituent units), two independent (asymmetry and federations' origins) and three control (ethnic fractionalization, size, and the dual/cooperative character) variables. The dependent variable is made up of three dimensions. All variables are summarized in table 1.

Table 1. Expected Relationship of the Independent and Dependent Variables

Variable type	Variable	Sources	Variable type	Relationship
Dependent	Division of powers	Constitutions	Ratio	
	Fiscal autonomy	IMF and supplementary sources	Ratio	
	Safeguards	Constitutions and secondary literature	Ratio	
Independent Ia	NBU	Constitutions	Dichotomous	+
Independ Ib	RBU	Constitutions	Dichotomous	-
Independent II	Bottom-up	Secondary literature	Dichotomous	+
Control I	Ethnic division	Historical Index of Ethnic Fractionalization (2013)	Ratio	+
Control IIa	Log of landmass	CIA World Factbook (2022)	Ratio	+
Control IIb	Log of population size	CIA World Factbook (2022)	Ratio	+
Control III	Cooperative federalism	IMF, constitutions	Ratio	-

This master thesis will include all contemporary federal states. Consequently, one has to assess what states can be considered federal. There is some disagreement among scholars as to what states to count as federal. States like Switzerland and the United States are considered federations by virtually everyone, but this does not apply to countries like Spain or South Africa. To determine, ultimately, what states to consider federal, this master thesis examines the constitutions of states. As noted on p. 7, the foremost characteristic of a federal state is that it identifies as one. States that identify as federations will be considered federations. India constitutes an interesting case as it rather identifies as a ‘Union of States’ ("Constitution of India," 2016), but that can be considered a synonym of ‘federation’.

This might entail some issues, however. While a federation has to identify as such, this could contrast with reality. For instance, a strong authoritarian central government could render all sub-national autonomy meaningless. In addition, some states that are completely federal in all but name, are left out (e.g. Spain) (Watts et al., 1996, p. 28). In Spain, the constitution prescribes a division of powers. In addition, when the federal government issues policies that touch on the autonomy of constituent units, this has to be approved by the Senate, which is composed of representatives from the constituent units (Stepan, 2004).

Nevertheless, the constitutional identification of states can prove to be decisive in distinguishing which states to count as federal and which not. Unitary states with many federal traits choose to remain unitary in nature, because of the negative connotations with federalism. Federalism is associated with a dissolution of national unity in Spain (Aranda & Kölling, 2020) with the apartheid regime in South Africa (Naidoo, 2020), and with the communist past in Eastern European countries. Therefore, states that are federal in all but name are sometimes counted as ‘semifederal’ (Lijphart, 2012, p. 181) or a ‘borderline case’ (Siaroff, 2013, p. 157). Appendix 1 provides an overview of all 24 states that can be

considered federal, based on their constitutions. Of these 24 federations, the asymmetric ones will encompass two cases, one for the NBUs and one for the RBUs.

Assessing the autonomy of constituent units requires taking into account several factors. There is some consensus that any index should include both fiscal and non-fiscal matters. Beyond that, various distinctions have been proposed. Schneider (2003), Falleti (2005), and Harguindéguy et al. (2019) have identified an administrative (constituent units have some autonomy to govern in certain policy areas) and political dimension (constituent units are free to shape their own political systems and constitutions), next to a fiscal dimension. Hooghe et al. (2016) make a major distinction between the extent to which constituent units are self-governing (self-rule) and the extent to which they have a say in national policy making (shared rule). Both of their dimensions have integrated fiscal matters in their measurement. Watts et al. (1996, pp. 117-122) take a completely different approach by focusing on the constitutional assignment of powers to each tier of government. Bednar (2009, pp. 95-131), who has not issued an index herself (Bednar, 2011, p. 278), suggests that safeguards (e.g. bicameralism and judicial review) are a major feature of federations and merit further study.

These different distinctions overlap. What distinguishes the approach of Watts et al. (1996) is that it allows for a ratio scale, whereas most current indices that cover regional autonomy apply ordinal scales (indicating that a constituent unit has no, some, or a lot of autonomy). Additionally, this approach displays the powers of the constituent units *vis-à-vis* the powers of the central government, whereas other indices (Hooghe et al., 2016) do not focus on the exclusivity of these sub-national competences. This master thesis therefore adopts an approach based on Watts et al. (1996) and Bednar (2009); (Bednar, 2011): one dimension covers the constitutional distribution of powers, one fiscal matters, and one

safeguards. Each dimension includes a 100-point scale that can be added up to a total 300-point scale.

The dimension discussed first relates to the division of powers. After all, this touches on the very nature of federal states as different tiers of government each have to have a final say regarding some policy areas (Riker, 1975, p. 101).

4.1 Dependent Variable Dimension 1: Division of Powers

The first dimension entails the constitutional distribution of powers. All federations have written constitutions (Project, 2022) that prescribe what powers lie at which level. For instance, forty percent of all powers are allocated to the national government and another forty percent reside with the sub-national level. Sometimes both the national and sub-national tiers are involved in the same policy area (Watts et al., 1996, pp. 117-122). Let one assume that the remaining twenty percent from the example are concurrent powers. As both governments are involved, these should be divided by half and added up to the index. This makes for a score of 50 out of 100 ($40 + 20/2 = 40$) with regards to the constitutional distribution of powers.

The Constitute Project (2022) contains all 24 federations' constitutions. All constitutions allocate at some point the powers assigned to the different tiers of government. The powers of each tier are coded according to seventeen policy areas: Foreign Affairs, Defense, Monetary Affairs, Communication, Police, Health, Environment, Taxation, Social Affairs, Education, Energy, Agriculture, Culture, Sport, Natural Resources, Land and Housing, and Infrastructure. Most constitutions enumerate powers in one or more lists. In addition, unmentioned powers (residual powers) are usually left to one specific tier of government. How each constitution allocates powers to the different tiers of government can be found in appendix 4. Coded as concurrent are the powers that are specifically identified as

such. In addition, when one aspect of a policy area (e.g. primary education) is allocated to one tier and another aspect (higher education) is allocated to another, the policy area will be coded as concurrent as well.

The constitution of each federation prescribes a division of powers, but in order for a tier of government to properly execute the authorized powers it needs a decent share in the government's tax receipts. The next task therefore involves inquiring further into the fiscal aspect of the autonomy of constituent units.

4.2 Dependent Variable Dimension 2: Fiscal Autonomy

The second dimension denotes fiscal matters. This entails the amount of revenue constituent units raise as a percentage of total government revenue. The (IMF, 2022) provides useful data, though it does not include full data on all countries. The fiscal data therefore has to be supplemented by, among others, government accounts. A clear indicator of fiscal autonomy is provided when a sub-national government taxes and spends a certain percentage (e.g. 30%) of total government revenue. This government would score 30 on a scale from 0 to 100 of fiscal autonomy. However, some government revenue (e.g. 20%) is taxed at the national level, transferred to the sub-national level, and spent by that same sub-national government. In that case there is fiscal autonomy, but does not count as a full 20%. Hence, revenue that is taxed nationally and transferred to the constituent units should be divided by half and added up to the fiscal autonomy scale. In this case, the sub-national government's revenue counts as a score of 40 ($30\% + 20/2\% = 40\%$) on the 100-point scale of fiscal autonomy.

A federal structure with a division of powers whose maintenance is fiscally taken care of could still be subject to change. In order to secure a stable structure, safeguards guarantee the autonomy of constituent units in the long run. The next section will therefore discuss the several safeguards that can protect the autonomy of constituent units.

4.3 Dependent Variable Dimension 3: Safeguards

The third dimension entails safeguards. These include bicameralism, the possibility of secession, constitutional amendment procedures, representation at the executive, and judicial review. This will be assessed on a 100-point score, in which each dimension encompasses 20 points.

Bicameralism usually entails the representation of constituent units in a second chamber, whereas the first chamber's composition is usually based on the representation of the entire people of a country (Lijphart, 2012, p. 194). Thus, the constituent units have a say in the policy making process at the national level. 20 points are awarded if constituent units have veto power, 15 points if all constituent units are equally represented, 10 points if the largest constituent unit has two times the MPs of the smallest constituent unit (e.g. in Germany, Nordrhein-Westfalen has 6 MPs, whereas Bremen has 3 MPs), and 5 points if the largest constituent unit has four times the MPs of the smallest constituent unit (e.g. in Austria, Niederösterreich has 12 MPs, whereas Burgenland has 3 MPs). 0 points are awarded if the representation is proportional to population size or there is no representation at all. The points are divided by two if the MPs represent the constituent units, but are appointed by the federal government rather than elected by the constituent units themselves. Constituent units that have unicameral legislatures, but include the constituent units during plenary voting will be awarded the same scores as bicameral legislature that have representation in the second chamber. Representation in the second chamber will be assessed through the constitutions and secondary literature. Appendix 5 explains in detail the representation in each federation's legislature.

The constitutional possibility of secession constitutes the second sub-dimension. Some countries constitutions' guarantee the right to secede from the federation. This makes for 20 points. The possibility of secession has to be constitutionally justified. Otherwise, the

central government could always make the argument that secession is not allowed or that the issue has already been settled when a constituent unit previously had decided to stay in the federation.

The provisions for constitutional amendment procedures denote the third sub-dimension. Whereas the constitution allocates powers to the different tiers, how these tiers have a say on the constitution matters as well. Constituent units usually have three ways of participating in the amendment of the constitution: via the national legislature, via referendum, or via the sub-national level (e.g. sub-national legislatures) itself. Sometimes, constituent units have more than one of these options at their disposal. To begin with, constitutional amendments often require the approval of both legislative houses, the second of which represents the constituent units. However, when there is no second chamber, the legislature sometimes has a special procedure so that MPs from different constituent units must approve of an amendment. In addition, constitutional amendments sometimes mandate a referendum in which both a majority of voters (*Volksmehr*) and a majority of constituent units (*Ständemehr*) approve of it. Finally, a constitutional amendment must sometimes be approved by a majority of state legislatures (Barceló Rojas, 2020). The degree of *Ständemehr* varies from country to country. Countries will therefore be scored from 0 (no *Ständemehr* required whatsoever) to 20 (all constituent units have to approve of it, i.e. each one has a veto). 5 points are awarded for a simple majority, 10 for a two-thirds majority, and 15 for a majority bigger than two thirds. Countries' respective constitutions and secondary literature will be studied in order to account for the constitutional assignment of different powers. The results of this assessment will be included in appendix 6.

Representation at the election and regarding the composition of the executive encompasses the fourth sub-dimension. For instance, smaller constituent units are sometimes overrepresented in the electoral college that elects the executive (e.g. USA, Switzerland). In a

similar vein, a president must sometimes obtain votes in a certain number of constituent units, in addition to winning the popular vote (e.g. Nigeria). 10 points are awarded if constituent units have some say in the appointment of the executive. 0 points are awarded if there is no representation (e.g. a president that is elected with a simple popular vote, Brazil). Another 10 points are based on the composition of the executive. If different members of the executive (e.g. different ministers or the president and vice president) are expected to represent different constituent units, this makes for 10 points.

Judicial review denotes the final safeguards sub-dimension. An umpire, in the form of a court, can settle disputes between the national and sub-national governments over where certain constitutional powers reside. National and sub-national governments can develop different interpretations of the division of powers, especially when different policy areas overlap. A court is particularly suited to umpire as it has no interest in the question of where the boundaries of powers lie (Bednar, 2009, p. 120). The dispute over powers affects mostly governments, not courts as courts do not exercise these powers. 10 points are awarded if the constitution explicitly authorizes a court to settle disputes between the different governments. 5 point are awarded if the constitution only grants a court the right to interpret the constitution, not explicitly mentioning that this entails the settlement of disputes. 0 points are awarded if the constitution remains silent on this subject (though there could be constitutional review in practice, e.g. USA, Canada). An additional 10 points are awarded if the constituent units are represented at either the appointment and/or composition of courts. If constituent units are represented at the appointment of half the judges, this will divide the score of 10 points by 2, making for a score of 5 points. The scores of this sub-dimension will be assessed using the constitutions and secondary literature.

The first task involved the operationalization of the dependent variable. After all, without this variable, all other variables' effect could not adequately be measured. The next

task has to do with operationalizing the variables relating to the two hypotheses, in order to measure their effect on the dependent variable.

4.4 Independent Variables

The analysis includes two independent variables that each relate to one of the hypotheses. Additionally the two variables will be merged into a variable that creates an interaction effect between these two independent variables.

The first independent variable has to do with (a)symmetry (H1). Constituent units in asymmetric federations are coded as either NBUs (privileged regions) or RBUs (normal regions). This variable will be coded using constitutions that identify some constituent units as special units that have additional powers in comparison to the others. The assessment of asymmetry will be available appendix 2.

The second independent variable denotes the origins of a federation (H2). Federations can be the result of a coming together of constituent units (e.g. Switzerland, United States) or the result of keeping together a former unitary state (e.g. Belgium, Nepal). This variable is thus a dichotomous variable as well. The origins of federations will be assessed using secondary literature (Burgess, 2006; Griffiths et al., 2020; Watts et al., 1996). Appendix 3 will display all federations counted as bottom-up or top-down, respectively.

The analysis will involve three models based on the different independent variables. The first model tests hypothesis 1 by including the independent variable of asymmetry. Model 2 addresses hypothesis 2 by taking into account the independent variable of federations' origins. The third and last model adds the interaction effect of the independent variables.

This sub-section has focused on the two independent variables that are expected to have a significant effect on the dependent variable. Still, other variables could account for the

variance of the dependent variable as well, and it remains therefore vital to operationalize these control variables as well.

4.5 Control Variables

The first control variable denotes ethnic division. As previously noted (p. 8), current research (Watts et al., 1996, p. 31) suggests that the central government has fewer powers *vis-à-vis* the constituent units in more divided societies. Ethnic diversity therefore has to be controlled for, as one can expect it to explain the degrees of autonomy within a federation. The Historical Index of Ethnic Fractionalization (HIEF) will be used to assess the ethnic diversity of countries. This index measures the chance that two people within the same country do not belong to the same ethnic group (Drazanova, 2020). The ratio scale ranges from 0 (completely unlikely that two people belong to two different groups) to 1 (completely likely that two different people belong to different groups).

The size of a federation constitutes the second control variable, in which larger federations are expected to be composed of more autonomous constituent units. Much the same way ethnic division cannot only explain the differences between federal and unitary states (Kincaid, 2019, p. 1; Lijphart, 2012, p. 183), but account for differences between federations as well, the same can be expected from the factor of size. Federal systems occur among large countries, both in terms of landmass (e.g. Australia, Canada), population (e.g. Germany), or both (e.g. Brazil). When conducting a study on federations, one should therefore control for both of these factors of size. Data on this control variable can be derived from the CIA (2022) World Factbook. The logarithm of the federations' sizes will be used, in order to avoid huge standard deviations.

The last control variable is the dual/cooperative distinction and can be assessed through examination of the countries' respective constitutions and transfers of taxes. To

begin with, within a dual federation, the central government has power A, the regional governments have power B and they stay out of each other's domains as much as possible. The USA has been portrayed as the one classic example, though today Belgium is the most dual system (Bolleyer & Thorlakson, 2012, p. 587; Fenna, 2019, p. 80). In contrast, in cooperative federations, both tiers of government are involved in the same policy areas, i.e. they have concurrent powers. Bolleyer and Thorlakson (2012) have suggested that with regards to fiscal matters, constituent units enjoy more autonomy within dual federations than in cooperative federations. However, that finding does not hold with regards to other matters. Aroney (2019, p. 65) has suggested that with regards to concurrent powers, federal laws are sometimes given priority over sub-national laws, so as to rule out any inconsistencies. To conclude, the dual/cooperative character does affect the distribution of powers and should therefore be controlled for. Two factors make up the dual/cooperative character of a federation. First, a constitution that prescribes many concurrent powers denotes a cooperative federation, whereas a constitution that mostly allocates powers to the two specific tiers alludes to a dual federation. Second and in a similar vein, revenue that is taxed at the federal level, but transferred to the constituent units also displays a cooperative rather than a dual character. The percentage of concurrent powers and percentage of transferred money are added up, which makes for a scale that ranges from 0 (perfect dual federation) to 200 (perfect cooperative federation).

Now that the operationalization of all variables has been established, the next task involves conducting the multiple regression analysis. This will be done using three models. Model 1 tests the first hypothesis (asymmetry), Model 2 tests the second hypothesis and Model 3 tests both hypotheses. The results of this analysis will be discussed in the next two parts.

5. Descriptive Statistics

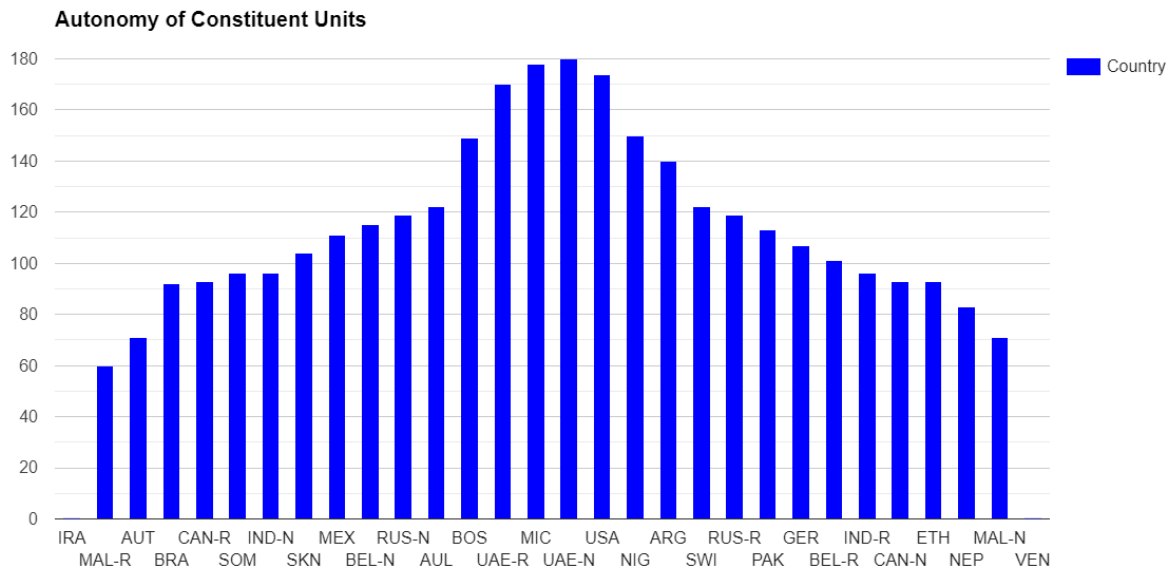
Table 2 displays the descriptive statistics of all variables. Venezuela and Iraq constitute missing cases regarding the autonomy of constituent units as these cases lacked data on the fiscal dimension. The population contains 24 federations, 6 of which can be identified as asymmetric (see appendix 2). Each asymmetric federation denotes two cases, one constituting the NBUs and one constituting the RBUs. The population contains 11 bottom-up and 13 top-down federations (see appendix 3). Regarding ethnic division, the Historical Index of Ethnic Fractionalization (HIEF) did not contain information on India (both NBU and RBU cases), Micronesia, and St. Kitts and Nevis. The dual/cooperative distinction lacked data on Nigeria, Iraq and Venezuela. Finally, regarding the fiscal dimension, most accounts only reported the total revenue of all constituent units without displaying differences between them (particularly between NBUs and RBUs).

Table 2. Descriptive Statistics of the Variables

Variable	N	Mean	Standard Deviation	Min	Max
Autonomy of constituent units	28	114,93	32,898	60	180
NBU	30	0,20	0,20	0	1
RBU	30	0,407	0,407	0	1
Bottom-up	30	0,47	0,507	0	1
NBU*Bottom-up	30	0,1000	0,30513	0,00	1,00
RBU*Bottom-up	30	0,1000	0,30513	0,00	1,00
Ethnic division	26	0,53388	0,205040	0,158	0,860
Log of landmass	30	5,6700	1,18660	2,42	7,21
Log of population size	30	7,5200	0,96143	4,74	9,14
Cooperative federalism	27	66,30	25,705	19	104

Any multiple regression analysis has to meet certain assumptions, but two issues in particular merit further scrutiny. The first concerns hierarchy in data and the second has to do with multicollinearity. In order to check whether there is no hierarchy in the data, figure 1 displays a histogram of the dependent variable. All countries are placed on the X-axis and the Y-axis reports the autonomy of constituent units. The asymmetric federations contain two cases in which the abbreviations ‘-N’ and ‘-R’ have to do with NBUs and RBUs, respectively. The figure displays a normal distribution, which means there is no hierarchy in the data.

Figure 1. Histogram of Federations and the Autonomy of Constituent Units



Multicollinearity likewise has to be controlled for. Table 3 reports the variance inflation factor (VIF) for each of the independent variables. Model 1 has focused on the first hypothesis (asymmetry), Model 2 has devoted particular attention to hypothesis 2 (origins), and the last model took into account the interaction effect between these two hypotheses. The VIF is clearly below 10 on all accounts, which means there is no multicollinearity. The landmass and population size do report some higher correlation. Larger countries tend to contain larger populations. This same finding of higher correlation holds for the interaction variables and the independent variables that are included in the interaction effect. Nevertheless, the assumption of no multicollinearity is met.

Table 3. Variance Inflation Factor for the Independent Variables

	Model 1	Model 2	Model 3
NBU	1,246		2,628
RBU	1,240		2,675
Bottom-up		1,380	2,173
NBU*Bottom-up			3,631
RBU*Bottom-up			3,708
Ethnic division	1,301	1,124	1,631
Log of landmass	3,135	2,881	3,201
Log of population size	3,138	2,782	3,261
Cooperative federalism	1,242	1,594	1,714

Now that the descriptive statistics have been explained, and the conducted analysis has been validated, it is time to move on to the results of the analysis. The results will show that the variables relating to the hypotheses do not report significant findings. However, the dual/cooperative distinction does result in a significant relationship.

6. Results

Table 4 displays the results of the analysis. All the independent variables reported findings with little statistical significance, but the control variable of cooperative federalism did result in a significant relationship. All models reported the same results regarding significance. Model 1 has focused on asymmetric federations (H1), model 2 has taken into account federal origins (H2), and the third model has related to the interaction between these two.

Table 4. Multiple Linear Regression Analysis of the Autonomy of Constituent Units and the Independent and Control Variables

	Model 1	Model 2	Model 3
(Constant)	126,131 (107,010)	143,532 (102,107)	158,462 (113,578)
NBU	4,970 (17,929)		24,864 (26,854)
RBU	-4,795 (17,890)		16,401 (27,089)
Bottom-up		-9,900 (15,037)	5,009 (20,163)
NBU*Bottom-up			-40,534 (38,658)
RBU*Bottom-up			-43,120 (39,066)
Ethnic division	-18,696 (37,352)	-19,708 (33,504)	2,971 (43,133)
Log of landmass	-9,936 (12,518)	-9,940 (11,581)	-8,212 (13,042)
Log of population size	14,209 (21,718)	13,605 (19,735)	8,842 (22,831)
Cooperative federalism	-0,804* (0,316)	-0,911* (0,346)	-1,012* (0,383)
R ²	0,300	0,307	0,395
Adjusted R ²	0,037	0,103	-0,024
N	23	23	23

*Note: OLS regression coefficients with standard errors in brackets. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$*

Model 1 has tested the first hypothesis by examining the autonomy of NBUs and RBUs. NBUs enjoy more autonomy, while RBUs have less autonomy. The results are not significant, however. Finally, constituent units have more autonomy in dual federations as opposed to cooperative federations, according to this model.

The second model has focused on federal origins (H2). Bottom-up federations contain less, not more, autonomy for constituent units, compared to top-down federations. However, these effects are not significant. Lastly, the dual/cooperative character of a federation has a significant effect on the autonomy of constituent units, which is higher in dual federations.

The third and last model has devoted attention to the interaction effect of the two independent variables. Both interaction variables negatively impact the autonomy of constituent units, despite the two independent variables displaying a positive relationship in this model. This means that the individual independent variables better explain the variance in the autonomy of constituent units than the interaction effect between these two independent variables. Again, these findings are not significant, but the findings of the dual/cooperative variable from models 1 and 2 are replicated by the third model. Hence, constituent units enjoy more autonomy in dual federations than in cooperative federations, according to all three models.

Now that the results of the conducted analysis have been explained, the next task involves discussing and interpreting these results in light of the theoretical framework. The following discussion will address that task.

7. Discussion

The variables relating to the two hypotheses did not report significant results. This has to do with the fact that asymmetric federalism is mainly symbolic (though successful) and that the origins of federations do not have a decisive effect, given that federalism is a constant process

between the different tiers of government. Nevertheless, constituent units dispose of more autonomy in dual federations as the federal government cannot coordinate the policy making process across different constituent units.

The first hypotheses (asymmetry) can be rejected. The found B coefficients resemble the expectations, but the effects did not prove significant. This indicates that the concerns raised by Zuber (2011) might prove less worrisome. Asymmetry does not lead to a tension between NBUs (who want a special status) and RBUs (who want equal status). Asymmetry grants mainly a symbolic special status to NBUs. It is this symbolism, however, that these NBUs have desperately sought and therefore keeps the federation together.

The second hypothesis (origins) can be rejected as well. The division of powers is not something that is fixed and laid out at the founding of a federation. It is rather a continuous struggle that evolves over time (Bednar, 2011; Dardanelli, Kincaid, Fenna, Kaiser, Lecours, Singh, et al., 2019). Consequently, the origins of a federation (bottom-up or top-down) might have effects on the distribution of powers in the short term, but certainly not in the long term. The hypothesis was based in part on Watts et al. (1996), who noted that residual powers tend to reside with constituent units in bottom-up federations and with the central government in top-down federations. The results contradict this, however, by showing that residual powers tend to reside with the sub-national level in both types of federations. This is the case in 20 out of 24 federal states (appendix 4).

One variable did result in significant findings and that had to do with the dual/cooperative character of federal states. Constituent units enjoy more autonomy in federations where the different powers are more or less separated between different tiers of government. This means that the federal government makes laws regarding some policy areas and the constituent units regarding other areas. Crucially, they stay out of each other's areas as much as possible. In contrast, a cooperative federation denotes a structure in which both

tiers are involved in same policy areas. Consequently, federal laws have priority over sub-national laws in case of inconsistencies. In addition, the federal government has the authority to coordinate policy between different constituent units. To conclude, the federal government has more powers and the constituent units enjoy less autonomy.

Now that the results have been interpreted, it is time to draw the conclusions. The main contribution to the literature has to be stressed, which states that asymmetric federalism can be a success story and that federalism remains a constant struggle over the division of powers. Finally, the limitations and suggestions for future research have to be noted.

8. Conclusion

This master thesis has aimed to make a contribution to the study of federalism and the autonomy of constituent units in particular. It has done so by formulating two concrete hypotheses, relating to the asymmetry (H1) and origins (H2) of federations. Regarding asymmetric federations, NBUs do not enjoy more autonomy than RBUs. Still, their special status is recognized, which meets their demands and keeps the federation together. The RBUs' demands are met as well, as they do not enjoy significantly less autonomy in practice than the NBUs. To conclude, the symbolic character of an asymmetric federation can solidify the structure rather than make it less stable.

The origins of federations cannot account for the power distribution between the different tiers of government. There might be an effect relating to the way a federation was formed and likewise could have implications for the distribution of powers right after the formation, but that effect is likely to disappear in the long run. The initial relationship does not affect how different tiers of government will have a continuous disagreement over the boundaries of competences.

Finally, constituent units dispose of more powers in dual federations as opposed to cooperative federations. In cooperative federal states, policy areas mainly overlap, which means both tiers of government are involved. Consequently, the federal government has to coordinate the policy making process between different sub-national government. In addition, inconsistencies between national and sub-national laws result in a settlement by national laws.

There are several limitations to the analysis that are worth pointing out. Future research could improve on the conducted analysis by taking these limitations into account. First, the division of powers has been based on the constitutions, but this can contrast with reality. For instance, the American constitution does not authorize the federal government to make policy regarding housing. Nevertheless, there exists a federal Department of Housing and Urban development (USAGOV, 2022). Future research should examine both the constitutional division of powers and the division of powers that exists in practice. This could be done, for instance, by supplementing the constitutional structures with ordinary laws.

Second, the division of powers could be made more accurate by increasing the number of policy areas. As an example, the policy area of education could be split up into primary (e.g. residing with the constituent units), secondary (concurrent), and higher (federal) education. This master thesis has coded all policy areas as one concurrent power, but splitting them up would result in one power residing with the constituent units, one with the federal government, and one with both of them.

Second, the population is small (24 federal states) and larger populations have higher chances of finding statistical relationships. Nevertheless, examining the whole population of federal states means that the findings are directly applicable. Therefore, future research might want to include former federal states as well (e.g. Yugoslavia, Federal Republic of Central America).

Finally, the control variable of ethnic division has not taken into account differences between constituent units. Lijphart (2012, pp. 183-185) suggests that a study regarding ethnicity and federalism should take into account the congruence of constituent units. The US and Belgium are more or less equally diverse according to the HIEF Dataset, but Belgian diversity is much more geographically concentrated in the three regions, whereas American diversity is more or less dispersed across the country. Future research should thus include the interaction between ethnic diversity and the (in)congruence of the constituent units.

These limitations notwithstanding, this master thesis has moved one step forward in the understanding of federalism. It is the first quantitative study that has included all contemporary federations, rather than using a sample. The findings that asymmetric federalism is mainly symbolic, but still needed, and that the initial relationship is subject to continuous change therefore apply directly to the contemporary population of federal states. Given the remarkable differences between them (see appendices), federalism is a phenomenon that certainly merits further study.

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Appendix 1. States that Identify as Federations

States that identify as federations	Constituent units	Number of constituent units
United States (1789)	States	50
Venezuela (1811)	States	23
Switzerland (1848)	(Half) Cantons	23/26
Argentina (1853)	Provinces	23
Canada (1867)	Provinces	10
Brazil (1891)	States	26
Australia (1901)	States	6
Mexico (1917)	States	31
Austria (1920)	<i>Länder</i>	9
Pakistan (1947)	Provinces	4
Germany (1949)	<i>Länder</i>	16
India (1950)	States	28
Nigeria (1954)	States	36
Malaysia (1963)	States	13
United Arab Emirates (1971)	Emirates	7
Micronesia (1978)	States	4
St. Kitts and Nevis (1983)	Islands	1
Ethiopia (1991)	States	9
Belgium (1993)	Communities (languages) and Regions (geographic territories)	3 and 3
Russia (1993)	Republics, Krays, Oblasts, Federal Cities, Autonomous Oblasts, and Autonomous Okrugs	85
Bosnia and Herzegovina (1995)	Entities	2
Somalia (2004)	Federal Member States	6

Iraq (2005)	Governorates	18
Nepal (2015)	Provinces	7

Note: Federal identifications have been based on the Constitute project, <https://constituteproject.org/?lang=en>, accessed on March 11 2022.

Appendix 2. Asymmetry in Federations

Federation	Asymmetry	Remarks
United States (1789)	No	
Venezuela (1811)	No	
Switzerland (1848)	No	Some might argue that the existence of half cantons makes Switzerland an asymmetric federation. These half cantons are the result of a splitting of cantons. This means that two half cantons are counted as one on the federal level (e.g. regarding equal representation in the second chamber), but as two on the cantonal level as each has its own autonomous government.
Argentina (1853)	No	
Canada (1867)	Quebec	Art. 93 of the constitution assigns powers regarding education to the constituent units, but with some restraints. These restraints, however, do not apply to Quebec.
Brazil (1891)	No	
Australia (1901)	No	
Mexico (1917)	No	
Austria (1920)	No	
Pakistan (1947)	No	
Germany (1949)	No	
India (1950)	The states of Maharashtra, Gujarat, Nagaland, Assam, Manipur, Andhra Pradesh, Sikkim, Mizoram, Arunachal Pradesh, Goa, Karnataka	Art. 371 of the constitution allocates distinct responsibilities to the prime minister and/or governor of a respective state regarding particular policy areas.

Nigeria (1954)	No	
Malaysia (1963)	The states of Sabah and Sarawak	The two constituent units on Borneo enjoy special status. The constitutions grants them more powers and veto power in some cases of constitutional amendment.
United Arab Emirates (1971)	The Emirates of Abu Dhabi and Dubai	The legislature has to approve of proposals with a majority of 5 out of 7 emirates. Abu Dhabi and Dubai, however, each dispose of veto power.
Micronesia (1978)	No	
St. Kitts and Nevis (1983)	No	Although the administration of St. Kitts and Nevis could be regarded as asymmetric, Nevis in fact constitutes the only constituent unit. Only Nevis has its own autonomous government and Kitts is rather governed like a federal territory.
Ethiopia (1991)	No	
Belgium (1993)	The Flemish and Walloon Regions; the Dutch and French speaking Communities	The Dutch and French speaking communities dispose of more powers than the German speaking community. Likewise, Flanders and Wallonia dispose of more powers than Brussels.
Russia (1993)	Republics, Krays, Oblasts, Autonomous Oblasts, Federal Cities, Autonomous Okrugs	The constitution divides the constituent units into six different categories. Only republics clearly distinguish themselves as they enjoy the right to sanction their own constitutions. Other constituent units can have their own charter and legislation.
Bosnia and Herzegovina	No	

(1995)		
Somalia (2004)	No	
Iraq (2005)	No	Several governorates can join together to form a region. Although Kurdistan is assured of its own region, a region does not enjoy any more powers than individual governorates.
Nepal (2015)	No	

Sources: Siaroff (2013, p. 157), Stepan (2004, p. 36), Watts (1996), Burgess (2006), Griffiths et al. (2020), the *Constitute project*, <https://constituteproject.org/?lang=en>, accessed on several dates.

Appendix 3. Origins of Federal States

Federation	Origins	Clarification
United States (1789)	Bottom-up	The constitution of 1789 was ratified by all thirteen states that participated in the process.
Venezuela (1811)	Bottom-up	Seven provinces declared their independence from Spain and their delegates met in order to draft a constitution. They had their own constitutions before joining the federation.
Switzerland (1848)	Bottom-up	It is worth mentioning that the federal constitution of 1848 was approved by a majority of voters and cantons, but the cantons of Schwyz, Ticino, Uri, Wallis, Zug and the half cantons of Appenzell Innerrhoden, Nidwalden, and Obwalden (6,5 out of 22) rejected it.
Argentina (1853)	Bottom-up	Argentine federalism, much like the European Union, has its origins in a peace process between provinces that used to engage in violent conflict.
Canada (1867)	Bottom-up	Canada is the result of a coming together of Nova Scotia, New Brunswick, and the United Province of Canada (Quebec and Ontario). Other provinces were later added to the federation.
Brazil (1891)	Top-down	The political elites of Brazil introduced federalism in order to account for regional differences and keep the country together.
Australia (1901)	Bottom-up	Six distinct colonies came together with the purpose of uniting into one commonwealth.
Mexico (1917)	Top-down	Mexico has some former experience with federalism, but had been a unitary state before the constitution of 1917 set out a federal structure.
Austria (1920)	Bottom-up	After WOI the constituent units initially opted to join Germany, but were not allowed to do so by international pressures.

		Vorarlberg wanted to join the Swiss federation, but its application was declined. In the end, seven constituent units formed a federation. Within two years, Burgenland (that used to be part of Hungary) joined as well and Wien (Vienna) became a <i>Bundesland</i> on its own (after being part of Niederösterreich).
Pakistan (1947)	Bottom-up	The Pakistani provincial assemblies or their voters in a referendum, respectively, voted to join the Pakistani federation.
Germany (1949)	Top-down	Although the Republic of 1949 was in part shaped by federal structures that had existed for a long time in Germany, the new republic was not the result of a coming together of the constituent units. In fact, the constituent units were changed by the federal government. Among others, Prussia was dissolved, constituent units like Lübeck were integrated into others, and Baden and Württemberg were put together into one <i>Land</i> . This all was the result of an effort to harmonize the <i>Länder</i> in terms of size (both landmass and population).
India (1950)	Top-down	The constitution adopted the term ‘Union of States’ as opposed to ‘federation’ in order to clarify that the federal state was not the result of a coming together of (former) sovereign states, but rather the preservation of central unity.
Nigeria (1954)	Top-down	The constitution of 1954 was the first constitution of Nigeria that declared the country federal. At that moment Nigeria was not an independent country. The constitution was not the result of a coming together, but rather an effort to account for the ethnic differences within the country.
Malaysia (1963)	Bottom-up	The Bornean states of Sabah and Sarawak, together with the already existing federation

		of Malaya (1957), agreed to form the federal state of Malaysia.
United Arab Emirates (1971)	Bottom-up	The seven emirates voluntarily joined the UAE. Qatar and Bahrain used to be part of the process, but withdrew. Ras Al Khaimah initially did not join, but did so later on.
Micronesia (1978)	Bottom-up	Four states joined together. Initially, Palau, the Mariana Islands and the Marshall Islands were involved in the formation process as well, but they chose to withdraw.
St. Kitts and Nevis (1983)	Top-down	Federalism in the Caribbean was initiated by the British Empire as an effective means of governing its colonies. Consequently, federalism was adopted in order to keep together several Caribbean islands. Many islands, however, sought independence and St. Kitts and Nevis were left as the only islands in the federal structure. Nevis enjoys a special status in order to keep it in.
Ethiopia (1991)	Top-down	Ethiopia used to be a unitary state, but was plagued with ethnic violence. This resulted in the adoption of federalism in 1991. In 1995, the constituent units were restructured and reduced from 15 to 9.
Belgium (1993)	Top-down	Belgium used to be a unitary state, but in the sixties and seventies of the Twentieth century a process of devolution was triggered that culminated in a full federal state in the nineties.
Russia (1993)	Top-down	Some constituent units (mainly ethnic minorities) did get the chance to negotiate on their status within the newly promulgated constitution after the dissolution of the Soviet Union, but these negotiations were with the federal government rather than other constituent units.
Bosnia and Herzegovina (1995)	Top-down	The territory of Bosnia and Herzegovina was added to Yugoslavia after the First World

		War. In 1974, a federal structure was introduced in this constituent unit of Yugoslavia. During the dissolution of Yugoslavia, the Serbian part did not agree to leave Yugoslavia, whereas the Bosniak and Croat part wanted to do so. In 1995, a new constitution was promulgated, based on yet existing federal structures.
Somalia (2004)	Top-down	Federalism was introduced in 2004 in order to account for violent conflicts that had been plaguing the country.
Iraq (2005)	Top-down	Iraq used to be a unitary state, but the US invasion ushered in a new regime that tried to take into account the ethnic division (Sunni, Shia, and Kurds) of the country.
Nepal (2015)	Top-down	Federalism is the result of a process of devolution that began in the 1960s.

Sources: Siaroff (2013, p. 157), Stepan (2004, p. 36), Watts (1996), Burgess (2006), Griffiths et al. (2020), the Constitute project, <https://constituteproject.org/?lang=en>, accessed on several dates.

Appendix 4. Constitutional Division of Powers

Federation	Residual Powers	Division of Powers Lists
United States (1789)	Constituent units	No list, only federal powers mentioned
Venezuela (1811)	Constituent units	Federal, constituent unit, and municipal lists
Switzerland (1848)	Constituent units	No list, mentions federal and concurrent powers
Argentina (1853)	Constituent units	Federal lists
Canada (1867)	Federal government	Federal and constituent unit lists, also mentions some concurrent powers
Brazil (1891)	Constituent units	Federal and concurrent lists
Australia (1901)	Constituent units	Federal list
Mexico (1917)	Constituent units	Federal list
Austria (1920)	Constituent units	Federal, constituent unit, and concurrent lists
Pakistan (1947)	Constituent units	Federal and concurrent lists
Germany (1949)	Constituent units	Federal and concurrent lists
India (1950)	Federal government	Federal, constituent unit, and concurrent lists
Nigeria (1954)	Constituent units	Federal and concurrent lists
Malaysia (1963)	Constituent units	Federal, constituent unit, and concurrent lists
United Arab Emirates (1971)	Constituent units	Federal list
Micronesia (1978)	Constituent units	Federal and concurrent lists
St. Kitts and Nevis (1983)	Federal government	Constituent unit lists
Ethiopia (1991)	Constituent units	Federal and constituent unit lists
Belgium (1993)	Constituent units	No list, some powers assigned by the constitution, others can be assigned by ordinary law
Russia (1993)	Constituent units	Federal and concurrent lists

Bosnia and Herzegovina (1995)	Constituent units	Federal list
Somalia (2004)	<i>Division by law</i>	some powers assigned by the constitution, others can be assigned by ordinary law
Iraq (2005)	Constituent units	Federal and concurrent lists
Nepal (2015)	Federal government	Federal, constituent unit, municipal, and concurrent lists

Sources: the *Constitute project*, <https://constituteproject.org/?lang=en>, accessed on several dates.

Appendix 5. Bicameralism

Federation	Cameralism	Representation of Constituent Units	Appointment
United States (1789)	Bicameral	Each constituent unit has equal representation	Direct election
Venezuela (1811)	Unicameral	<i>No second chamber</i>	<i>No second chamber</i>
Switzerland (1848)	Bicameral	Each constituent unit has equal representation	Direct election
Argentina (1853)	Bicameral	Each constituent unit has equal representation	Direct election
Canada (1867)	Bicameral	The representation of provinces ranges from 6 to 24 MPs	Appointment by federal government
Brazil (1891)	Bicameral	Each constituent unit has equal representation	Direct election
Australia (1901)	Bicameral	Each constituent unit has equal representation	Direct election
Mexico (1917)	Bicameral	Each constituent unit has equal representation	Direct election
Austria (1920)	Bicameral	The representation of constituent units ranges from 3 to 12 MPs	Indirect election
Pakistan (1947)	Bicameral	Each constituent unit has equal representation	Indirect election
Germany (1949)	Bicameral	The representation of constituent units ranges from 3 to 6 MPs	Indirect election
India (1950)	Bicameral	Representation is proportional to population	Indirect election

Nigeria (1954)	Bicameral	Each constituent unit has equal representation	Direct election
Malaysia (1963)	Bicameral	Each constituent unit has equal representation, but the majority is appointed by federal government	Appointment by federal government
United Arab Emirates (1971)	Unicameral	Each constituent unit has equal representation during voting and Dubai and Abu Dhabi each dispose of veto power	Election by emirates
Micronesia (1978)	Unicameral	Each constituent unit has equal representation during voting	Direct election
St. Kitts and Nevis (1983)	Unicameral	Representation is proportional to population	Direct election
Ethiopia (1991)	Bicameral	Representation is proportional to population	Indirect election
Belgium (1993)	Bicameral	Representation is proportional to population	Indirect election
Russia (1993)	Bicameral	Each constituent unit has equal representation, but the president may appoint up to 10% of the MPs on his own	Indirect election
Bosnia and Herzegovina (1995)	Bicameral	Each ethnic group has equal representation	Indirect election
Somalia (2004)	Bicameral	Each constituent units has equal representation	Direct election
Iraq (2005)	Unicameral	<i>Constitutionally prescribed second</i>	<i>Constitutionally prescribed second</i>

		<i>chamber has not been put in place yet</i>	<i>chamber has not been put in place yet</i>
Nepal (2015)	Bicameral	Each province has equal representation, 3 out of 59 MPs are appointed by the president	Indirect election

Note: The points of MP appointments based on constituent unit representation, but appointed by the federal government will be divided by 2.

Sources: Siaroff (2013, p. 157), Stepan (2004, p. 36), Watts (1996), Burgess (2006), Griffiths et al. (2020), the Constitute project, <https://constituteproject.org/?lang=en>, accessed on several dates.

Appendix 6. Constitutional Amendment Procedures

Federation	Procedure for amendment
United States (1789)	A constitutional amendment has to be ratified by three-fourths of states.
Venezuela (1811)	<i>No constituent unit majority needed.</i>
Switzerland (1848)	A simple majority of cantons is needed for a constitutional amendment.
Argentina (1853)	<i>No constituent unit majority needed.</i>
Canada (1867)	Two-thirds of the provinces have to approve of an amendment.
Brazil (1891)	Three-fifths of senators have to approve of an amendment.
Australia (1901)	A simple majority of states is needed for a constitutional amendment.
Mexico (1917)	A simple majority of states is needed for a constitutional amendment.
Austria (1920)	<i>No constituent unit majority needed.</i>
Pakistan (1947)	Two-thirds of the provinces have to approve of a constitutional amendment.
Germany (1949)	A simple majority of constituent units in the federal legislature have to approve of a constitutional amendment.
India (1950)	<i>No constituent unit majority needed.</i>
Nigeria (1954)	A two-thirds majority of states is needed.
Malaysia (1963)	No majority of states is needed, but Sabah and Sarawak have veto power regarding some matters.
United Arab Emirates (1971)	A majority of five out of seven emirates is needed. Abu Dhabi and Dubai have veto power.
Micronesia (1978)	A three-fourths majority of states is needed.
St. Kitts and Nevis (1983)	<i>No constituent unit majority needed.</i>
Ethiopia (1991)	A simple majority of constituent units is needed.
Belgium (1993)	A simple majority of constituent units is needed.
Russia (1993)	A simple majority of constituent units is needed.
Bosnia and	A two-thirds majority of ethnic groups is needed.

Herzegovina (1995)	
Somalia (2004)	A two-thirds majority of federal member states is needed.
Iraq (2005)	<i>No constituent unit majority needed.</i>
Nepal (2015)	A two-thirds majority of provinces is needed.

Sources: Siaroff (2013, p. 157), Stepan (2004, p. 36), Watts (1996), Burgess (2006), Griffiths et al. (2020), the *Constitute* project, <https://constituteproject.org/?lang=en>, accessed on several dates.

Additional Data

Appendices 1 to 6 display in detail information on some of the variables (both dependent and independent), but not all of them. The other data, that do not include detailed explanations, is available upon request. This includes the scores of each country on each dimension (division of powers, fiscal matters, safeguards) of the dependent variable, data regarding the ethnic division of countries, and data that relate to the dual/cooperative distinction.

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