University of Windsor

Scholarship at UWindsor

June 2021

Sub-State Nationalism and Intergovernmental Fiscal Policy: An Examination of the Netherlands and Spain

Eric Bryan Hubberstey
hubbers@uwindsor.ca

Sub-State Nationalism and Intergovernmental Fiscal Policy:

An Examination of The Netherlands and Spain

By

Eric Bryan Hubberstey

A Major Research Paper
Submitted to the Faculty of Graduate Studies
Through the Department of Political Science
in Partial Fulfilment of the Requirements for
the Degree of Master of Arts
at the University of Windsor

Windsor, Ontario, Canada

2021

Sub-State Nationalism and Intergovernmental Fiscal Policy:

An Examination of The Netherlands and Spain

by

Eric Bryan Hubberstey

APPROVED BY:

_____
T. Najem
Department of Political Science

_____
J. Sutcliffe, Advisor
Department of Political Science

May 25, 2021

DECLARATION OF ORIGINALITY

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that I have included copyrighted material that surpasses the bounds of fair dealing within the meaning of the Canada Copyright Act, I certify that I have obtained a written permission from the copyright owner(s) to include such material(s) in my thesis and have included copies of such copyright clearances to my appendix.

I declare that this is a true copy of my thesis, including any final revisions, as approved by my thesis committee and the Graduate Studies office, and that this thesis has not been submitted for a higher degree to any other University or Institution.

ABSTRACT

Nations without the distinct legal status of statehood have become increasingly important in the domestic politics of some European countries. Recent secession referenda in various countries (most notably Spain and the United Kingdom) have highlighted this trend. This study examines the impact that sub-state national identities have on the disbursement of intergovernmental transfer payments in two unitary states: the Netherlands and Spain. These cases were selected to conduct a "most different systems" analysis and examined transfers from the central governments to their respective highest levels of regional governance in the period between 2010 and 2018.

Established theory on the interaction between identity and institutions supports the hypothesis that regions with more distinct separate identities will receive preferential treatment from their state governments than those without. This study used support for sub-state nationalist parties as a proxy measure for relative strength of their respective identities, which combined with the independent fiscal capacity of the regions was regressed against the amount of transfers received to understand any relationship that might exist.

The results of the analysis of these variables indicates that although they are more effective predictors in Spain, there is a significant positive relationship in both countries between sub-state national identities and intergovernmental transfer payments. Individual analysis of the Netherlands found that, counter to established theory on intergovernmental transfers, regions with higher fiscal capacities also received more transfers from the government. Analysis of Spain found that, with a couple of notable exceptions, regions with higher degrees of sub-state nationalism received more transfers from the central government. This study fills gaps in the literature that previously did not specifically examine the relationships between these variables and highlights some areas for future study, both at smaller case-levels and broader scales.

DEDICATION

This work is dedicated to my family, friends, and all of those who contributed to my success.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

CHAPTER ONE – INTRODUCTION AND RESEARCH DESIGN

1.1 – Key Terms and Scope

One key premise of a state, and subsequently the international system as a whole, is the existence of distinct national identities. Occasionally denominated as nation-state, this term is largely synonymous with the shortened "state" label. The terms are often interchangeable given that virtually all current states have (though to varying degrees) national identities associated with them. An important distinction comes when the words are separated. A state is a legal entity which has the ability to exercise sovereignty over a permanent population within a well-defined territory.[1] A nation, however, is a common group identity which may or may not have a bearing on the legal entity within which that group resides. Simply put, a state is a legal entity based on the people and territory under its control, and a nation (or national identity) is a group of people who identify themselves based on a common ethnicity, culture, or occasionally language.[2] A group of people, for example Indigenous peoples of Canada or Kurdish people in the Middle East, may belong to a nation which does not have legal status as a state. This is considered a "non-state" or "sub-state" nation, which is the focus of this study.[3]

The concept of sub-state nationalism is extremely important in Europe. Its long history of conflicts and malleable borders combined with the sheer number of sub-state national identities make it a prime example for academic study. Though many states in Europe have undergone transitions in and out of democracy, the sub-states nations have largely remained consistent over its history. From a normative institutionalist perspective, the exceptionality of Europe makes this

---

[1] Shannon L. Blanton and Charles W. Kegley, "Interpreting World Politics" in World Politics: Trend and Transformation, (Boston, MA: Cengage Learning, 2010): 16-17
[2] *ibid*, 17
[3] *ibid*

particular focus of study not only interesting, but relevant to the study of both identity politics and international relations.

The importance of nationalism in the study of political science, with specific regard to its interaction in the regional and global economic systems is exemplified in not only historical observations, but the modern geopolitical climate. Sub-state nationalism has been politically relevant in virtually every state where it exists, and in many cases has led to substantive domestic political changes. Quebec for example has seen its separate national identity fundamentally shift the political environment of Canada numerous times in the past 60 years. From the FLQ and militant separatism in the 1960's, to today where the Quebec nationalist party, the *Bloc Québécois*, holds almost ten percent of the seats in Canada's parliament.[4] Although, as demonstrated with the example of Canada, sub-state nationalism is apparent in many states, the European example is exceptional due to its extensive and complex history. The impact of sub-state nationalism is of growing importance to the field of political economy and identity studies, and this project will provide a useful examination of the fields.

1.2 - Research Design and Methods

This study seeks to answer a single overarching question: does the amount of sub-state nationalist sentiment within a state have an impact on the disbursement of intergovernmental transfer payments from their respective central governments? This question will be answered under a normative institutionalist theoretical framework to understand the power relations between the overarching central state government and the sub-state nations which exist within the regions of the countries being examined. The research will focus on two European states;

---

[4] "Federal Election 2019 Live Results," CBCnews, accessed February 6, 2021, https://newsinteractives.cbc.ca/elections/federal/2019/results/

Spain, and the Netherlands. These countries were selected based on the pervasiveness of regional sub-state nationalism, with Spain having perceptually high levels in general, and The Netherlands having comparatively low levels. Despite these differences, both are unitary states which contain at least some amount of regional identity and language groups. This study is employing the most-different case study design as a means of comparing the differences in variable interaction observed in systems that, while similar in some fundamental ways, are largely divergent in critical aspects.

The analysis will be conducted using the individual regions receiving financial payments from their central governments, either through capital grants or equalization schemes as the cases for study. The time-series data will also be analyzed separately to highlight any potential trends in this data. The selection of the regions being studied are the Spanish autonomous communities and the Dutch provinces as both are comparatively equal units of analysis in terms of their size and relative populations. The provinces of Spain are not comparable to any regional body in the Netherlands, and the municipalities are not particularly relevant to this study. Throughout this paper, the term "region" may be used to refer to either a Spanish autonomous community or a Dutch province.

The study will be conducted based on three specific variables. The dependent variable for this study is the amount of transfers received by regional governments from their respective national governments (β_0). The value of β_0 will be comprised of different aggregates for each country as explained in Chapter Four. This will then be analyzed against the independent variables, which will be the percentage of votes attained by sub-state nationalist parties in their respective regional elections (β_1) and the relative wealth of the regions (β_2). Both of these independent variables will be compared to the dependent variable using linear regressions, t

tests, and f tests to determine the significance of the variables.[5] The data will be analyzed over a period of nine years; from 2010 until 2018. The collection will begin in 2010 because that is the first year following changes to the Spanish equalization system. Since the Netherlands has not made any substantial changes to their system, this year provides a more uniform comparison between both countries and would eliminate the variable of legal changes to the system. The dataset will end in 2018 as that is the last year where data for both countries is publicly available.

The hypothesis (H_1) for this study is that a relationship will be observed between the dependent variable and both independent variables ($\beta_0 = \beta_1 + \beta_2 \neq 0$). The null hypothesis of this study is that no change will be observed in the dependent variable when regressed against the independent variables ($\beta_0 = \beta_1 + \beta_2 = 0$).

1.3 - Limitations

The very nature of this study examines the fiscal relationships between regions and their national level governments. While historical backgrounds and other intricacies may be briefly discussed, they will not be the focal point of this study. Therefore, while some relationships may be established, there could be other factors which influence the amount of intergovernmental transfers which are not included in this study.[6] Furthermore, the study is limited to the cases being presented and may not be generalizable to other countries given the highly unique nature of many regional-state relationships.

---

[5] Each procedure will be explained in more detail in the Fifth Chapter.
[6] Other factors may include emergencies requiring central financial assistance to the regions, unique events which received one-off central funding, economic distress in a region (or the country as a whole), among others.

CHAPTER TWO – REVIEW OF THE LITERATURE

2.1 – Understanding the Nation

Prior to defining the scope of the term "nationalism" as it will be operationalized for this study, debate on the creation and origin of nationalism and the nation must be explored. Benedict Anderson outlines a rather pessimistic view of the concept of a nation, describing it as an "imagined community", both limited and sovereign.[7] It is "imagined" because those within it do not, and will never know the vast majority of the other members.[8] Further, the nation is limited in the sense that it is contained within a finite area, and sovereign as nations have slowly transitioned from divine hierarchical dynasticism to more direct popular rule.[9] Anderson asserts that the origins of these imagined communities partially arose from this transition, as many during the enlightenment began to seek new meaning for their own mundanity and mortality.[10] This led to the creation of the overall concept of the imagined community, where regardless of inequalities or exploitation, the nation is viewed as a community based on "deep, horizontal comradeship" that millions of people will kill and die for.[11]

One particularly interesting example given by Anderson to illustrate the importance of the nation is how early colonizers in the Americas engaged in more cultural than physical extermination. The views expressed through the practice of cultural destruction in the Americas describe a substantial reverence of the very concept of a nation; if the cultural origins of the nation derive from the attribution of meaning to one's death, then the murder of indigenous

---

[7] Benedict Anderson, "Introduction" in *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, *Revised Edition* (London, UK: Verso Books, 2006): 6
[8] *Ibid*
[9] *Ibid*, 7
[10] *Ibid*, 11
[11] *Ibid,* 7

persons would only strengthen their nations.[12] The colonizers viewed assimilation and dilution of

indigenous culture as the primary method for eliminating existing nations on the continent. This

is fundamentally important for understanding contemporary nationalism, especially as it relates

to the historical conflict between many state and sub-state actors and the development of regional

identities.

An opposing view to this was famously proposed by Anthony D. Smith through his

examinations of the origins and development of nations and identities. His view focuses on the

historical and cultural developments which lead to the creations of identities and the various

elements which comprise an overarching national identity. Smith underscores the plurality of

factors by highlighting how, in some cases such as with Germany and Switzerland, religion may

divide otherwise similar ethno-linguistic populations.[13] Using the example of ancient Greece,

Smith demonstrates that different types of identity can exist – and in fact often coexist within a

society. While there was no formal "Greek" nation, there was a Greek community which was

comprised of culturally and linguistically Hellenic peoples irrespective of their legal status

within their different city-states.[14] This duality is commonly understood as the difference

between civic and ethnic nationalisms.

To Smith, the civic model of a nation is a fundamentally western conception based

primarily on the spatial and territorial element.[15] Not only must the territory be clearly

demarcated, but it must have historic linkages to those who inhabit it while being culturally

significant.[16] A civic nation must also possess what Smith denotes as *a patria*; common political

---

[12] *Ibid*, 14
[13] Anthony D. Smith, "Introduction" in *National Identity* (London, UK: Penguin Books, 1991): 7
[14] *Ibid*, 8
[15] *Ibid*, 9
[16] *Ibid*

institutions and wills representing those inhabitants of the aforementioned lands, such as was observed with the unification of the provinces of the Netherlands to defend against Habsburg rule in the late 16th century.[17] Similarly, the nation must also guarantee common legal rights to its inhabitants which represent common values among the population.[18] While the civic model of the nation is more conceptually relevant for the analysis of variables in this study, the ethnic conception of the nation remains relevant .

The "non-western" model of the nation differs principally in the emphasis placed on native culture and one's birth into it.[19] Unlike in the civic model, individuals cannot choose the nation to which they belong – even if one emigrates from the physical nation, they will remain irrevocably linked to their ethnic nationality.[20] Smith argues that the laws are typically less important than language, custom, and culture in ethnic nations.[21] Instead, the community is motivated by shared histories and myths in their national aspirations, making society more susceptible and enticing for populist leaders.[22] In his analysis, Smith does recognize that these are more general theories which cannot be applied entirely to every situation, and states that all nations have, to varying degrees, elements of both ethnic and civic models.[23] This blend typically will contain the following: historic territory, common myths and historical memories, a common culture, uniform legal rights and duties for members, and a common economy with territorial mobility.[24] These elements are critical to understanding the composition of a nation, and perhaps even more so to understanding the operation and development of sub-state nations.

---

[17] *Ibid, 10*
[18] *Ibid*, 11
[19] *Ibid*
[20] *Ibid*
[21] *Ibid*
[22] *Ibid*
[23] *Ibid*, 13
[24] *Ibid*, 14

This construction of the nation also imparts credibility to the idea that state institutions have the ability to fundamentally transform the identities contained within them and conversely the nation's ability to alter the state's behaviour.

2.2 – Nationalism

The overall sentiment of nationalism as it is contemporarily understood is divergent from its theoretical origins. Nationalism is beyond merely an affinity towards one's nation as could be understood from Anderson or Smith. While there are varying degrees to the intensity of the expression of nationalism, in their article examining identity in a united Germany, Blank and Schmidt provide an excellent umbrella to understand the concept of modern nationalism. The authors note that nationalism (and its degrees of intensity) is a form of expression of one's national identity.[25] Nationalism is a primarily staunch support of one's nation which often rejects ambivalent or negative opinions of it.[26] Nationalism can also be exclusionary, holding a perception that members of said group have unique qualities of superiority. This can but does not always result in the derogation of members of outgroups based on these feelings.[27] Such sensitivities fit more closely with Smith's definition of ethnic nationalism, as it leaves less room for mobility and inclusion.

While this definition can be considered as encompassing, albeit at a rather basic level, the current popular definition of nationalism, it does not necessarily represent the concept of sub-state nationalism which will be applied to this study. The aforementioned article includes the possibility for the expression of nationalism to varying intensities. Dekker *et al* expand on this by

---

[25] Thomas Blank and Peter Schmidt, "National Identity in a United Germany: Nationalism or Patriotism? An Empirical Test with Representative Data," *Political Psychology* 24, no 2 (June 2003): 291
[26] *Ibid*, 292
[27] *Ibid*, 294

propounding that the expression of nationalistic tendencies functions as a hierarchy, with positive and negative types, as well as intensity of expression.[28] They also differentiate between different focuses of nationalistic tendencies, such as regional-national pride, European pride, and internationalism.[29] This article also lays a useful foundation for the definition of sub-state nationalism. This phenomenon occurs when individuals have a positive attitude from one focus (regional pride, for example) and a negative focus from another, such as national pride.[30] The example given in the article is Basque regional nationalism with negative attitudes toward Spain.[31] Therefore, sub-state nationalism can be understood as positive attitudes toward one's specific region which exist simultaneously with negative feelings toward the higher state-level nation. What might cause these negative feelings will of course differ between cases, and even individuals. The intensity of them will also vary between each. Further, it is also possible for those with stronger regional identities to not have negative feelings towards other levels of identity but simply for their feelings towards their region to be more positive or intense than others.

What must be further be understood for the scope of this study is that sub-state nationalism is not necessarily linked with ideals and goals of separatism from their governing national sovereign. In many cases, the dominant sub-state nationalistic rhetoric centres around complex redefinitions of sovereignty, representation, and recognition within the state.[32] Within the current international system, sub-state nations are becoming more interested in playing roles

---

[28] Henk Dekker et al, "Nationalism and its Explanations," *Political Psychology* 24, no 2 (June 2003): 347
[29] *Ibid*, 348
[30] *Ibid*
[31] *Ibid*, 349
[32] Stephen Tierney, "Reframing Sovereignty? Sub-State National Societies and Contemporary Challenges to the Nation-State ," *The International and Comparative Law Quarterly* 54, no 1 (January 2005): 162

of greater importance, with special regard to international organizations.[33] Such changes bear relevance to potential future studies given the relevance of the EU in domestic European politics. Taking on an increasingly supranational role, the EU is gradually shifting the very paradigm of European governance to a post-Westphalian model that emphasizes to a greater extent the prominence of sub-state nations.[34] It is also important for this study because the aim is not to assess likelihood of separatism, or how internal funding allocations may interact with desires for separation.

2.3 - Sub-State Nations and Regions

The legal distinction between a sub-state nation's governance and other levels of governance are of great importance to this study. As has been already outlined, although the significance of a sub-state nation is not limited to its recognition within a state as a legal entity, there are many times where they overlap. In many cases, at least in the West (and in particular Europe), they take the form of a legal entity at a certain level of government within a state. Quebec, Catalonia, Basque Country, Northern Ireland, and Scotland (to name a few) are all prominent sub-state nations that have legal recognition as regional entities within their respective states. While each region's legal positioning within their respective states varies with the governance system of the country, they all represent a level of government that operates at a regional level, which is critical to understanding this concept.

Under a system of federalism (which Spain is increasingly moving towards), representation is affected through the organization of overlapping social groups and communities

---

[33] *Ibid*, 163
[34] *Ibid*, 164

that are tasked with electing different, and often competing bodies of representation.[35] It can also

lead to complex, territorially based identities that are a result of tiered governance.[36] The result

of any system that has separate levels of governance (and subsequently different legislatures) is

the existence of competing interests within the region. Take the example of Quebec which, as

part of the federal Canadian system, utilizes the powers given to it through its legislature to

entrench its national identity, culture, and language within its society.[37] Quebec's history is one

of abundant conflict within the federal system, and it is not alone in this. Catalonia's identity,

which has origins long pre-dating most, has recovered from the era of Franco (1936-1975) by

utilizing its position within the increasingly disintegrating unitary system of Spain to demand

increased autonomy and internal authority.[38]

Catalonia's position within the Spanish system is a gleaming example of the separation of

the identity from the legal, state entity. According to Keating, Catalan nationalism often crosses

the political spectrum and historically clashes on the bases of class identity.[39] As illustrated by

Hamann, this is a clear demarcation that is necessitated by any tiered system of government that

creates competing social groups with different interests at the state and regional levels. While

nationalist parties may have great successes when their popularity is aggregated, there is still

significant competition between them given the nature of the system they interact in. The

institutionalization of regional governance on the basis of identity is incredibly important for this

---

[35] Kerstin Hamann, "Federalist Institutions, Voting Behaviour, and Party Systems in Spain," *Publius* 29, no 1 (Winter 1999): 112
[36] *Ibid*
[37] Michael Keating, "Quebec" in *Nations Against the State: The New Politics of Nationalism in Quebec, Catalonia and Scotland*, (London, UK: Palgrave Macmillan, 1996): 69
[38] Keating, "Catalonia," 123
[39] *Ibid*

study, as it not only can play a role in the financing of these systems, but it can fundamentally alter the lens through which the concept is examined.

2.4 – Factors Influencing Intergovernmental Transfers

  2.4.1 – Structure of Government and Constitution

The governance structure of any two states will be different, and as such will play a role in how money is distributed and spent within the country. The decentralization of governance varies significantly between states; for example, regional governments in Italy collect no taxes from their citizens, but state-level governments in the United States are responsible for approximately 48% of all taxation in the country.[40] How each state, and subsequently each region is governed is a critical factor in whether or not a region will receive payments from the central government at all, as well as how much they will receive. Highlighting Canada as an example – its internally controversial system of equalization payments between provinces are constitutionally enshrined in its federal system.[41] In the European context, Germany also has a constitutionally mandated system for distributing money to the component states of the federal system. In this case. some distribution follows fixed quotas, while certain funds are allocated (per the constitution) in an attempt at maintaining equality between states.[42] Per Article 107 of the German Constitution, there must be financial equalization between state governments to ensure relatively uniform living conditions and public services throughout the entire country.[43] German states can also apply for "supplementary central government grants" for special projects,

---

[40] Tim Bale, "From Government to Governance" in *European Politics: A Comparative Introduction*, (London, UK: Palgrave Macmillan, 2017): 73
[41] Robin Broadway and Frank Flatters, "Efficiency and Equalization Payments in a Federal System of Government: A Synthesis and Extension of Recent Results," *The Canadian Journal of Economics* 15, no 4 (November 1982): 614
[42] Deutsche Bundesbank, "The Reform of Financial Relations in the German Federal System", *Monthly Reports* (September 2014): 34
[43] *Ibid*, 38

which can theoretically create inequality between states so long as the grant is not discriminatory in nature.[44] These grants are occasionally given to reduce general horizontal fiscal imbalance between regions, but are more often distributed in order to directly alleviate the burdens caused by the former partitioning of the country into East and West Germany.[45]

While each state is organized differently, and their formulas or methods of calculation may vary, the general principle remains the same in that the structure of the government and fiscal regulations will play a significant role in the intergovernmental transfer of funds. This is notable in both Canada and Germany and is largely applicable to most de-centralized governments. Both Spain and the Netherlands, the cases for this study, are de-centralized unitary states whose systems of equalization and intergovernmental transfers will be examined more specifically in the next chapter.

2.4.2 – Political Factors

Despite its constitutional validity in many states, intergovernmental transfer payments can create much domestic strife. Within federal systems, equalization is bound to evoke discontent from some actors. In Canada this discontent devolved into intergovernmental conflict in 2004, with multiple Premiers publicly attacking the federal government.[46] While they are not the only province who benefits from transfer payments, Quebec was the first province to champion such a plan to the federal government.[47] The 2004 conflict embodies the intertwining of politics and monetary redistribution, as many believe the changes made by the Harper government were an

---

[44] *Ibid*, 41
[45] *Ibid*
[46] André Lecours and Daniel Béland, "Federalism and Fiscal Policy: The Politics of Equalization in Canada," *Publius* 40, no 4 (Fall 2020): 570
[47] *Ibid*, 575

attempt at winning seats in the regions that most benefited from alterations to the equalization structure.[48]

Once again examining literature on Quebec, it is clear that the level of social programmes available to residents positively correlates with their level of nationalism, or at least positive identification with the *Québécois* identity.[49] During periods of reduction in federal funding and subsequently social development, Quebec saw increased rates and intensity of nationalism.[50] Such a trend would also lend support to the relationship between nationalism and economic organization. Similar to what has been observed in Canada, the central government in the UK created a regional development agency for Scotland in 1965 almost entirely due to nationalist pressures and rising popularity of the Scottish National Party (SNP).[51] Ten years later, a larger and more comprehensive agency was created, again in response to mounting support for Scottish nationalism.[52] This demonstrates the role that national and sub-national politics play on the structure and formation of institutions and their mandates.

2.5 – Institutions and the Development of National Identity

One distinctly pertinent theoretical conceptualization by Michael Keating discusses in detail the intertwining of markets, capital, and nationalism. Keating links nationalism with capitalism by highlighting that transitions to capitalist economies were often motivated by and exercised through the agency of the state.[53] One of the principal motivations of nationalism as it

---

[48] *Ibid*, 581
[49] Daniel Béland and André Lecours, "Sub-State Nationalism and the Welfare State: Quebec and Canadian Federalism," *Nations and Nationalism* 12, no 1 (2006): 83
[50] *Ibid*, 87
[51] Hubert Rioux Ouimet, "From Sub-state Nationalism to Subnational Competition States: The Development and Institutionalization of Commercial Paradiplomacy in Scotland and Quebec," *Regional and Federal Studies* 25, no 2 (2015): 114
[52] *Ibid*
[53] Keating, "Nations, Nationalism and the State," 11

relates to capitalist systems is the ability to provide a common objective and sense of belonging to previously disenfranchised or marginalized groups left behind by economic inequality.[54] In these cases, nationalism is used to counter the disintegrative and fractal nature of capitalist economies and fiscal institutions, which outlines how these societal institutions are indivisible from the nations and identities operating within them.[55]

Additional theory from Rabindranath Tagore supports this postulation. His theoretical approach to nationalism in the west is largely focused on social organization and cooperation through economic intentions. As a political movement, Tagore believes that nationalism is ultimately designed as a motif of self-preservation.[56] It is often connected to the organization of economic power, with national groups seeking to secure more resources and benefits from their society, which clearly fits within the scope and relevance of this study.[57]

In his article on why sub-state nationalism is prevalent in the West, Lecours offers six explanations; one of which is that national identity becomes institutionalized through decentralized governance of regions.[58] With greater autonomy, sub-state nations will receive not only increased legitimacy within their populations, but also the ability to create policies and discourse which further promotes the idea of a distinct nation.[59] A sub-state region which can provide for its citizens will further the notion amongst them that they could exist independently as a legitimate legal entity. The same can also be said of the reverse; where a lack of recognition (of language or autonomy for example) can embolden nationalists within a region, further

---

[54] *Ibid*, 12
[55] *Ibid*, 13
[56] Rabindranath Tagore, "Nationalism in the West", in *Nationalism* (Toronto, ON: Penguin, 2010): 38
[57] *Ibid*, 39
[58] André Lecours, "Sub-state Nationalism in the Western World: Explaining Continued Appeal," *Ethnopolitics* 11, no 3 (2012): 269
[59] *Ibid*

increasing the prevalence of national identity politics.[60] Immigration policy is a specific policy which can have an impact on national identities. In some communities, such as Catalonia in Spain, internal policies are exclusionary and assimilationist which aim to consolidate and protect the sub-state national identity of the region.[61] This is especially prevalent in regions whose national identity is tied to ethnicity and language, as is the case in the Basque Country and Catalonia.

The Scottish Development Agency created by the British government in 1975 is an example of the intertwining of nationalism and institutions. The institution, created as a purely domestic agency, was quickly used to subvert British diplomatic relations and establish offices throughout Europe, the USA, and Japan.[62] While this effort was short-lived, its controversy did bring about a new agency for the express purpose of attracting international economic investment into Scotland.[63] This example illustrates not only the impact that nationalism has on the institutions of the nation and state, but the impact that the institutions have on developing the national identity. By utilizing the institutions at hand, Scotland was able to gain greater representation and legitimacy within the international community.

---

[60] *Ibid*, 271
[61] Victor Olivieri, "Sub-state nationalism in Spain: primers and triggers of identity politics in Catalonia and the Basque Country," *Ethnic and Racial Studies* 38, no 9 (2015): 1612
[62] Ouimet, 114
[63] *Ibid*

CHAPTER THREE – COUNTRY PROFILES

3.1 – The Netherlands

Like some countries in Europe, the Netherlands operates as a unitary state whereby the central government may create, abolish or reorganize lower levels of government.[64] The Netherlands, like many states, has a national government (Seated in the Hague), twelve provincial governments, and thousands of municipal governments.[65] The provinces are governed through directly elected provincial legislatures which serve for four year terms.[66] Local government in the Netherlands depends on the size of the municipality, but all are governed through municipal councils comprised of seven to 45 elected members that serve for four year terms.[67]

3.1.1 – Identities and Consociationalism

Despite the Netherlands' historically territorial unity, there have existed, prominently since the 1800s, deep societal division on the basis of both class and religious lines.[68] The principal resolution for such persistent divisions in the Netherlands came in the form of consociational democracy.[69] This system of governance, coined by political scientist Arend Lijphart, does not function on the principle of majority rule but instead requires consensus building; often through so called "grand coalition cabinets".[70] These grand coalition cabinets are

---

[64]EIU Digital Solutions, "Netherlands," The Economist Intelligence Unit, December 01, 2016, accessed September 24, 2020,
https://country.eiu.com/article.aspx?articleid=1584851542&Country=Netherlands&topic=Summary&subtopic=Political structure)
[65] Rudy B. Andeweg and Galen A. Irwin, "Multi-Level Governance," in Governance and Politics of the Netherlands, ed. Vincent Wright (New York, NY: Palgrave MacMillan, 2005), 172
[66] *Ibid*, 173
[67] *Ibid*, 175
[68] Wouter de Been, "Continuity or Regime Change in the Netherlands: Consociationalism in a Deterritorialized and Post-Secular World," *Ethnicities* 12, no 5 (October 2012): 539
[69] *Ibid*, 540
[70] Arend Lijphart, "Consociational Democracy," *World Politics* 21, no 2 (January 1969): 214

a piece of the consensus-building puzzle by which there are clear and deliberate efforts by

competing political elites to stabilize the political system and, by extension, society as a whole.[71]

Consociationalism was perhaps the most important factor in the mending and reconciliation of

societal tensions in the Netherlands, which has since transitioned away from the model.[72] What

truly sets the Netherlands apart from Spain is that these divisions were not based on a separate

national identity (or identities), but instead almost purely on the basis of class and religion. This

is a significant difference which has allowed for the continued equal devolution of powers in the

Netherlands, as well as the continual unity of a territorially based national identity.

The only notable exception to this is the province of Friesland. This northern littoral

province is unique in the Netherlands for having its own officially recognized language, though

Dutch is the dominant language in society and education.[73] Nevertheless, Frisian and its dialects

are still the native language of over half of the provincial population, and nearly 95 percent

claiming they can understand it.[74] In schools, Frisian is taught in the upper years, though since

education in the Netherlands is centralized there is no truly legal obligation to ensure equal or

adequate Frisian language instruction in the province.[75] There also does exist a Frisian identity

which bears many similarities to those regional identities in Spain. The sub-state identity of

Friesland is principally geographic in nature; tied to the sea and the coast.[76] Upon its

incorporation into the Kingdom of the Netherlands in 1815, the perceived peripherization of

---

[71] *Ibid*, 213

[72] de Been, 541

[73] Durk Gorter and Jasone Cenoz, "Multilingual Education for European Minority Languages: The Basque Country and Friesland," *International Review of Education* 57, no 5/6 (2011): 660

[74] *Ibid*

[75] *Ibid*, 661

[76] Goffe Jensma, "Senses of Place in the North Frisian Wadden Sea: Local Consciousness and Knowledge for Place-Based Heritage Development" in *Waddenland Outstanding: History, Landscape and Cultural Heritage of the Wadden Sea Region*, eds. Linde Egberts and Meindert Schroor (Amsterdam: Amsterdam University Press, 2018), 296

Friesland has contributed to the development of a unified identity from what was previously a broad umbrella of different Frisian identities.[77] With shared history, geographic ties, and a unique language it is clear how Friesland bears resemblance to the sub-state nations of Spain. There is one crucial difference where Friesland deviates from the examples in Spain, which is that the shared social history and experiences do not revolve around the attempted repression by the modern Dutch state. As a result, there have not been significant pushes by Frisians for greater autonomy or full-fledged separatism from the Netherlands. This difference is critical to understanding the degree to which nationalism affects decentralization in both the Netherlands and Spain.

3.2.1 – Elections and Regional Parties

Another significant indicator that sub-state nationalism is not nearly as prevalent in the Netherlands when compared to Spain is participation in regional governance. Representation of regional nationalist parties in the 2003 Dutch provincial elections demonstrates regional nationalism is weak at best, with only 12 of the 763 combined provincial seats filled by sub-state nationalist or regionalist parties.[78] This trend has not changed in recent years, as the largest of the regional parties, the Frisian National Party, only garnered four of a possible 43 seats in the 2019 provincial election compared to their seven in 2003.[79] Furthermore, there are no regional parties represented at a national level.[80] Aside from Friesland, only six other regional parties received above 0.1% of the vote share in the 2019 provincial elections.[81] The parties were: *Lokaal*

[77] Goffe Jensma, *Remystifying Frisia* 155
[78] Rudy B. Andeweg and Galen A. Irwin, 172
[79] Kiesraad, "Provinciale Staten 20 Maart 2019," Verkiezingsuitslagen, March 20, 2019, accessed January 12, 2021, https://www.verkiezingsuitslagen.nl/verkiezingen/detail/PS20190320/684842)
[80] Harmen Binnema and Hans Vollaard, "The 2019 Provincial Elections in the Netherlands: The Rise of Forum voor Democratie after a Heavily Nationalized Campaign." *Regional and Federal* Studies (November 2020): 11
[81] *Ibid*, 9

Brabant, *Groninger Belang*, *Lokaal-Limburg*, *Partij voor Zeeland*, *Partij voor het Noorden*

(active in Friesland, Drenthe, and Groningen),[82] and *Sterk Lokaal* (Drenthe).[83] Compared to the

2019 elections, regional parties won a combined 15 seats; three more than in 2003.[84] This

demonstrates a consistently low level of support for regional parties in the Netherlands.

These low levels of support also ensure that regional parties in the Netherlands have a

negligible role in policy development both nationally and regionally. This is presented in stark

contrast with Spain, where the largest Catalan national party alone won 13 seats in the national

parliament in the 2019 Spanish elections.[85] In fact, regional nationalist parties in Spain combined

for 41 out of the 350 seats (12 percent) in the Spanish parliament.[86] It is also clear from current

data that citizen participation in Dutch provincial elections does not come remotely close to

regional participation in Spain, which has significantly higher turnout in the elections to

autonomous community parliaments. For example, Catalonia's voter turnout has been increasing

steadily, reaching 82 percent in the 2017 elections.[87] Comparatively, the 2019 Dutch provincial

elections (which are all held simultaneously) saw turnout at a mere 56 percent of eligible

voters.[88] In fact, turnout for provincial elections is about on par with that of elections to

European Parliament.[89]

---

[82] "De Oorsprong Van De Partij Voor Het Noorden," Partij Voor Het Noorden, accessed February 01, 2021, https://www.partijvoorhetnoorden.nl/partij/de-oorsprong-van-de-partij-voor-het-noorden/
[83] "Sterk Lokaal," Strong Local - Strong Drenthe, accessed February 01, 2021, https://www.sterklokaal.nl/
[84] Dinnema and Vollaard, 9
[85] "POLITICO Poll of Polls - Spanish Polls, Trends and Election News for Spain," POLITICO, accessed January 13, 2021, https://www.politico.eu/europe-poll-of-polls/spain/
[86] *Ibid*
[87] Arnau Busquets Guardia, "Charts: How Catalonia Voted," Politico, December 21st, 2017, accessed January 12th, 2021, https://www.politico.eu/article/catalonia-election-results-2017-live-independence-spain/
[88] Kiesraad, Verkiezingsuitslagen, March 20, 2019
[89] Andeweg and Irwin, 173

3.1.3 – Financial Regulations and Relationships

Decentralization efforts in the Netherlands began in 1982 and have led to progressively more powers being devolved to sub-national authorities.[90] Notwithstanding the ongoing devolution of powers, the 12 provinces are still the least impactful policymakers in the country.[91] Prior to 1985, local governments in the Netherlands raised only 7% of their revenue themselves; leaving about 24% and 69% to be filled by revenue-sharing from the central government and specific grants, respectively.[92] Revenue sharing in the Netherlands is disbursed through a formula taking into account various factors such as a region's population and relative financial need.[93] There are, however, no special conditions attached to revenue sharing as is observed in the case of grants; that is to say the funds may be appropriated for any project with no strings attached from the central government.[94] As part of the devolution efforts from the Dutch government, specific grants have fallen dramatically while revenue-sharing has become much more relied upon.[95] Revenue sharing has increased to nearly 40% of local government income in 2003, while specialized grants fell to approximately 43%.[96] This means that, while the discretionary funding from the central government is decreasing, the provinces are being afforded more powers and freedom to spend their transfers as they see fit.

A 2019 report from the Central Bureau of Statistics of the Netherlands shows that the trend of dependency has continued. Combined local government income across the Netherlands totaled approximately €103bn in 2019; locally generated revenue comprised only €28.1bn

---

[90] *Ibid*, 172
[91] *Ibid*
[92] *Ibid*, 178
[93] *Ibid*
[94] *Ibid*
[95] *Ibid*
[96] *Ibid*, 179

(27.2%) of that, while €73.8bn (71.5%) came from national government transfers.[97] Of the EU-28, The Netherlands ranked 7th highest in terms of non-locally generated income in 2019.[98] This indicates that intergovernmental transfers are critical to economic development of Dutch regions, making the Netherlands clearly viable for this study.

3.2 – Spain

Like the Netherlands, Spain is a unitary state which has recently begun an increased devolution of powers to sub-national regional authorities. Unlike the Netherlands, however, modern-day Spain is comprised of multiple historic kingdoms such as Valencia, Aragon, and Castille.[99] Following the end of fascist dictatorial rule in the mid-1970s, the Spanish government almost immediately began to devolve their powers and competences to the autonomous communities; comparable to the provinces of the Netherlands. Under the 1978 constitution, each of the 17 autonomous communities boasts a popularly elected parliament and government. The powers afforded to them, however, depend entirely on the regions' negotiations with the central government.[100] The powers of the autonomous communities can be exercised as they see fit, so long as it does not violate the constitution and remains committed to the "indivisible unity of the Spanish Nation".[101] It is here where many believe that the Spanish system is unfair, as many autonomous communities cannot effectively exercise their rights to the extent that others (such as the Basque Country) can. This has created a system dubbed by some experts as

---

[97] Marten Jan van Rijn, "Dutch Local Government: A lot of Central Financing, and a lot of Decentralised Spending," Central Bureau of Statistics, July 10th, 2020, https://www.cbs.nl/nl-nl/longread/de-nederlandse-economie/2020/nederlandse-lokale-overheid-veel-centrale-financiering-veel-decentrale-uitgaven/3-overheidsinkomsten
[98] *Ibid*
[99] Tim Bale, European Politics, Chapter: "The End of the Nation State?" page 45
[100] *Ibid*
[101] *Ibid*

"Asymmetrical Federalism", as some communities objectively have fewer rights than others do.[102]

3.2.1 – Sub-State National Identities and Separatism

This "Asymmetrical Federalism" is largely derivative from various contemporary sub-state nationalist movements, primarily from Basque and Catalonia. These two autonomous communities have clear and distinct national identities which have both seen overt secessionist movements. For Catalonia, their identity had been repressed significantly during Franco's rule; treated as an outside group within their own country.[103] A 2006 statute passed in the Spanish lower house codified the Catalan identity within the country, declaring Catalonia a "nationality".[104] Although this was a significant step forward to formal recognition, the statute was opposed by one of Catalonia's prominent independence parties, the *Esquerra Republicana de Catalynya* (ERC), on the basis that it did not go far enough.[105] Following its approval through a Catalonian referendum the statute faced significant opposition from Spanish national parties, who ultimately referred it to the country's Constitutional Court.[106] In 2010, the court declared some articles of the statute illegal, prompting not only massive protests against the Spanish government, but a clear demarcation in discourse and public opinion within Catalonia towards the central government.[107] This tension was palpable, with demonstrators declaring the Constitutional Court "Francoist" and accusing the Spanish government of "robbing [them] of 60 million Euros a day".[108]

---

[102] *Ibid*, 46
[103] Juan Alberto Ruiz Casado, "Articulations of Populism and Nationalism: The Case of the Catalan Independence Movement," *European Politics and Society* 21, no 5 (2020): 557
[104] *Ibid*
[105] *Ibid*
[106] *Ibid*, 558
[107] *Ibid*
[108] *Ibid*

By 2014, Spain had been labeled by both the Catalan government and civil society organizations as an enemy, with prominent independence activists and civil society organizations proclaiming the Spanish state as their "adversary".[109] Catalonia has since launched several non-binding referenda, most notably in 2014.[110] This referendum was a result of the Spanish lower house rejecting a call from Catalonia for the devolution of powers giving the right to call a referendum.[111] The referendum (referred to by the Catalan government as a "participatory process") prompted the Spanish Constitutional Court to once again aim its sights on the issue of Catalan independence. In its 2014 decision, the court discussed the issue of the so called "right to decide" and found that that the constitution provides a right to self-determination only so far as it applies to the protected right to freedom of expression.[112] In essence, this decision legitimized the Catalan people's rights to decide their political fate but does not provide a legal avenue to practically exercise it in order to secede from the Spanish union under the current constitution.[113] On October 1st, 2017, the Catalan government defied the decisions of the Spanish Constitutional Court and called a binding referendum on independence which saw an overwhelming 90% majority vote to leave the Spanish union.[114] The vote was subject to much international attention, largely due to the overwhelmingly violent response by the Spanish government in their attempts to suppress the vote.[115]

---

[109] *Ibid*, 563

[110] Jaume Lopez and Marc Sanjaume-Calvet, "The Political Use of *de facto* Referendums of Independence: The Case of Catalonia," *Representation* 56, no 4 (2020): 506

[111] *Ibid*

[112] Eduardo J. Ruiz Vieytez, "Minority Nations and Self-Determination: A Proposal for the Regulation of Sovereignty Processes," *International Journal on Minority and Group Rights* 23 no 3 (2016): 411

[113] *Ibid*, 412

[114] Lopez and Sanjaume-Calvet, 505

[115] *Ibid*

The other most notable example of sub-state national identity issues in Spain comes from Basque Autonomous Community. Much akin to the case of Catalonia, the Basque struggles for independence and identity did not begin with Franco but were certainly exacerbated during his rule.[116] Unlike Catalonia, however, the response from Basque nationalist groups was violent; amounting to what many people would contemporarily describe as terrorism.[117] Most famously, the *Euskadi Ta Askatasuna* (ETA) was an armed Basque nationalist group that used violence in an attempt at attaining independence from Spain. The actions of the ETA were directly responsible for the deaths of more than 800 people from 1958 until a ceasefire brought upon their dissolution in 2011.[118] Another key difference between the two is that traditional "Basque Country" encompasses more than simply its autonomous community's namesake; the ETA also sought independence of the neighbouring Navarre Autonomous Community and some areas of southern France which would then be unified as a single "Basque Country".[119]

These added complexities would theoretically contribute to increased levels of separatist sentiment, however quite the opposite has been observed. While Catalan separatist efforts have clearly grown in intensity, the same cannot be said for Basque Country.[120] In 2014, a study conducted by the University of the Basque Country found that only 24 percent of respondents had a desire to separate from Spain; down 13 percent from 2006.[121] This is in stark contrast with what has been seen in Catalonia, where 57% were found to be in support of independence during

---

[116] Ann Davies, "Landscape and Identities in the Basque Country" in *Spanish Spaces: Landscape, Space and Place in Contemporary Spanish Culture* (Liverpool, UK: Liverpool University Press, 2012), 60

[117] *Ibid*

[118] Cesar Garcia, "The Strategic Communication Power of Terrorism: The Case of ETA," *Perspectives on Terrorism* 12, no 5 (October 2018): 27

[119] *Ibid*, 31

[120] Alejandro Baron, "Why Public Finance Matters: Evolution of Independence Movements in Catalonia and the Basque Country during the Twenty-First Century," *The SAIS Review of International Affairs* 35, no 2 (Summer/Fall 2015): 91

[121] *Ibid*, 93

the same year.[122] One possible explanation for this phenomenon is the special economic regime that granted the Autonomous Communities of Basque and Navarre broad fiscal independence from post-Francoist Spain.[123]

3.2.2 – Regional Parties and Elections

As was mentioned earlier in the chapter, regional elections in Spain tend to be much more prominent than in the Netherlands both in terms of voter turnout and in the number of parties competing in regional and national elections. Catalonia alone has four regional nationalist parties represented in their parliament as of their 2017 election, compared to six across the entire country of the Netherlands.[124] Where Spain also significantly diverges from the Netherlands is in the amount of representation attained by these regional identity-based parties. A large scale 2015 study by Filippo Tronconi examined regional parties in Italy and Spain and their participation in governance. The study found that between 1979 and 2011, identity-based regional parties in Spain had the opportunity to form government at the autonomous community level a combined 144 times.[125] What this means is that these parties in Spain were either a part of a governing coalition or held a majority in their regional legislatures 144 times in the span of just over 30 years. This represents a clear differentiation to what has been observed in the Netherlands, where such occurrences are generally rare.

While representation at the regional level is significant, attaining national recognition is vastly more impactful for the promotion and furtherance of regional interests. It is here where

---

[122] *Ibid*, 92
[123] *Ibid*, 94
[124] Government of Catalonia, "Election Results," Processos Electorals, accessed February 4, 2021, https://eleccions.gencat.cat/ca/resultats-electorals#/dades?tipusProces=A&proces=A20171#resultats
[125] Filippo Tronconi, "Ethno-Regionalist Parties in Regional Government: Multilevel Coalitional Strategies in Italy and Spain," *Government and Opposition* 50, no 4 (October 2015): 587-588

Dutch provincial parties are even more divergent from those of the Spanish autonomous communities. As previously discussed, there are no regional parties represented in the Dutch lower house of representatives, whereas the Spanish lower house sees almost 12 percent of their seats occupied by regional identity-based parties as of the November 2019 General Election. These parties, represent the six autonomous communities of Catalonia, Basque Country, Navarre, Canary Islands, Galicia, and Cantabria, as well as the Aragonese province of Teruel.[126] This representation allows for a direct voice in how the entire country is run, and promotes regional concerns more effectively. This is particularly evident in Catalonian negotiations to codify their identity in Spanish law, as regional parties played a significant part of the talks. It also was especially relevant in the devolution of fiscal powers, especially in the case of Basque Country.

3.2.3 – Fiscal Regulations and Relationships

The fiscal independence enjoyed by the Basque Country and Navarre is the most enjoyed by any autonomous community in Spain. They are able to collect 100% of all taxes (with the exception of customs duties), set regional spending programmes, and are reimbursed for the VAT collected by the central government in Basque territory.[127] The rest of the country, which does not fall under this so-called "*foral* regime", operate under a specific scheme of tax-sharing (referred to as the "common regime); a 50 percent split of personal income tax (plus discretionary regional rates) and VAT, along with 58 percent of alcohol, tobacco and hydrocarbon duties going to the regions.[128] These regions do collect 100 percent of all

[126] "POLITICO Poll of Polls - Spanish Polls, Trends and Election News for Spain," POLITICO, accessed January 13, 2021, https://www.politico.eu/europe-poll-of-polls/spain/
[127] Baron, 98
[128] European Committee of the Regions, "Spain – Fiscal Powers," European Union, accessed February 18th, 2021, https://portal.cor.europa.eu/divisionpowers/Pages/Spain-Fiscal-Powers.aspx

nationally-set rates (some of which are also subject to additional regional discretionary rates) on electricity, oil, property tax, stamps, motor vehicles, as well as wealth and inheritance taxes.[129] In stark contrast with the Netherlands, Spanish autonomous communities in 2018 raised just over 40 percent of their own revenues.[130] In fact, the Spanish autonomous communities rank second amongst EU members in terms of locally generated revenue (including provinces and municipalities) behind only the German Länder.[131] As a whole, Spanish sub-national government spending (including provinces and municipalities) accounted for almost 80 percent of total government spending while in the Netherlands, it was about one third.[132]

This was not always the case, as until the early 1980s the vertical fiscal imbalance of the central Spanish government was extremely high.[133] The issue of vertical fiscal imbalance in Spain was easily addressed by implementing the aforementioned taxation and revenue sharing schemes, however this cannot particularly address the issue of horizontal fiscal imbalance; where there is inequality between the regions themselves.[134] Such issues cannot be solved through the same mechanisms used to address vertical fiscal imbalances, and in fact are often exacerbated by them. This is evident when examining the *foral* regime communities and their glaringly unequal tax burden in comparison to the rest of the country. Residents of Basque and Navarre do not share a remotely equal cost of centrally provided services but retain equal access to them nonetheless.[135] Compounding this is the *Ley Organica de Financiacion de las Comunidades*

[129] *Ibid*

[130] *Ibid*

[131] *Ibid*

[132] https://portal.cor.europa.eu/divisionpowers/Pages/Comparer.aspx?pol=Fiscal%20Powers&c1=Spain&c2=The%20Netherlands

[133] Violeta Ruiz Almendral, "Sharing Taxes and Sharing the Deficit in Spanish Fiscal Federalism," *eJournal of Tax Research* 10, no 1 (February 2012): 89

[134] *Ibid*, 99

[135] *Ibid*, 100

Autonomas (LOFCA) which imposes strict regulations on taxation powers of the other 15 autonomous communities.[136] The LOFCA further emphasizes the necessity of intergovernmental transfers between the central government and autonomous communities, as their powers are largely limited to raise their own revenues.

Traditionally, intergovernmental transfers were based on need as determined by a formula set out in the LOFCA.[137] The actual disbursement of funds, however, was often bilaterally negotiated between the Spanish government and each autonomous community separately due to the central government's inability to accurately assess the criteria needed to complete the LOFCA formula.[138] This was the norm until 2009 when Spain introduced a reform which altered the formula slightly by not counting revenue generated through regional taxes in the final calculation of assets for equalization.[139] This new measure is extremely beneficial for autonomous communities that have levied their own taxes – and especially for those who end up having a negative transfer balance with the central government. The revision also includes various non-fiscal factors such as population density, and whether there is a regional language population requiring protection.[140] Much like other states that have equalization regimes, the wealthier regions still tend to ostensibly bankroll the less fortunate ones in the interest ensuring (at least as close as possible) equal access and quality of government services throughout the country.

Spain, much like the Netherlands, also has a system of grant transfers, which are intended to be used for the financing of (often specific) capital projects within a region. In the case of

---

[136] *Ibid*, 102
[137] *Ibid*, 106
[138] *Ibid*
[139] *Ibid*, 107
[140] *Ibid*, 108

Spain, these transfers are made up of national fund programs such as the "Interterritorial Compensation Fund" which all states contribute towards and are then redistributed.[141] Also like the Netherlands, these grants are generally bilateral and discretionary on the part of the central government, which differs from the general-purpose equalization scheme previously discussed.[142] While these grants are often a small percentage of the total transfer payments to the regions, they are significant enough to be discussed due to their discretionary nature. With the central government allowed to expressly determine which regions get how much grant money, this program is clearly relevant to this study.

3.3 – Comparability

While this equalization scheme differs from that which is practiced in the Netherlands, the Spanish example is still quite clearly relevant for this study. As has been demonstrated, the fiscal powers devolved to the autonomous communities are largely malleable. They can, and are, changed to ensure more equity amongst the regions, and as such can also be changed for political purposes; the inclusion of regional language factors in equalization payments is a notable example of this. Both Spain and the Netherlands operate as unitary states, both have significant regional governments (Dutch provinces and Spanish autonomous communities) and both have transfer/equalization schemes that comprise the majority of regional revenues. Consequently, Spain and the Netherlands are both viable for this study, and a fair comparison can be made between the two for the purposes of analysis.

---

[141] Ana Herrero-Alcalde et al, "The Challenge of Designing Capital Equalization Transfers: An Application to Spanish Regions," *Publius* 42, no 2 (Spring 2012): 267
[142] *Ibid*

CHAPTER FOUR – DATASET AND COLLECTION

4.1 – Fiscal Data

The dependent variable for this study is the amount of intergovernmental transfer payments from the central governments to their respective regional governments. As discussed in the previous chapter, such transfers are almost exclusively legally mandated, though there is often flexibility; either through discretionary capital transfers or by amending the laws governing such payments. The data has been collected through respective government websites and budgetary documents. For both the Netherlands and Spain, the figures represented in this study have been taken from data published by the central governments on the financing of regional governments. Retrieving data from the central governments ensures that there is uniform calculation between the different regions of a country. The wealth of the regions also is included as an independent variable for this study to measure more accurately the relative impact that intergovernmental transfers have on sub-state nationalism.

Under the transfer schemes of both countries, the regions with lower relative "wealth" should, in theory, receive more in transfer payments than those with more. One of the largest factors used in these calculations is a region's internal revenue generation which usually comes in the form of levied taxes. For the purposes of this study, internal revenue generation will be used as a proxy value for the relative wealth of a region. This value is most suitable for this study due to the fact it excludes external variables and focuses solely on a single institutional factor. This proxy value fits within the theoretical framework of normative institutionalism, and therefore is fitting to be used in the study. Internal revenue generation is most suitable to represent the wealth of a region as it indicates a region's independent ability to provide services

for its population. All data collected from each region in both countries will be represented in

millions of Euros unless otherwise specified.

4.1.2 – The Netherlands

For analysis of the Netherlands, all twelve mainland provinces will be examined given

that each operates under a common fiscal regime as determined by the central government.

Overseas territories of the Netherlands will not be included in this study as they do not fit within

its parameters. Intergovernmental transfers from the central government to the provincial

governments for the purposes of fiscal equalization are realized through the disbursement of the

"Provincial Fund".[143] All data on intergovernmental transfers as part of the Provincial Fund were

taken from the provincial accounts page of the digital archives of the Central Bureau of Statistics

(CBS) of the Netherlands.[144] One important factor to reiterate regarding the Netherlands is the

level of regional decentralization. The Netherlands is still, despite their various devolutions since

the 1980s, one of the most centralized countries in Europe. Many policies are legislated at the

national level and their execution is then delegated to the lower levels.[145] Between the national,

provincial, and municipal levels of government, the provinces are by far the weakest in terms of

both legislative power and capacity to independently generate revenue. The vast majority of their

funding is through central government grants (general and specific), as no tax-sharing

programmes are present in the Netherlands.[146] This means that both the general-purpose grants

---

[143] Rijksoverheid. "Annual Report and Final Law Provincial Fund 2010," Government of the Netherlands, 2010-2011. https://www.rijksbegroting.nl/2010/verantwoording/slotwet,kst156561.html
[144] Central Bureau of Statistics, "Province Accounts; Income and Expenses per Function by Region 2007-2016," Government of the Netherlands, October 19, 2018,
https://opendata.cbs.nl/statline/#/CBS/nl/dataset/80502ned/table?ts=1614279098637
[145] Maarten Allers and Wouter Vermeulen, *Fiscal Equalization and Capitalization: Evidence from a Policy Reform,* The Hague, NL, (2007): 3
[146] National Academy for Finance and Economics, *Public Finance in the Netherlands*, The Hague, NL, (2013): 12

(Provincial Fund) and specific grants are funded directly by income generated at the level of the central government, and not a redistribution of provincial revenues.

One significant variable when discussing intergovernmental transfer payments in the Netherlands is the role of the specific grants.[147] For the collection of this data, values were also taken from the CBS archives of the provincial accounts. For this study, all figures represented under the "benefits" column (with some exceptions) of the provincial accounts page will be considered as originating from the central government. The exceptions to this are if it is otherwise specified that the funds are derived from a different source, or if the origin is unclear. An example of this can be found in the function of the "promotion of economic activities", which is explicitly said to contain investment incentives from the European Structural Funds.[148] The decision to include the rest of the figures is the interpretation of the Provincial Fund description found in the table information annex of the CBS data, which reads:

> The general payment from the provincial fund, including the pertaining integration payments. Benefits not included in the above, such as the specific benefits, are posted to the appropriate functions. The additions to provisions (which are / have been made for liabilities and risks the size of which is uncertain but can be reasonably estimated) are booked to the function for which the provision is made.[149]

This passage, in conjunction with research on the funding structure on the provinces of the Netherlands, invites an interpretation of the provincial "benefits" to be composed primarily of specific grants.[150] While this means that the values included in the final analysis may differ

---

[147] An explanation of the calculation for each variable of g can be found in Appendix 1.1
[148] Central Bureau of Statistics, 2018
[149] *Ibid*
[150] A comprehensive list of provincial functions excluded from the calculation of benefits can be found with explanations in Appendix 1.2

slightly from the realized figures, it can be reasonably determined as statistically viable for study given the nature of the available data and the limited clarity of explanations. The total value of capital grants (*g*) will therefore be understood as:

$$\sum_{i=1}^{9} g_i$$

The value of provincial capacity was determined from the same data tables published by the CBS, under the "own resources" row.[151] This amount is an aggregate of all provincial levies collected by the governments, of which nearly the entirety is derived from the "motor vehicle surcharge".[152] This value will be represented both as its real value, and per capita.

4.1.3 – Spain

For the purposes of this study, the two autonomous cities of Spain, Ceuta and Melilla, are not included in the dataset. As a unit of analysis, they do not fit within the parameters being used for the study and therefore are being excluded. Furthermore, the autonomous communities of Basque Country and Navarre are not included in this dataset due to their unique fiscal policy compared to the common regime communities. Basque Country and Navarre are not recipients of traditional equalization, and therefore cannot accurately be compared to the common regime communities.

All budget settlement data for the common regime communities was gathered from the digital archives of the Spanish Ministry of Finance – *Ministerio de Hacienda* from the "Reports on the Definitive Financing of the Autonomous Communities". The intergovernmental transfers

---

[151] Central Bureau of Statistics, 2018
[152] *Ibid*

for the purposes of equalization are collected and distributed through various funds. Each autonomous community's contributions are determined through certain formulae and calculations as determined by Spanish laws. The funds being considered for this study are the *Fondo Garantia* (e_1), the *Fondo de Suficiencia Global* (e_2), the *Fondo de Cooperacion* (e_3), and the *Fondo de Competitividad* (e_4). From these funds, the net equalization received by each autonomous community (e) can be determined:

$$\sum_{i=1}^{4} e_i$$

The capital transfers received by the autonomous communities are found in budget settlement tables provided by the *Ministerio de Hacienda.* As part of this program, Spain also utilizes two specific transfers under the umbrella of the *Fondo de Compensacion Interterritorial* (FCI); the Compensation Fund (c_1) and the Complementary Fund (c_2).[153] This data is found in the budget settlement tables under codes 7003 and 7004, respectively.[154] While the purpose of these funds is the reduction of horizontal fiscal imbalances, they are legally not part of the formal system of equalization. They are only distributed to autonomous communities whose per capita income level is below 75 percent of the EU average.[155] The other value for capital transfers comes from code 7009, listed as "Other State Transfers" (c_3). From here, the net amount of capital transfers to regional governments can be determined (c):

---

[153] Ministry of Finance, "Inter-Regional Compensation Fund," Government of Spain, March 4th, 2018, https://www.dgfc.sepg.hacienda.gob.es/sitios/dgfc/en-GB/ipr/oipr/fci/Paginas/inicio.aspx
[154] Ministry of Finance, "Consolidated Data Consultation of the Liquidation of the Budgets," Government of Spain, https://serviciostelematicosext.hacienda.gob.es/SGCIEF/PublicacionLiquidaciones/aspx/SelconsultaDC.aspx,
[155] Herrero-Alcalde et al, 267

$$\sum_{i=1}^{3} c_i$$

The calculation of net transfers received from the central government (t) can therefore be understood as:

$$\sum_{e,c} t\,(e,c)$$

The fiscal capacity of the autonomous communities was determined by adding their "settled" tax resources with the "non-settled" tax resources. Settled resources are considered personal income tax, VAT, and other shared taxes such as alcohol and tobacco.[156] Non-settled resources are considered inheritance tax, taxes on donations, gambling tax, and transfer of service fees.[157] This data was also retrieved from the reports on the definitive financing of the autonomous communities. It is this data on fiscal capacity which partially informs the calculations for the contributions to, and distribution of equalization transfers. The final fiscal capacity is found in Table 2.2.2 of the central government reports. This figure is represented as its real value, alongside the value of fiscal capacity per capita.

4.2 – Data on Sub-State Nationalism

The other independent variable of this study is the amount of sub-state nationalism present within a given region of a country. For this study, the amount of sub-state nationalism of a region will be represented using support for regional nationalist parties in their respective

---

[156] Ministerio de Hacienda, "Liquidación de los recursos del sistema de financiación de las comunidades autónomas de régimen común y ciudades con estatuto de autonomía y de las participaciones en los fondos de convergencia autonómica, regulados en la ley 22/2009, de 18 de diciembre, correspondientes al ejercicio 2010," Madrid, (July 2012): 13
[157] *Ibid*

elections. Ideally, universal survey data would be used to determine this, however such data is not accessible and a proxy must therefore be used. Electoral data was operationalized to represent sub-state nationalist sentiment by using the percentage of votes attained by regional nationalist parties in their respective elections. In Chapter five, supplemental data may be used to highlight year-over-year trends, given that elections do not happen every year.[158] Consequently, the data presented for year calendar year will be recycled for all years until there is a change through an election.

For the purpose of this study, a regional nationalist party is considered to be any party which is active in a set region (or regions) which purports to represent regional interests. Not included in this definition are those regional parties who are focused on specific issues unrelated to the recognition or support of the regional identity. This determination was made through verifying the parties' information on their respective websites. Any party for which this data was not clearly available was excluded from this study.[159]

4.2.1 – The Netherlands

The Netherlands runs elections for all seats in the provincial legislatures simultaneously. These elections are overseen by the *Kiesraad*; an advisory committee of the central government.[160] All data on provincial elections in the Netherlands have been taken from the *Kiesraad's* website.[161] The most recent elections to the provinces were in 2019, and as such fall outside of the timeframe of this study. The data used will be from the elections of 2007, 2011, and 2015. The 2007 data must be used for this study because it will provide the figures for the

---

[158] Supplemental data includes polling data and voter turnout for regional independence referenda, and regional party representation in national legislatures
[159] A complete register of parties included in this study can be found in Appendix 2
[160] Kiesraad. "About us", Accessed February 20th, 2021, https://english.kiesraad.nl/about-us
[161] https://www.verkiezingsuitslagen.nl/verkiezingen/detail/PS20190320/684842

composition of the provincial legislatures as of 2010 – the first year of this study. The 2011 election will provide data for the same year until 2014, and the 2015 election will cover the remainder. These figures do not change year to year outside of the election as there were no special elections during the time frame of this study.

4.2.2 – Spain

Unlike the Netherlands, elections to the legislatures of the autonomous communities are not administered uniformly by a central authority. Rather, the elections are regulated by the *Junta Electoral Central* (Central Electoral Board) under a framework which creates local electoral commissions to administer regional elections.[162] The only commonality among the autonomous communities is that elections are to be held on or before the fourth Sunday of May every four years.[163] The exceptions to this rule are in the cases where snap elections are called by the presidents of some regional assemblies, which would alter the electoral cycles of the respective communities.[164] As with the Netherlands, data will remain constant for years where no elections took place; only in years where there was an election, planned or snap, will data on vote percentages change.

The parties included in the dataset for each year can be found in Appendix 3. The inclusion of a party was based on two factors; the percentage of vote a party received, and its ideology. Any party that received less than one percent of the vote in an election will not be considered given that such a small presence could logically not exert enough influence to have a significant impact on Spanish fiscal policy or intergovernmental transfer payments. The data on

---

[162] LO 5/1985, 21 June, Representation of the People Institutional Act, 10
[163] *Ibid,* 27
[164] *Ibid*

electoral results was taken primarily from each autonomous community's legislature websites.[165] In select cases, data was taken from the *Junta Electoral Central* publication of results when no such data was available from the autonomous communities.

The ideology of each party was taken primarily from their respective websites, and the platforms contained therein. To be included, the party must have clearly displayed a regional nationalist ideology prior to the election. This ideology was considered to be present if the platforms specifically mentioned protection of a national language, culture, or identity, mentioned independence from the Spanish union, or referred to the autonomous community they were operating in as a distinct nation. If such information was not present, unclear, or unavailable, the party was not included in the dataset for this study. In some cases, the archived page of the party in question was used due to ongoing maintenance of the website, or defunctness of the site as a whole.

---

[165] Data was taken from legislature websites due to the simplicity and convenience of data published on these websites.

CHAPTER FIVE - ANALYSIS

5.1 – Overview

      The collected data was compiled and organized in two different ways for analysis; by year and by region. The yearly data includes all regions of a country for a given year, and the regional data includes all data for a single region over the nine years being examined. These micro-level analyses are relevant to the discernment of specific, individual trends over a case or particular year, and can provide insight to which regions or years may stand out as significant in the dataset. In addition to the micro-level analyses, a macroanalysis was conducted for each country which included all regions across all years. This was done to observe any statistical trends which may occur across the country at a broad level.

5.2 – Methodology

      The analysis was conducted using two distinct statistical functions in SPSS. First, a multiple regression was run to test the statistical significance of the relationship between the dependent variable (β_0) and the independent variables (β_1 and β_2). The multiple regression was run on both micro and macro-level data. The data generated by the regression was used to determine statistical significance using *t* score tests, the value of t being determined by:

$$t = \frac{\beta_x \; coefficient}{Standard \; Error}$$

Using the value of *t*, it was then compared to a standard *t* score table at the 0.2, 0.1, 0.05, 0.02, and 0.01 levels against the two-sided alternative to determine statistical significance.[166] Other

---

[166] The critical values of the *t* distribution can be found in Appendix 4.1

values, such as the adjusted R^2 value generated by the regression were additionally used to provide increased quantitative certainty and confidence in the data.

Following the t test, an f test was run to determine the joint significance of the variables. This test is critical for understanding the actual relationship between the independent variables and the dependent variable. The f test acts as a linear hypothesis test and allows for a more accurate and definitive assessment of H_0 and H_1. The f test uses values from the multiple regression found in the Analysis of Variance (ANOVA) table to determine the joint significance of the variables. The formula to calculate f is as follows[167]:

$$f = (\frac{Sum\ of\ Squares_1}{Sum\ of\ Squares_2})\ (\frac{DF_2}{DF_1})$$

The value of f as determined by the above calculation was then tested against the relevant value in the f score table to ascertain the level of joint significance at the 0.1, 0.05, and 0.01 levels for multiple regressions.[168]

5.3 – The Netherlands: Macroanalysis

The macro-level data for the Netherlands was run as a multiple regression in SPSS against β_0 using β_1 and β_2. The value of β_0 is represented as transfers per capita (€) (coded in SPSS as TRAN_PC_EUR) from the Dutch government as specified in Chapter Four. The value of $\beta 1$ is represented as the percentage of votes received in provincial elections by nationalist parties (coded in SPSS as VOTE). The value of β_2 is represented as fiscal capacity per capita (€) (coded as FISC_PC_EUR), as specified in Chapter Four. The degrees of freedom for the macro-

---

[167] The subscript 1 in the equation denotes the "Regression" row of the ANOVA table, and the subscript 2 in the equation denotes the "Residual" row of the ANOVA table.
[168] 10%, 5%, and 1% critical values of the f distribution can be found in Appendices 4.2, 4.3, and 4.4 respectively.

level analysis is represented by the number of cases (n), subtracting one (df = n − 1). In this case, the degrees of freedom for the macroanalysis is 107 (120 for the purposes of t score and f tables). For the macroanalysis regression, the model summary can be found in Table 1.1.

Table 1.1

Model Summary - Netherlands Macroanalysis[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587[a]	.344	.332	158.04066

a. Predictors: (Constant), FISC_PC_EUR, VOTE
b. Dependent Variable: TRAN_PC_EUR

This table indicates, through interpretation of the adjusted R^2 value, that approximately 33.2 percent of the change in the dependent variable can be explained using both independent variables as predictors while filtering out potential coincidental explanations. The output of the multiple regression (Table 1.2) indicates the t values of the independent variables.

Table 1.2

Multiple Regression of Netherlands Macroanalysis[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	114.036	73.385		1.554	.123
	VOTE	37.633	5.305	.562	7.094	.000
	FISC_PC_EUR	2.032	.754	.214	2.696	.008

a. Dependent Variable: TRAN_PC_EUR

The regression output produced a t value of 7.094 for β_1, which is greater than the critical 0.01 value of the t distribution at 120 degrees of freedom (2.617). This indicates that β_1 is

statistically significant at the one percent level against the two-sided alternative. The t value of β_2

is 2.696, which is also statistically significant at the one percent level against the two-sided

alternative. Using the values of the t test, the null hypothesis can confidently be rejected in this

case. The results of the regression also indicate relationships between the independent variables

and the dependent variable. In this case, for every unit change in β_0 there is a 37.633 unit change

in β_1. Further, for every unit change in β_0 there is a 2.032 unit change in β_2. These results will be

analyzed in greater detail in Chapter Six.

The linear hypothesis test for the macroanalysis using the f test was also completed. This

test value was found in the ANOVA table (Table 1.3) of the regression output.

Table 1.3

ANOVA Table Netherlands Macroanalysis[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1375628.870	2	687814.435	27.538	.000[b]
	Residual	2622569.437	105	24976.852		
	Total	3998198.307	107			

a. Dependent Variable: TRAN_PC_EUR
b. Predictors: (Constant), FISC_PC_EUR, VOTE

This table indicates that the f value for this regression model is 27.538. The critical value of f at

the 0.01 level observed at 120 degrees of freedom with a numerator of 2 is 4.79. The f value is

significantly greater than the critical value, which means that the null hypothesis can be

confidently rejected for the macroanalysis of the Netherlands.

5.4 – The Netherlands: Microanalysis

For the first microanalysis, all nine years were regressed separate from each other, using the same metrics across all 12 provinces for each year. The results can be cohesively found in Table 1.4, where β_1 is the change in units of vote percentage per one unit change in the dependent variable, and β_2 represents the change in units of fiscal capacity per capita per one unit change of the dependent variable.

Table 1.4   Multiple Regressions of Time Series Data for the Netherlands[169]

Year	β_1	t_1	β_2	t_2	f
2010	13.161	0.912	2.935	0.750	0.653
2011†	33.667	1.835*	1.721	0.362	1.725
2012	64.766	4.127***	6.091	1.446	9.494
2013	24.157	1.653	6.298	1.487	2.643
2014	23.194	1.824*	3.408	3.295***	7.820
2015†	27.600	1.609	2.834	0.820	1.875
2016	63.493	4.019***	2.870	1.027	8.155
2017	63.918	4.388***	2.346	1.422	9.657
2018	27.943	1.789*	1.637	0.978	1.750

† Indicates an election year.

The microanalysis of the years in the Netherlands demonstrates some statistical significance. There were four years of the nine that demonstrated clear statistical significance.

---

[169] * = Statistically significant at the ten percent level
   ** = Statistically significant at the five percent level
  *** = Statistically significant at the one percent level

2012, 2014, 2016, and 2017 were the only years where the observed f value was greater than the critical value at the one percent level. In three of those four years (2012, 2016, and 2017) the t values of β_1 were statistically significant at the one percent level against the two-sided alternative. In 2014, the t value of β_2 was statistically significant at the one percent level against the two-sided alternative. Further, in 2011, 2014, and 2018 the t value of β_1 is statistically significant at the 10 percent (0.1) level.

In 2012, 2013, and 2017 the t value of β_2 was statistically significant at the 20 percent (0.2) level. These values are not within the five percent threshold, but still demonstrate a level of statistical significance that merits discussion, especially considering the relatively small sample size.

The second microanalysis regressed all 15 autonomous communities separate from each other, using the same metrics across all nine years for each community. The results are found in Table 1.5, which uses the same metrics and values as the previous table.

Table 1.5   Multiple Regressions of Case Data for Provinces of the Netherlands[170]

Province	β_1	t_1	β_2	t_2	f
Drenthe	56.238	2.099	2.322	2.746*	5.267
Flevoland			- 2.047	- 2.268	5.142
Friesland	25.932	0.257	- 7.250	- 0.773	0.310
Gelderland			-7.805	- 8.032***	65.506
Groningen	- 171.795	- 2.172	- 13.586	- 1.770	2.360
Limburg	- 26.927	- 0.442	1.640	0.147	0.098

[170] Blank cells indicate regions with no votes for sub-state nationalist parties.

North Brabant		-10.142	- 2.999**	8.994
North Holland		3.310	4.013***	16.106
Overijssel		2.831	0.587	0.345
South Holland		- 13.585	-1.736	3.015
Utrecht		3.071	5.126***	26.274
Zeeland		-12.608	- 4.236***	17.945

The microanalysis of Dutch provinces also indicates some statistically significant results. While the specific interpretations of this data will be left to the Sixth Chapter, some rudimentary interpretation indicates that, using the f test, Flevoland has enough statistical significance at the 10 percent (0.1) level to reject the null hypothesis. Its β_2 value is statistically significant at the five percent level against the two-sided alternative, which would also lead to the rejection of the null hypothesis.

Both Drenthe and North Brabant have enough statistical significance at the five percent (0.05) level of the critical f value to reject the null hypothesis. Drenthe's t scores for β_1 and β_2 are statistically significant at the 10 percent and five percent levels, respectively, against the two-sided alternative. The t value of β_2 for North Brabant also indicates statistical significance at the one percent level against the two-sided alternative. In both of these cases, the null hypothesis can be rejected.

Finally, Gelderland, North Holland, Utrecht, and Zeeland are very statistically significant at the one percent (0.01) level when testing against the critical f value. In all four cases, the t value of β_2 is statistically significant at the one percent level against the two-sided alternative. This would lead to a clear rejection of the null hypothesis for these case-level analyses.

5.5 – Spain: Macroanalysis

The macro-level data for Spain was run as a multiple regression in SPSS against β_0 using β_1 and β_2. The value of β_0 is represented as transfers per capita (€) (coded in SPSS as TRAN_PC_EUR) from the Spanish government as specified in Chapter Four. The value of β_1 is represented as the percentage of votes received in regional elections by nationalist parties (coded in SPSS as VOTE). The value of β_2 is represented as fiscal capacity per capita (€) (coded as FISC_PC_EUR), as specified in Chapter Four. The degrees of freedom for the macro-level analysis is represented by the number of cases (n), subtracting one ($df = n - 1$). In this case, the degrees of freedom for the macroanalysis is 134 (∞ for the purposes of t score and f tables). For the macroanalysis regression, the model summary can be found in Table 2.1.

Table 2.1

Model Summary of Multiple Regression - Spain Macroanalysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790[a]	.624	.618	301.70613

a. Predictors: (Constant), FISC_PC_EUR, VOTE

The model summary demonstrates the adjusted R^2 value for the multiple regression against the dependent variable using β_1 and β_2 and predictors. The adjusted R^2 value of the

multiple regression would suggest that 61.8 percent of the change in the dependent variable can be explained by the independent variables while eliminating any explanations that could be explained by chance. The output of the multiple regression that is used to determine the *t* value can be found in Table 2.2:

Table 2.2

Multiple Regression - Spain Macroanalysis[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2024.917	106.883		18.945	.000
	VOTE	3.754	1.793	.112	2.094	.038
	FISC_PC_EUR	-.776	.053	-.788	-14.728	.000

a. Dependent Variable: TRAN_PC_EUR

The output of the multiple regression shows a *t* value for β_1 of 2.094, which is greater than 1.960 and less than 2.326, making β_1 statistically significant at the five percent (0.05) level against the two-sided alternative. The *t* value for β_2 is -14.728; greater than the critical value of 2.576 which would indicate that β_2 is statistically significant at the one percent (0.01) level against the two-sided alternative. The results of the multiple regression further indicate that for every unit change of β_0, there is a 3.754 unit increase in β_1 and a 0.776 unit decrease in β_2. This data independently suggests that the null hypothesis should be rejected ($\beta_1 + \beta_2 \neq 0$). However, for further validity an *f* test was run to ensure accuracy and joint significance of the variables, and for the purposes of a hypothesis test.

The *f* calculation for the macroanalysis of the Spanish regions was found in the ANOVA table in the multiple regression output and can be seen in Table 2.3.

Table 2.3

ANOVA Table - Spain Macroanalysis[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20481683.09	2	10240841.55	108.925	.000[b]
	Residual	12410283.05	132	94017.296		
	Total	32891966.14	134			

a. Dependent Variable: FISC_PC_EUR

b. Predictors: (Constant), TRAN_PC_EUR, VOTE

As a result of this calculation, the value of f can be determined as 108.925. This value is much greater than the critical value of 4.61, which would indicate the null hypothesis can be rejected well above the one percent (0.01) level. Given the results of the t test and the f test, it can confidently be assumed that the null hypothesis may be rejected in favour of H_1 when performing a macroanalysis of all Spanish regions.

5.6 – Spain: Microanalysis

For the first microanalysis, all nine years were regressed separate from each other, using the same metrics across all 15 autonomous communities for each year. The results can be cohesively found in Table 2.4, where β_1 is the change in units of vote percentage per one unit change in the dependent variable, and β_2 represents the change in units of fiscal capacity per capita per one unit change of the dependent variable.

Table 2.4   **Multiple Regressions of Time Series Data for Spain**

Year	β_1	t_1	β_2	t_2	f
2010	1.723	0.321	- 0.819	- 4.683***	10.991
2011[†]	4.779	0.852	- 0.808	- 4.238***	9.493

2012	3.946	0.746	- 0.801	- 4.305***	9.765
2013	2.967	0.505	- 0.887	- 4.198***	9.074
2014	2.777	0.565	- 0.840	- 5.111***	13.526
2015[†]	1.657	0.284	- 0.888	- 5.086***	12.968
2016	3.194	0.648	- 0.865	- 5.998***	17.990
2017	3.963	0.834	- 0.905	- 6.758***	22.841
2018	3.644	0.721	- 0.904	- 7.090***	25.165

[†] Indicates a primary election year across the standard 12 communities.

The results of the regressions indicate that a relationship between both independent variables and the dependent variable exists. However, β_1 is not statistically significant at any conventional level, whereas β_2 across all years is significant at the one percent (0.01) level against the two sided alternative. The results of the f tests across all years are each above 6.96, which indicates a significant rejection of the null hypothesis for the time-series microanalysis of Spanish regions.

The second microanalysis regressed all 15 autonomous communities separate from each other, using the same metrics across all nine years for each community. The results are found in Table 2.5, which uses the same metrics and values as the previous table.

Table 2.5   Multiple Regressions of Case Data for Autonomous Communities

Autonomous Community	β_1	t	β_2	t	f
Andalusia	4.498	0.951	0.017	0.103	0.919
Aragon	12.842	1.854	0.185	1.244	1.801
Asturias	77.216	2.906**	- 0.053	- 0.346	4.737

Balearic Islands	-1.791	- 0.287	- 0.147	- 0.696	2.114
Canary Islands	-7.129	- 0.487	2.417	4.379*	24.723
Cantabria	33.096	0.895	0.181	0.930	2.529
Castile and Léon	160.278	2.676*	0.148	0.893	3.868
Castile La Mancha			0.084	0.700	0.490
Catalonia	-53.736	- 0.681	-0.304	-1.308	1.939
Extremadura			0.350	1.370	1.878
Galicia	3.630	0.617	-0.298	-0.911	0.424
La Rioja	- 23.958	- 0.428	0.040	0.208	0.588
Madrid			-0.293	-6.049***	36.588
Murcia			0.414	1.800	3.239
Valencia	- 5.200	- 0.712	- 0.077	- 0.397	2.870

The results of the regressions for each autonomous community only produce some statistically significant results. For example, in Aragon the t value for β_1 is marginally less than 1.860, which indicates that it is almost significant at the 10 percent level (0.1) and is significant at the 20 percent level (0.2) which would lead to the rejection of the null hypothesis in favour of H_1. However, the value of β_2 is not statistically significant, and the value of f is not statistically

significant, which therefore means the null hypothesis cannot be rejected in this case, or other similar cases based on the *f* value.

Among the individual autonomous communities, only Asturias (0.1 level), the Canary Islands (at the 0.01 level), Castile and Léon (at the 0.1 level), and Madrid (at the 0.01 level), have *f* values that are statistically significant, and would therefore lead to the rejection of the null hypothesis based on this test alone. The trends and relationships of this data, contrasted with supplementary external sources, will be further examined in the Sixth Chapter.

CHAPTER SIX – DISCUSSION OF RESULTS

6.1 – Discussion of the Netherlands

When interpreting the macroanalysis of data from the Netherlands, it appears at first glance that there is a significant relationship between the percentage of votes received by nationalist parties, the fiscal capacity of a region, and the total amount of transfers received by each province. A significant issue with the interpretation in the Netherlands is caused by high levels of null data; that is to say provinces with no observed sub-state nationalist sentiment. This produces a β_1 coefficient of 37.633, which is exceptionally high and likely not fully representative of the actual effect observed. While it is still likely that β_1 has an impact on β_0, the relationship itself should be examined using different metrics such as popular opinion polls, surveys, or other methodologies to get a clearer picture of the cause and effect.

Data on the effect of β_2 is likely more accurate and paints a very interesting picture. Over the nine years and across all 12 provinces, for every unit change in transfers received per capita (€), there is a 2.03 unit increase in fiscal capacity per person (€). This data would indicate that provinces with lower fiscal capacity will receive less proportionately than their wealthier counterparts. This would *prima facie* run counter to the generally understood purpose of equalization payments, which more often than not tends to see those with less resources benefit at a greater rate. However, given that the provinces of the Netherlands have extremely limited indigenous revenue streams, the relationship of transfer payments and the wealth of the region would likely be unconventional. A significant source of the transfers received by the provinces of the Netherlands come from specific grants that are to be used for specific projects; as a result, the need varies on a case-by-case basis and it not always tied to the ability of a region to generate its own revenue, or its population.

Compounding reliability issues with the data on the Netherlands is the adjusted R^2 value. At only 0.332 (33.2 percent), only about one-third of the variance in the dependent variable can be explained using vote percentage for nationalist parties and fiscal capacity of the provinces. While a low adjusted R^2 value is not the determining factor in expressing validity of data, this number does lend a decreased level of confidence in the results of the macroanalysis.

The microanalysis of time series data in the Netherlands produced an observable pattern in its statistical significance. In both 2012 and 2016, data concerning the votes for nationalist parties was at its highest (with one exception). Both of these years were immediately preceding elections to the provincial legislatures. While a causative effect cannot be attributed, this is still a significant correlation in the data which cannot be ignored. This data suggests that in the years following an election to the regional legislatures, the effect of support for sub-state nationalist parties has a more significant impact on intergovernmental transfer payments than other years. The only exception noted here was in 2017, which had the highest level of statistical significance with a *t* value of 4.388. While there was no provincial election in this year, there was an election to the national House of Representatives.[171] This election saw a large boost in the popularity of the *Partij voor Vrijheid* (PVV); a far-right nationalist party with an extreme focus on centralized governance.[172] While this alone is not sufficient at explaining the increase, it could certainly provide one explanation as to why the statistical significance of votes for nationalist parties were more significant that year. As with all other data on the Netherlands, a broader study must be done to attribute any level of causal implications between these statistics.

---

[171] "House of Representatives March 15, 2017," Database of Election Results, March 15, 2017, https://www.verkiezingsuitslagen.nl/verkiezingen/detail/TK20170315
[172] "Election Program," Partij Voor De Vrijheid, (2021), https://www.pvv.nl/verkiezingsprogramma.html

The microanalysis of case data in the Netherlands presents highly variable results at a case-by-case basis. However, there are some general trends that merit discussion for the purpose of this paper. First, among the four provinces that have any levels of sub-state nationalism, only Groningen (Figure 1.1) and Limburg (Figure 1.2) have a negative β_1 coefficient. This implies that for each unit decrease in the number of votes received by nationalist parties, there is an increase in the amount of transfers received. In both cases, the data was not statistically significant using either the t test or f test. These results still suggest that less votes for sub-state nationalist parties could have a positive effect on intergovernmental transfer payments in Groningen and Limburg.

Figure 1.1

Transfers Received by Groningen Regressed Against Vote Percentage

R² Linear = 0.148
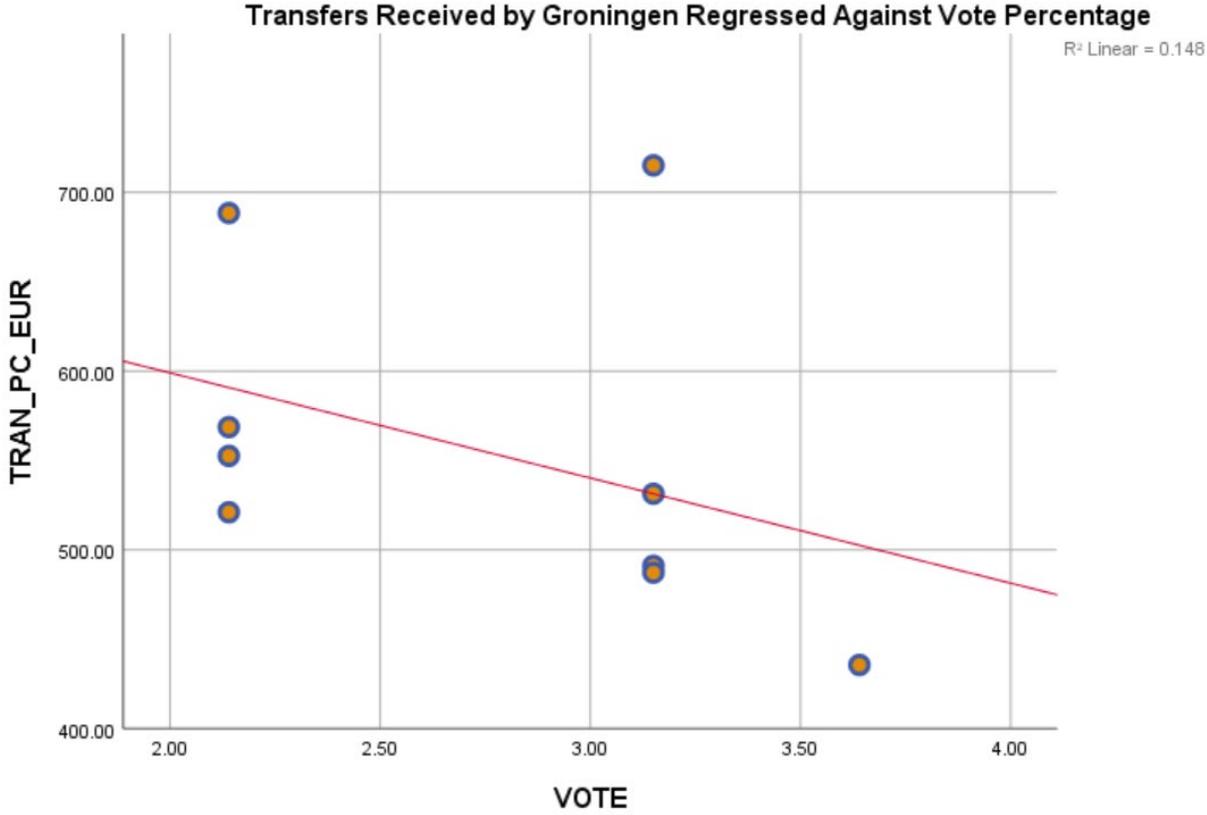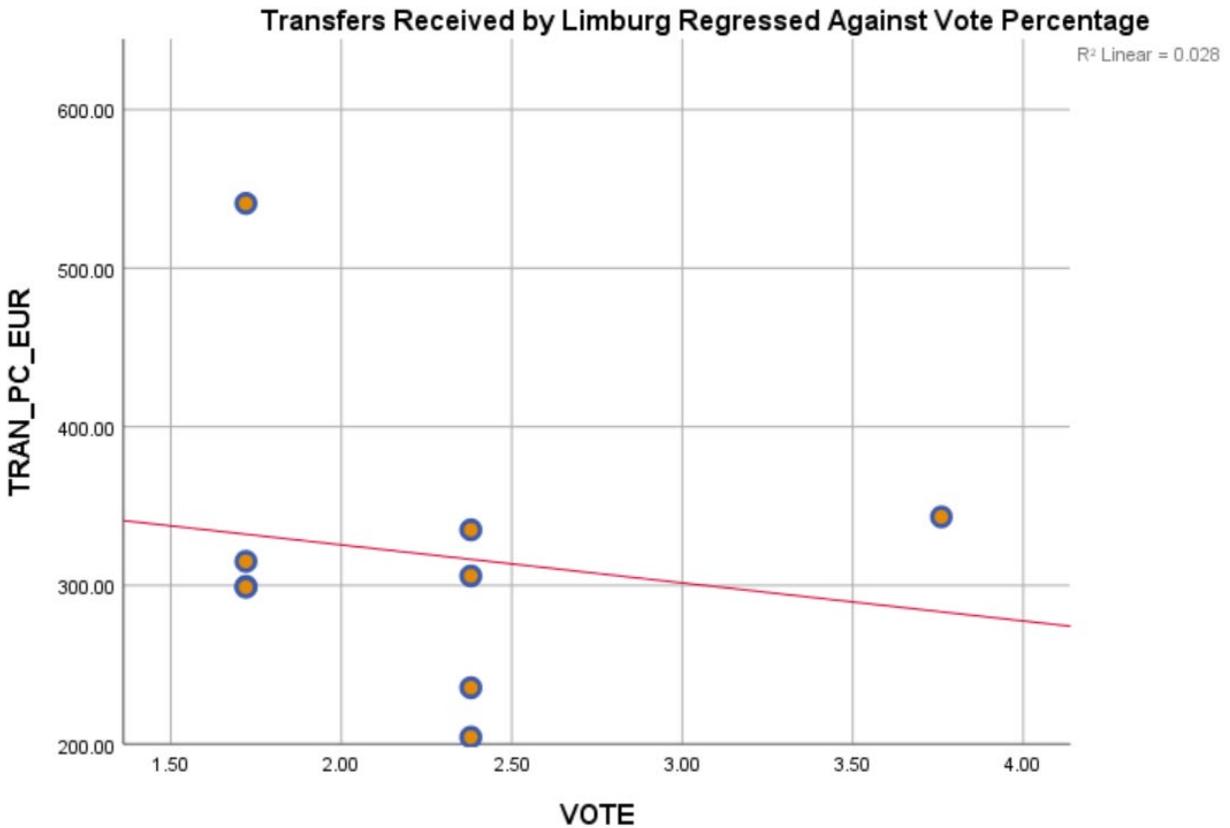
Figure 1.2

As can be seen in the above figures, these negative trends are not statistically significant due to clear outliers in the data. While the negative relationship is evident, the extreme spread of plots on the graph combined with the extremely low adjusted R^2 value indicates that no causative links can be established in this data.

Examining those provinces without sub-state nationalism as observed through regional elections, the results tend to show high levels of statistical significance in the relationship between β_2 and β_0. First, in Flevoland, Gelderland (Figure 1.3), North Brabant, South Holland, and Zeeland there is a negative relationship between the fiscal capacity of the regions and the transfers received by the provinces. This indicates that for each unit change in transfers received per capita, there is a decrease in the fiscal capacity per capita of the regions. A potential

explanatory framework could be established here using conventional equalization logic; the lower a region's capacity to provide services for its citizens, the more money they require from their central government. While the relationship itself does not provide causal inference, the prevailing logic established in the literature could lend credence to a convincing argument in favour of one.[173]

Figure 1.3
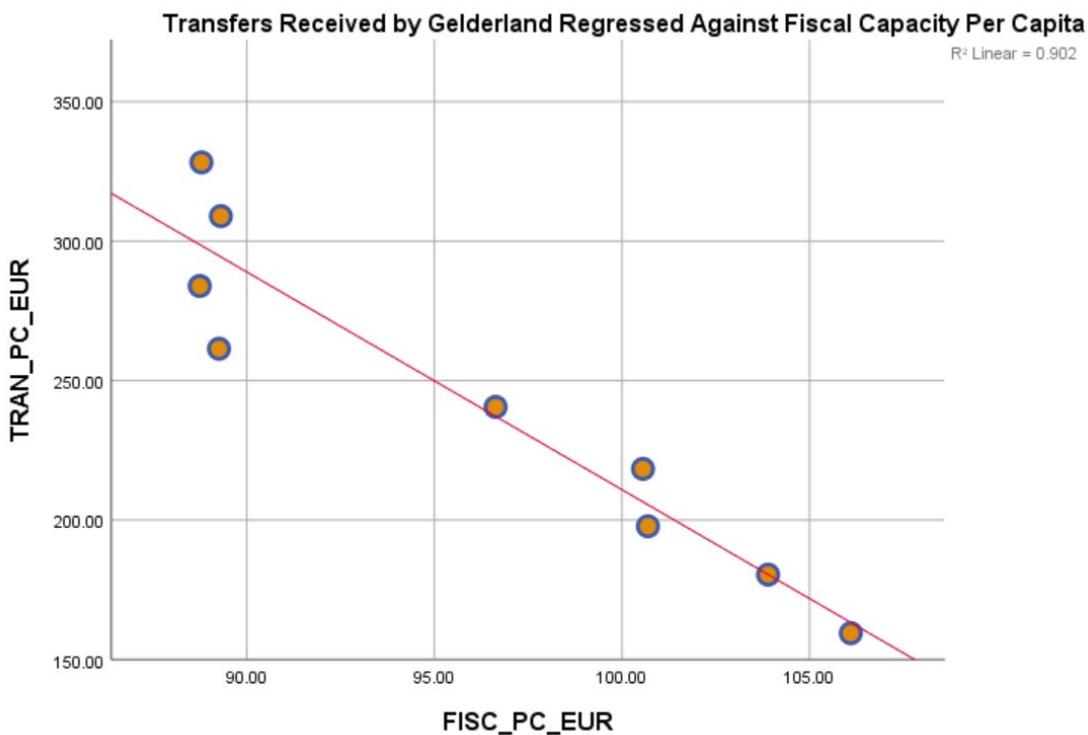
Gelderland's negative relationship is the most statistically significant linear relationship among those regions with negative β_2 coefficients. Gelderland also has the highest adjusted R^2

---

[173] Hikaru Ogawa and Sayaka Yakita, "Equalization Transfers, Fiscal Decentralization, and Economic Growth," *Public Finance Analysis* 65, no 1 (March 2009): 128

value at 0.888 (88.8%) which represents a clear and distinct negative linear relationship that allows for confident rejection of the null hypothesis at the one percent level.

Inversely, Drenthe, North Holland, and Utrecht all had statistically significant positive relationships between β_2 and β_0. These relationships indicate that when the provinces' fiscal capacities increase, so do the amount of transfers received. As with the rest of the data, no clear causal inference can be made using this data alone, however a clear, statistically significant relationship has been found to exist in this dataset. These findings tend to contradict with much of the prevailing literature, which would otherwise suggest that when fiscal capacity increases, the grants to regional government should decrease. More focused research should be done on this to investigate the results and relationships further.

6.2 – Discussion on Spain and Comparison

The macroanalysis in Spain presents a clear, statistically significant relationship between both independent variables and the dependent variable. It suggests that for every unit change in transfers received per capita (€), there is a 3.754 unit increase in vote percentage for sub-state nationalist parties and a 0.776 unit decrease in the fiscal capacity per capita (€) in the autonomous communities. This data is statistically significant enough to confidently reject the null hypothesis and demonstrates a clear relationship between the variables. This data also appears to provide more realistic values than what is observed in the Netherlands' macroanalysis. One potential statistical explanation for this is the increased sample size for Spain – 135 versus 108. Another, and perhaps more likely explanation for this, is that Spain has much higher and significantly more consistent levels of sub-state nationalism among its regions. In Spain, only four out of 15 (26 percent of) autonomous communities had no observed level of sub-state nationalism using voting patterns as a proxy. Contrasted to the eight out of 12 (66 percent of)

Dutch provinces with no observable level of sub-state nationalism, this could explain the considerable deviation between the two countries' values.

Considering the same metrics were applied between both countries, the adjusted R^2 value can provide a good base to make a comparison between the results. In Spain, 61.8 percent of the variance in the dependent variable can be explained using percentage of votes for nationalist parties and fiscal capacity per capita (€). Contrasted to the value observed in the Netherlands (33.2 percent), we can see a clear trend in the data which would indicate that the predictors used in both macroanalyses are more effective at explaining the relationship in Spain than in the Netherlands.

The time series microanalysis provides consistent and clear results across all nine years of study. In every case, the fiscal capacity per capita (€) was very statistically significant, and across all years demonstrated a negative relationship. There was no apparent pattern or trend that was observed year over year for β_2, however looking at the years of the elections there appear to be some minor trends. In 2011, the first year of the dataset where an election was held, the time series β_1 coefficient saw its highest value at 4.779 and its second lowest β_2 coefficient at – 0.808. However in the year of the next election, 2015, the β_1 coefficient value was at its lowest (1.657), and the β_2 coefficient value was at its third highest (-0.888). In fact, beginning in 2011, Spanish regions saw significant decreases in the β_1 coefficient year-over-year, culminating in that lowest value in 2015. The value increased significantly in the following year and remained steadily high in each following year. This suggests a trend that would certainly require a broader time frame to effectively analyze to extrapolate a meaningful pattern; that in the years following an election, support for nationalist parties becomes a less meaningful predictor of transfer payments until the next election, where it experiences increased significance.

The case data microanalysis showed a greater variance between cases, and fewer significant trends. Some interesting cases will be discussed however, given their outliers in the datasets. For example in Asturias, the vote percentage appeared to be a significant predictor for the transfers received per capita (€). While the β_1 value appears exceptionally high (77.216), this is likely due to two factors; a small sample size, and the region only demonstrating sub-state nationalism through the proxy of vote percentage in one year (2010). A visualization of the data (Figure 2.1) provides a clear picture of the results that could significantly explain the observations of β_1.
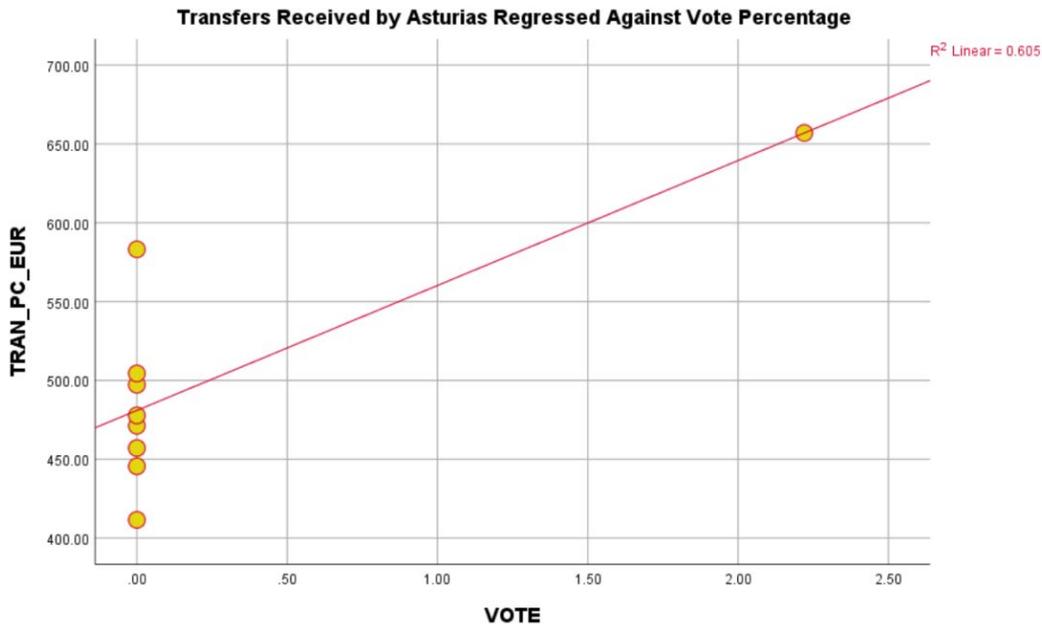
Figure 2.1

The simple scatter graph clearly indicates that in the single year that sub-state nationalist parties received votes, they received more transfers per capita. A similar trend is observed in Castile and Leon (Figure 2.2). While these relationships cannot be considered causative, their statistical significance perhaps merits further discussion.

Figure 2.2
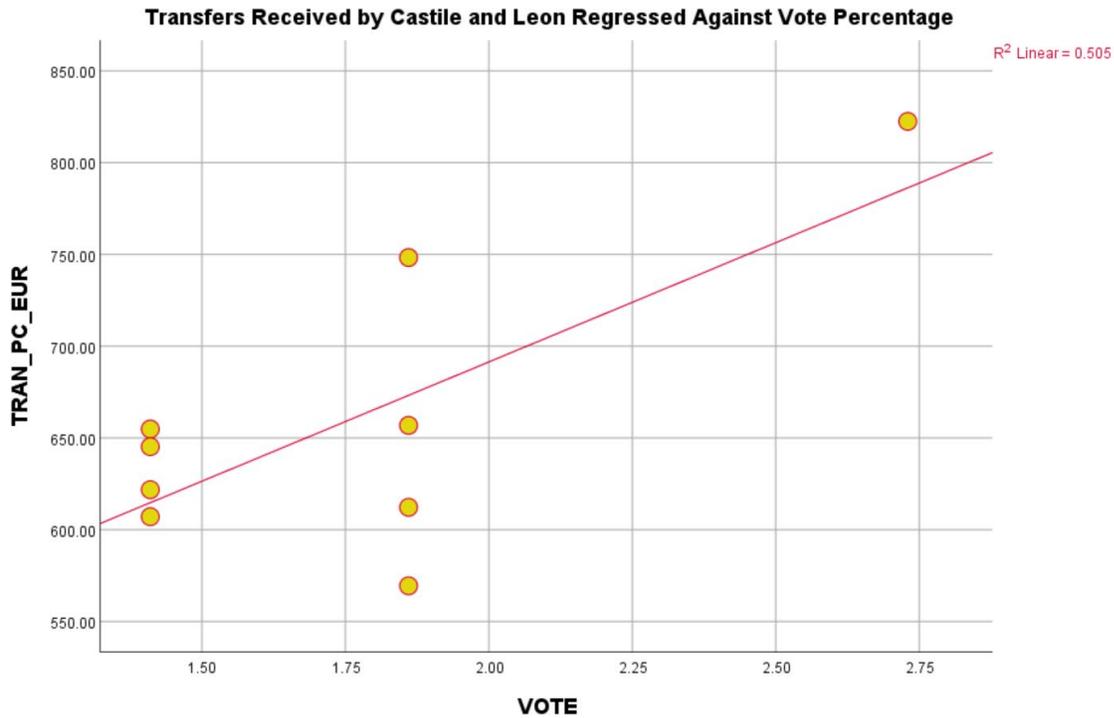
In some conventionally more nationalistic autonomous communities, notably the Canary Islands (Figures 2.3 and 2.4) and Valencia (Figure 2.5), there is generally a negative relationship between β_1 and β_0. There is no statistical significance at a conventional level in any of these autonomous communities individually, however it is still notable for two reasons. First, the variance in vote percentage between elections is often not extreme. Second, the sample size of nine is likely not large enough to provide a statistically significant trend when coupled with the generally low variance. A clear relationship between the variables is still present, and in spite of its lack of statistical significance merits at least a cursory discussion. Catalonia (Figure 2.6) was an exception to the more nationalistic communities, seeing an, albeit statistically insignificant, positive relationship between vote percentage and incoming transfers.

Figure 2.3
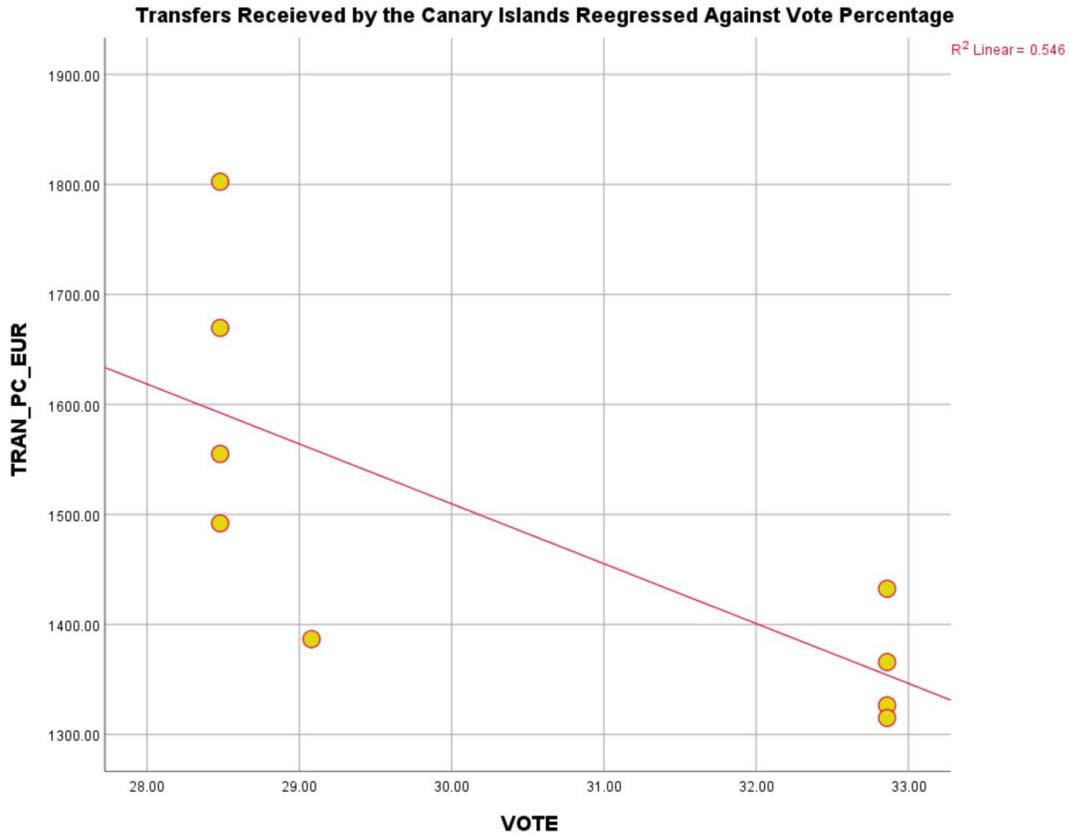
This visualization of the data in the Canary Islands over the nine-year period of the study clearly indicates a trend that when vote percentage for sub-state nationalist parties is higher, the autonomous community receives fewer fiscal transfers from the Spanish government. Inversely, they are the only autonomous community that has an observed positive β_2 coefficient that is statistically significant against the two-sided alternative at the five percent level.

Figure 2.4
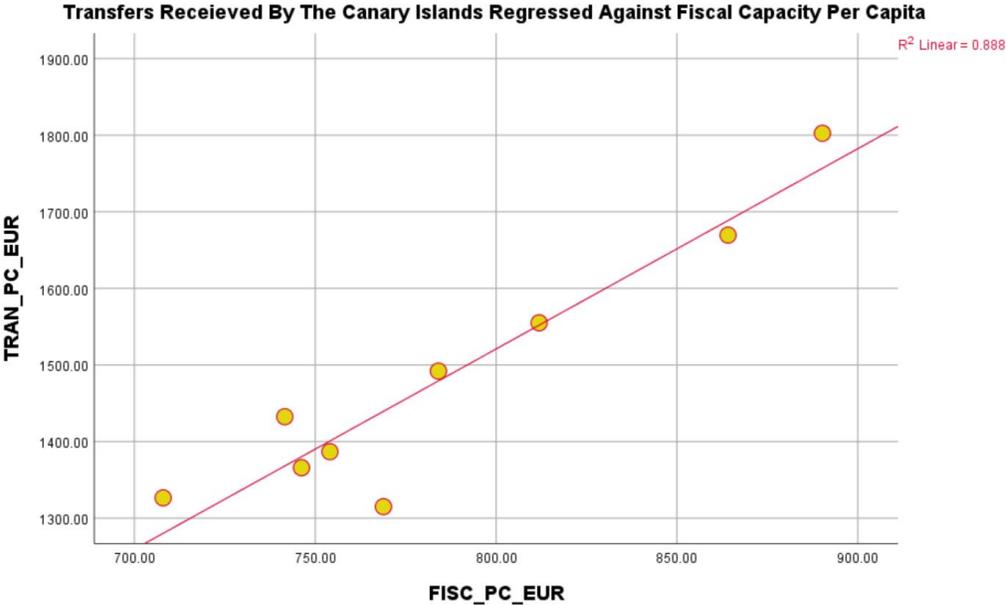
Table 3.4 represents a highly significant linear model that clearly demonstrates a positive relationship between an increase in fiscal capacity and an increase in intergovernmental transfers. They are the only autonomous community that saw a highly statistically significant positive relationship against the two-sided alternative in β_2.

Figure 2.5
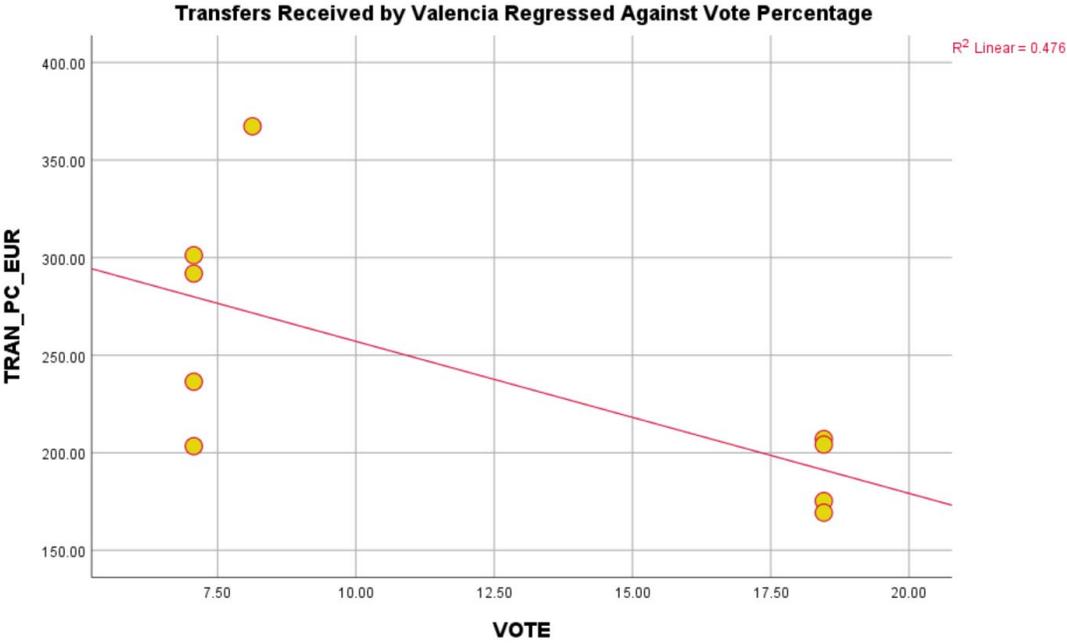
This data visualization for Valencia demonstrates, as with the Canary Islands, that when votes for sub-state nationalist parties are high, the amount of transfers received by the government tend to be much lower. Much like the Canary Islands, the sample size is not large enough to make a statistically significant observation, however the trend would indicate that more research could be done to investigate this trend more in depth.

Figure 2.6
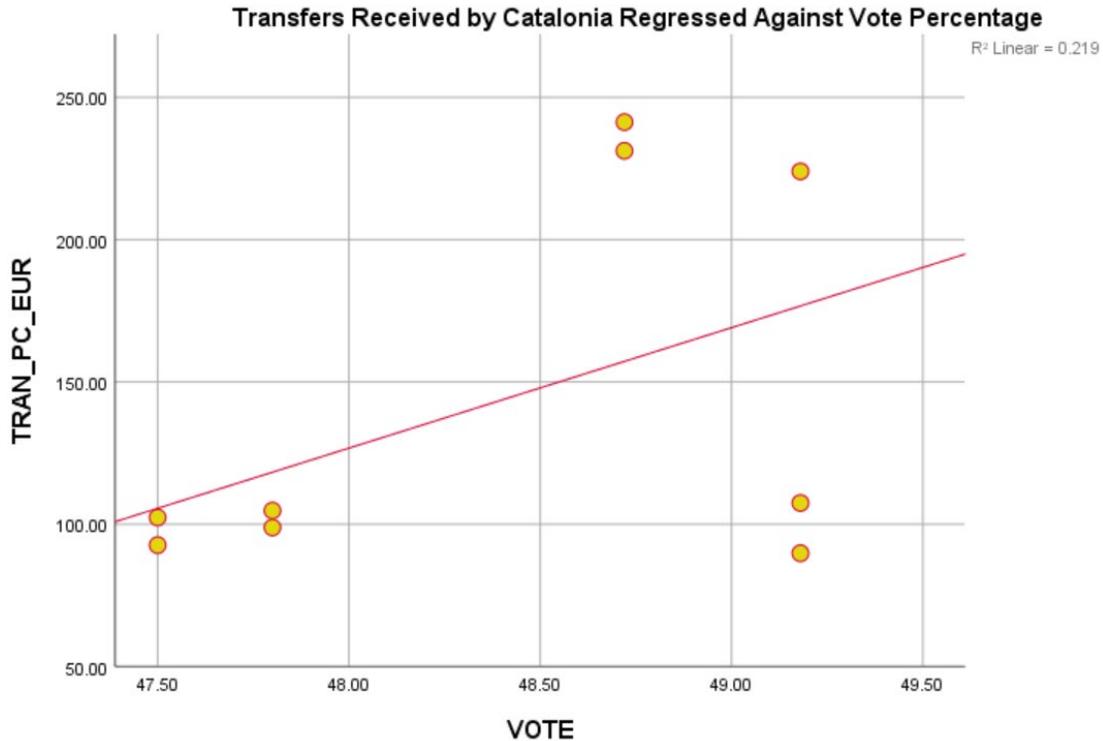
The visualization of data for Catalonia demonstrates a positive relationship, though with extreme variance of results. Given the tumultuous nature of Catalan-Spanish relations, and the domestic political unease in the region, a separate study should be undertaken to examine Catalonia more closely.

One final case in Spain that is worth discussing in Galicia (Figure 2.7). This is another region with a generally strong regional identity and language, and a relatively strong presence of regional nationalist parties. Unlike other regions which displayed some sort of pattern or trend, Galicia's relationship between vote percentage and transfers per capita is virtually non-existent. There is no apparent explanation as to why Galicia appears to differ from other regions, but perhaps could be explained through further examination of its history and economic conditions.

Figure 2.7

Transfers Receieved by Galicia Regressed Against Vote Percentage
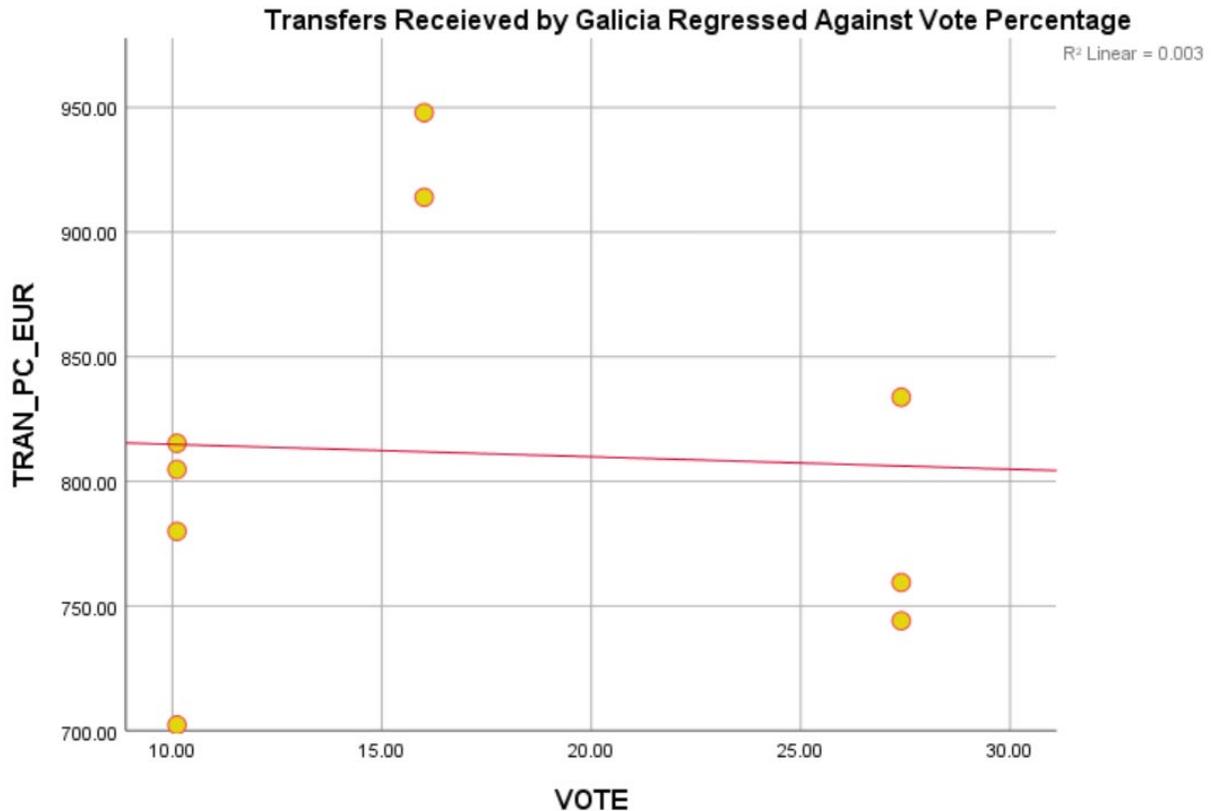
In the case of regions without levels of sub-state nationalism, there was no apparent relationship or trends in the data that is statistically significant at conventional levels. As such, this aspect of the data will not be examined in depth, however one interesting observation was made. Only Madrid had a negative relationship between β_0 and β_2; for every one unit change in the dependent variable there was a decrease of 0.293 units in fiscal capacity per capita. Why the other three autonomous communities that did not display any observable level of sub-state nationalism demonstrated (albeit statistically insignificant) positive relationships cannot be answered with this dataset. This is a further realm of study which could be expanded.

CHAPTER SEVEN – CONCLUSION AND LIMITATIONS

The data collected and analyzed for this study demonstrates that there is a statistically significant relationship between sub-state nationalism and intergovernmental transfer payments. On average, intergovernmental transfer payments to regional governments increased when support for sub-state nationalist parties did as well. What was observed in the Netherlands was a positive relationship overall between fiscal capacity of provinces and the transfers received, whereas in Spain there was a negative relationship. There is no clear explanation in theory surrounding equalization and intergovernmental transfers that would explain the Netherlands' positive relationship between these two variables. As such, this is a gap in the literature that could potentially be filled with more research on the topic, as this paper's scope and limitations cannot effectively provide an explanation to this observation.

The micro-level analyses performed on both countries found some statistically significant data. The time series data in both countries tended to coalesce around election years in its significance both in terms of dips and spikes in relevance. This trend cannot be explained using the data available, nor with any of the prevailing literature on fiscal policy or intergovernmental transfers. This is a particularly interesting phenomenon that certainly merits study both in terms of increased scope of cases and time. At a case level, contrary to popular wisdom and belief Catalonia, one of the most internationally recognizable cases of sub-state nationalism, saw no clear trend or statistically significant relationship between intergovernmental transfer payments and support for sub-state nationalism. Other traditionally nationalistic regions of Spain such as the Canary Islands and Valencia actually saw negative relationships between support for sub-state nationalism and intergovernmental transfers; the Canary Islands also the only community that saw transfers increase clearly with fiscal capacity.

Overall, there is significant and interesting data that has come from this study. Some clear macro-level trends reinforce existing literature, especially regarding Spain. The data also highlights a gap in the literature, specifically when examining the Netherlands and their positive relationship between fiscal capacity and intergovernmental transfers. This study therefore provides the basis of potential future research on this subject that might be able to fill said gap; either by examining the Netherlands more in depth or studying other unitary states where regional governments have limited revenue-generating power. For the micro-level data, the data was, in many instances, statistically significant. This could also lend itself as an introduction to further research to perhaps lend causative explanations for the trends observed in this study, or to expose new trends as the years progress and political landscapes shift.

The limitations of the relatively short time frame and limited availability of data and resources presented an impediment to the ability to make causative arguments in this study. However, the statistical significance and clear relationships present within the data suggest that this research should act as a stepping-stone to further studies on this topic. While the paper does fill some gaps, a significant amount can and should be explored in much greater detail through further studies using a broader time frame, expanded set of predictors, and greater resources to provide answers to some of the results found here. These limitations, if overcome, would likely be able to significantly advance the study of regional identities as they relate to domestic fiscal policy.

BIBLIOGRAPHY

Adelante Andealucia. "Election Program." Accessed March 10th, 2021,

    https://adelanteandalucia.org/epigrafe/00/

Allers, Maarten and Wouter Vermeulen. Fiscal Equalization and Capitalization: Evidence from

    a Policy Reform. The Hague, Netherlands, 2007.

Almendral, Violeta Ruiz. "Sharing Taxes and Sharing the Deficit in Spanish Fiscal Federalism."

    eJournal of Tax Research 10, no 1 (February 2012): 88-125

Andalusian Party. "Nacional Andalucista." Wayback Machine, accessed March 4th, 2021,

    https://web.archive.org/web/20150214050113/http://nacional.andalucista.org/

Anderson, Benedict. "Introduction" in *Imagined Communities: Reflections on the Origin and*

    Spread of Nationalism, Revised Edition, (RANGE). London, UK: Verso Books, 2006.

Andeweg, Rudy B. and Galen A. Irwin. "Multi-Level Governance" in *Governance and Politics*

    of the Netherlands, edited by Vincent Wright, 172-186. New York, NY: Palgrave

    Macmillan, 2005.

Aragonese Party. "Our Party." Accessed March 4th, 2021,

    http://www.partidoaragones.es/nuestro-partido/

Aragonese Union. "History." Accessed March 4th, 2021, https://www.chunta.org/somos/nuestra-

    historia/

Asturian Party. "Principles and Objectives." Accessed March 4th, 2021, http://asturianista.es/

Bale, Tim. *European Politics: A Comparative Introduction*. London, UK: Palgrave Macmillan,

    2017.

Baron, Alejandro. "Why Public Finance Matters: Evolution of Independence Movements in

  Catalonia and the Basque Country during the Twenty-First Century." *The SAIS Review of*

  International Affairs 35, no 2 (Summer/Fall 2015): 91-103

Béland, Daniel and André Lecours, "Sub-State Nationalism and the Welfare State: Québec and

  Canadian Federalism." *Nations and Nationalism* 12, no 1 (2006): 77-96

Blank, Thomas and Peter Schmidt. "National Identity in a United Germany: Nationalism or

  Patriotism? An Empirical Test with Representative Data." *Political Psychology 24, no 2*

  (June 2003): 289-312

Blanton, Shannon L, and Charles W. Kegley. "Interpreting World Politics" in *World Politics:*

  Trends and Transformations, (RANGE). Boston, MA: Cengage Learning, 2010.

Binnema, Harmen and Hans Vollaard. "The 2019 Provincial Elections in the Netherlands: The

  Rise of Forum voor Democratie after a Heavily Nationalized Campaign." *Regional and*

  Federal Studies (2020): 1-14

Broadway, Robin and Frank Flatters. "Efficiency and Equalization Payments in a Federal System

  of Government: A Synthesis and Extension of Recent Results." *The Canadian Journal of*

  Economics 15, no 4 (November 1982): 613-633

Canarian Coalition. "History and Ideology." Accessed March 4th, 2021,

  http://coalicioncanaria.org/historia-e-ideologia/

Casado, Juan Alberto Ruiz. "Articulations of Populism and Nationalism: The Case of the Catalan

  Independence Movement." *European Politics and Society* 21, no 5 (2020): 554-569

Catalan Solidarity for Independence. "Sectoral Proposals." Accessed March 4th, 2021,

    http://www.solidaritat.cat/pagina/propostes-sectorials/

Central Bureau of Statistics. "Province Accounts; Income and Expenses per Function by Region

    2007-2016." Government of the Netherlands, October 19, 2018.

    https://opendata.cbs.nl/statline/#/CBS/nl/dataset/80502ned/table?ts=1614279098637

Davies, Ann. "Landscape and Identities in the Basque Country" in *Spanish Spaces: Landscape,*

    Space and Place in Contemporary Spanish Culture, 60-81. Liverpool, UK: Liverpool

    University Press, 2012

de Been, Wouter. "Continuity or Regime Change in the Netherlands: Consociationalism in a

    Deterritorialized and Post-Secular World." *Ethnicities* 12, no 5 (October 2012): 531-555

Dekker, Henk, Darina Malova and Sander Hoogendoorn. "Nationalism and its Explanations."

    Political Psychology 24, no 2 (June 2003): 345-376

Deutsche Bundesbank. "The Reform of Financial Relations in the German Federal System."

    Monthly Report (September 2014): 33-52

"De Oorsprong Van De Partij Voor Het Noorden." Partij Voor Het Noorden, accessed February

    01, 2021. https://www.partijvoorhetnoorden.nl/partij/de-oorsprong-van-de-partij-voor-

    het-noorden/

EIU Digital Solutions. "Netherlands." The Economist Intelligence Unit, December 01, 2016.

    Accessed September 24, 2020.

    https://country.eiu.com/article.aspx?articleid=1584851542&Country=Netherlands&topic

    =Summary&subtopic=Political structure

"Election Program," Partij Voor De Vrijheid, (2021),

      https://www.pvv.nl/verkiezingsprogramma.html

Esquerra Republicana. "What we are." Accessed March 4th, 2021,

      https://www.esquerra.cat/ca/que-som

European Committee of the Regions. "Spain – Fiscal Powers." European Union, accessed

      February 18th, 2021. https://portal.cor.europa.eu/divisionpowers/Pages/Spain-Fiscal-

      Powers.aspx

"Federal Election 2019 Live Results," CBCnews. accessed February 6, 2021.

      https://newsinteractives.cbc.ca/elections/federal/2019/results/

Frisian National Party. "About the Frisian National Party." Accessed March 4th, 2020,

      https://www.fnp.frl/frysk/fnp-fryslan/fryske-nasjonale-partij/

"The Formation of the Jaume Font and Josep Melia is called Proposta per les Illes". *El Mundo*,

      February 11th, 2012. Accessed March 4th, 2021,

      https://www.elmundo.es/elmundo/2012/11/02/baleares/1351874489.html

Galician National Bloc. "Principals, Ideologies, and Values of BNG." Accessed March 4th, 2021,

      https://www.bng.gal/estaticas/principios-do-bng.html

Garcia, Cesar. "The Strategic Communication Power of Terrorism: The Case of ETA."

      Perspectives on Terrorism 12, no 5 (October 2018): 27-35

Gorter, Durk and Jasone Cenoz. "Multilingual Education for European Minority Languages: The

      Basque Country and Friesland." *International Review of Education* 57, no 5/6 (2011):

      651-666

Government of Catalonia. "Election Results." Processos Electorals, accessed February 4, 2021.

    https://eleccions.gencat.cat/ca/resultats-

    electorals#/dades?tipusProces=A&proces=A20171#resultats

Guardia, Arnau Busquets. "Charts: How Catalonia Voted." Politico, December 21st, 2017.

    Accessed January 12th, 2021, https://www.politico.eu/article/catalonia-election-results-

    2017-live-independence-spain/

Hamann, Kerstin. "Federalist Institutions, Voting Behaviors, and Party Systems in Spain."

    Publius 29, no 1 (Winter 1999): 111-137

Herrero-Alcalde, Ana, Jorge Martinez-Vazquez, and Encarnacion Murillo-Garcia. "The

    Challenge of Designing Capital Equalization Transfers: An Application to Spanish

    Regions." *Publius* 42, no 2 (Spring 2012): 260-288

"House of Representatives March 15, 2017." Database of Election Results, March 15, 2017.

    https://www.verkiezingsuitslagen.nl/verkiezingen/detail/TK20170315

In Tide. "Basic Principles." Accessed March 10th, 2021, https://enmarea.gal/principios-basicos/

Jiang, Tingsong and Zhiyun Zhao. "Government Transfer Payments and Regional

    Development." In *China: New Engine of World Growth*, edited by Ross Garnaut and

    Ligang Song, 434-457. Canberra, ATC: ANU Press, 2012

Jensma, Goffe. *Waddenland Outstanding: History, Landscape and Cultural Heritage of the*

    Wadden Sea Region, edited by Linde Egberts and Meindert Schroor. Amsterdam: NL,

    Amsterdam University Press, 2018.

Keating, Michael. *Nations Against the State: The New Politics of Nationalism in Quebec, Catalonia, and Scotland*. London, UK: Palgrave Macmillan, 1996

Kiesraad. "About us". Accessed February 20th, 2021. https://english.kiesraad.nl/about-us

Kiesraad. "Provinciale Staten 20 Maart 2019," Verkiezingsuitslagen, March 20, 2019, accessed January 12, 2021, https://www.verkiezingsuitslagen.nl/verkiezingen/detail/PS20190320/684842

Lecours, André. "Sub-state Nationalism in the Western World: Explaining Continued Appeal." *Ethnopolitics* 11, no 3 (2012): 268-286

Lecours, André and Daniel Béland. "Federalism and Fiscal Policy: The Politics of Equalization in Canada." *Publius* 40, n0 4 (Fall 2010): 569-596

Leonese People's Union. "About us." Accessed March 4th, 2021, https://www.upl.es/quienes-somos/

Ley Organica (LO) 5/1985, 21st of June, Representation of the People Institutional Act, BOE 1985, 10

Lijphart, Arend. "Consociational Democracy." *World Politics* 21, no 2 (January 1969): 207-225

Lokaal-Limburg. "Local Limburg." Accessed March 4th, 2021, https://lokaal-limburg.nl/lokaal-limburg/

Lopez, Jaume and Marc Sanjaume-Calvet. "The Political Use of *de facto* Referendums of Independence: The Case of Catalonia." *Representation* 56, no 4 (2020): 501-519

Ministry of Finance, "Consolidated Data Consultation of the Liquidation of the Budgets," Government of Spain,

https://serviciostelematicosext.hacienda.gob.es/SGCIEF/PublicacionLiquidaciones/aspx/
SelconsultaDC.aspx,

Ministry of Finance. "Inter-Regional Compensation Funds." Government of Spain, March 4th,
2018. https://www.dgfc.sepg.hacienda.gob.es/sitios/dgfc/en-
GB/ipr/oipr/fci/Paginas/inicio.aspx

Ministry of Finance. "Liquidación de los recursos del sistema de financiación de las
comunidades autónomas de régimen común y ciudades con estatuto de autonomía y de
las participaciones en los fondos de convergencia autonómica, regulados en la ley
22/2009, de 18 de diciembre, correspondientes al ejercicio 2010." Madrid, July 2012.

More for Mallorca. "Who are we." Accessed March 6th, 2021,
https://www.mespermallorca.cat/el-nostre-projecte/qui-som/

More for Menorca. "Who are we?" Accessed March 7th, 2021,
https://www.mespermenorca.cat/ca/inici/

National Academy for Finance and Economics, *Public Finance in the Netherlands*, The Hague,
NL, (2013): 12

New Canaries. "About us." Wayback Machine, accessed March 4th, 2021,
https://web.archive.org/web/20180720155535/http://www.nuevacanarias.org/index.php/
Quienes-Somos/quienessomos.html

Ogawa, Hikaru and Sayaka Yakita. "Equalization Transfers, Fiscal Decentralization, and
Economic Growth," Public Finance Analysis 65, no 1 (March 2009): 122-140

Olivieri, Victor. "Sub-state nationalism in Spain: primers and triggers of identity politics in Catalonia and the Basque Country." *Ethnic and Racial Studies* 38, no 9 (2015): 1610-1626

Onafhankelijke Partij Drenthe. "OPD." Accessed March 4th, 2021, https://www.opd.nl/

Ouimet, Hubert Rioux. "From Sub-state Nationalism to Subnational Competition States: The Development and Institutionalization of Commercial Paradiplomacy in Scotland and Quebec." *Regional and Federal Studies* 25, no 2 (2015): 109-128

Partij Nieuw Limburg. "PNL Election Program." Wayback Machine, accessed March 4th, 20201, https://web.archive.org/web/20051219230236/http://www.partijnieuwlimburg.nl/pages/programma.htm

Partij voor het Noorden. "The Origin of the Party for the North." Accessed March 4th, 2021, https://www.partijvoorhetnoorden.nl/partij/de-oorsprong-van-de-partij-voor-het-noorden/

"POLITICO Poll of Polls - Spanish Polls, Trends and Election News for Spain," POLITICO, accessed January 13, 2021, https://www.politico.eu/europe-poll-of-polls/spain/

Popular Unity Candidacy. "Home." Accessed March 6th, 2021, https://perguanyar.cat/

Provinciaal Belang Fryslan. "About." Accessed March 4th, 2021, https://www.provinciaalbelangfriesland.nl/de-partij/

Regionalist Part of Cantabria. "About us." Accessed March 4th, 2021, http://prc.es/prc.php/web/quienessomos

Rijksoverheid. "Annual Report and Final Law Provincial Fund 2010." Government of the

    Netherlands, 2010-2011.

    https://www.rijksbegroting.nl/2010/verantwoording/slotwet,kst156561.html

Riojan Party. "Ideology." Accessed March 4th, 2021, http://www.partidoriojano.es/ideologia/

Smith, Anthony D. "Introduction" in *National Identity*, (RANGE). London, UK: Penguin Books,

    1991.

"Sterk Lokaal," Strong Local - Strong Drenthe, accessed February 01, 2021,

    https://www.sterklokaal.nl/

Tagore, Rabindranath. "Nationalism in the West" in *Nationalism*, 34-66. Toronto, ON: Penguin,

    2010

Tierney, Stephen. "Reframing Sovereignty? Sub-State National Societies and Contemporary

    Challenges to the Nation-State." *The International and Comparative Law Quarterly* 54,

    no 1 (January 2005): 161-183

Together for Yes. "About us." Wayback Machine, accessed March 7th, 2021,

    https://web.archive.org/web/20160916035051/http://www.juntspelsi.cat/qui_som?locale=

    es

Tronconi, Fiilippo. "Ethno-Regionalist Parties in Regional Government: Multilevel Coalitional

    Strategies in Italy and Spain." *Government and Opposition* 50, no 4 (October 2015): 578-

    606

Valencian National Bloc. "Who are we?" Accessed March 4th, 2021,

    https://bloc.compromis.net/info/qui-som/

van Rijn, Marten Jan. "Dutch Local Government: A lot of Central Financing, and a lot of

    Decentralised Spending." Central Bureau of Statistics, July 10th, 2020.

    https://www.cbs.nl/nl-nl/longread/de-nederlandse-economie/2020/nederlandse-lokale-

    overheid-veel-centrale-financiering-veel-decentrale-uitgaven/3-overheidsinkomsten

Vieytez, Eduardo J. Ruiz. "Minority Nations and Self-Determination: A Proposal for the

    Regulation of Sovereignty Processes." *International Journal on Minority and Group*

    Rights 23, no 3 (2016): 402-421

Wooldridge, Jeffery M. *Introductory Econometrics: A Modern Approach, 5th Edition.* Mason,

    OH: Cengage Learning, 2012

APPENDICES

Appendix 1.1 – Exclusion of Provincial Functions Benefits 2010-2016 (NL)

Function Excluded	Reason for Exclusion	Function Classification	Variable Denomination
Administrative Organization	Municipal relations	General Management	g_{10}
Financial Supervision	Municipal relations	General Management	g_{11}
Qualitative Groundwater and Soil Management	Municipal relations	Environmental Management	g_{12}
Promotion of Economic Activities	European Union funding	Economic and Agricultural Affairs	g_{13}
Utilities	Private corporation	Economic and Agricultural Affairs	g_{14}
Urban Renewal	Municipal Relations	Spatial Planning and Public Housing	g_{15}

Appendix 1.2 – Grant Transfer Variables 2010-2016 (NL)

Function and Variable	Function Classification	Dataset Code	Variable Calculation
Total General Management (m)	General Management	g_1	$g_1 = m - g_{10} - g_{11}$
Total Public Order and Safety (p)	Public Order and Safety	g_2	$g_2 = p$
Total Traffic and Transport (t)	Traffic and Transport	g_3	$g_3 = t$
Total Water Management (w)	Water Management	g_4	$g_4 = w$
Total Environmental Management (e)	Environmental Management	g_5	$g_5 = e - g_{12}$

Total Recreation and Nature (r)	Recreation and Nature	g_6	$g_6 = r$
Total Economic and Agricultural Affairs (a)	Economic and Agricultural Affairs	g_7	$g_7 = a - g_{13} - g_{14}$
Total Wellness (l)	Welfare	g_8	$g_8 = l$
Total Spatial Order and Public Housing (h)	Spatial Planning and Public Housing	g_9	$g_9 = h - g_{15}$

Appendix 1.3 – Grant Transfer Variables 2017 and 2018 (NL)

Function and Variable	Function Classification	Dataset Code
Total General Administration	General Management	g_1
Total Traffic and Transport	Traffic and Transport	g_2
Total Water	Water Management	g_3
Total Environment	Environmental Management	g_4
Total Nature	Recreation and Nature	g_5
Total Regional Economy	Economic and Agricultural Affairs	g_6
Total Culture and Society	Welfare	g_7
Total Space	Spatial Planning and Public Housing	g_8

Appendix 2.1 – Regional Parties in The Netherlands from 2007-2010

Region	Parties Included in Dataset 2010
Drenthe	Onafhankelijke Partij Drenthe (OPD)[174], Partij voor het Noorden (PVN)[175]
Flevoland	None
Friesland	Fryske Nasjonale Partij (FNP)[176], PVN
Gelderland	None
Groningen	PVN
Limburg	Partij Nieuw Limburg (PNL)[177]
North Brabant	None
North Holland	None
Overijssel	None
South Holland	None
Utrecht	None
Zeeland	None

Appendix 2.2 – Regional Parties in the Netherlands from 2011-2014

Region	Parties Included in Datasets FY12-FY16
Drenthe	OPD
Flevoland	None
Friesland	FNP, Provinciaal Belang Fryslân[178], PVN
Gelderland	None
Groningen	PVN
Limburg	PNL
North Brabant	None
North Holland	None
Overijssel	None
South Holland	None
Utrecht	None
Zeeland	None

[174] Onafhankelijke Partij Drenthe. "OPD." Accessed March 4th, 2021, https://www.opd.nl/

[175] Partij voor het Noorden. "The Origin of the Party for the North," accessed March 4th, 2021, https://www.partijvoorhetnoorden.nl/partij/de-oorsprong-van-de-partij-voor-het-noorden/

[176] Frisian National Party, "About the Frisian National Party," accessed March 4th, 2020, https://www.fnp.frl/frysk/fnp-fryslan/fryske-nasjonale-partij/

[177] Partij Nieuw Limburg, "PNL Election Program," Wayback Machine, accessed March 4th, 20201, https://web.archive.org/web/20051219230236/http://www.partijnieuwlimburg.nl/pages/programma.htm

[178] Provinciaal Belang Fryslan, "About," accessed March 4th, 2021, https://www.provinciaalbelangfriesland.nl/de-partij/

Appendix 2.3 – Regional Parties in the Netherlands from 2015-2019

Region	Parties Included in Datasets FY12-FY16
Drenthe	None
Flevoland	None
Friesland	FNP
Gelderland	None
Groningen	PVN
Limburg	Lokaal-Limburg[179]
North Brabant	None
North Holland	None
Overijssel	None
South Holland	None
Utrecht	None
Zeeland	None

Appendix 3.1 – Regional Parties in Spain (2010)

Autonomous Community	Parties Included in Dataset	Electoral Period (Years)
Andalusia	*Andalusian Party (PA)[180]*	*2008-2012*
Aragon	Aragonese Party (PAR)[181], Aragonese Union (CHA)[182]	2007-2011
Asturias	Asturian Party (PAS)[183]	2007-2011
Balearic Islands	Unio Mallorquina (UM)	2007-2011
Canary Islands	Canarian Coalition[184], New Canaries[185]	2007-2011
Cantabria	Regionalist Party of Cantabria (PRC)[186]	2007-2011
Castile – La Mancha	None	2007-2011
Castile and Leon	Leonese People's Union (UPL)[187]	2007-2011

[179] Lokaal-Limburg, "Local Limburg," accessed March 4th, 2021, https://lokaal-limburg.nl/lokaal-limburg/
[180] Andalusian Party, "Nacional Andalucista," Wayback Machine, accessed March 4th, 2021, https://web.archive.org/web/20150214050113/http://nacional.andalucista.org/
[181] Aragonese Party, "Our Party," accessed March 4th, 2021, http://www.partidoaragones.es/nuestro-partido/
[182] Aragonese Union, "History," accessed March 4th, 2021, https://www.chunta.org/somos/nuestra-historia/
[183] Asturian Party, "Principles and Objectives," accessed March 4th, 2021, http://asturianista.es/
[184] Canarian Coalition, "History and Ideology," accessed March 4th, 2021, http://coalicioncanaria.org/historia-e-ideologia/
[185] New Canaries, "About us," Wayback Machine, accessed March 4th, 2021, https://web.archive.org/web/20180720155535/http://www.nuevacanarias.org/index.php/Quienes-Somos/quienessomos.html
[186] Regionalist Part of Cantabria, "About us," accessed March 4th, 2021, http://prc.es/prc.php/web/quienessomos
[187] Leonese People's Union, "About us," accessed March 4th, 2021, https://www.upl.es/quienes-somos/

	Convergencia I Unio (CiU), Esquerra Republicana de Catalunya (ERC)[188], Catalan Solidarity for Independence (SI)[189]	2010-2012
Catalonia		
Extremadura	None	2007-2011
Galicia	*Galician National Bloc (BNG)[190]*	*2009-2012*
La Rioja	Riojan Party (PR)[191]	2007-2011
Madrid	None	2007-2011
Murcia	None	2007-2011
Valencia	Valencian Nationalist Bloc[192]	2007-2011

Rows in *italics* indicate elections outside the regular timeframe

Appendix 3.2 – Regional Parties in Spain (2011-2014)

Autonomous Community	Parties Included in Dataset	Electoral Period
Andalusia	*PA*	*2008-2012*
Aragon	PAR, CHA	2011-2015
Asturias	None	2011-2015
Balearic Islands	Convergence for the Isles[193] (CxI)	2011-2015
Canary Islands	Canarian Coalition, New Canaries	2011-2015
Cantabria	PRC	2011-2015
Castile – La Mancha	None	2011-2015
Castile and Leon	UPL	2011-2015
Catalonia	*CiU, ERC, SI*	*2010-2012*
Extremadura	None	2011-2015
Galicia	*BNG*	*2009-2012*
La Rioja	PR	2011-2015
Madrid	None	2011-2015
Murcia	None	2011-2015
Valencia	Valencian Nationalist Bloc	2011-2015

[188] Esquerra Republicana, "What we are," accessed March 4th, 2021, https://www.esquerra.cat/ca/que-som
[189] Catalan Solidarity for Independence, "Sectoral Proposal," accessed March 4th, 2021, http://www.solidaritat.cat/pagina/propostes-sectorials/
[190] Galician National Bloc, "Principals, Ideologies, and Values of BNG," accessed March 4th, 2021, https://www.bng.gal/estaticas/principios-do-bng.html
[191] Riojan Party, "Ideology," accessed March 4th, 2021, http://www.partidoriojano.es/ideologia/
[192] Valencian National Bloc, "Who are we?" accessed March 4th, 2021, https://bloc.compromis.net/info/qui-som/
[193] "The Formation of the Jaume Font and Josep Melia is called Proposta per les Illes," El Mundo, February 11th, 2012. Accessed March 4th, 2021, https://www.elmundo.es/elmundo/2012/11/02/baleares/1351874489.html

Appendix 3.3 – Autonomous Communities with Electoral Changes in 2012

Autonomous Community	Parties Included in Dataset	Electoral Period
Andalusia	PA	2012-2015
Catalonia	CiU, ERC-Cat Si[194], Popular Unity Candidacy (CUP)[195], SI	2012-2015
Galicia	BNG	2012-2016

Appendix 3.4 – Regional Parties in Spain (2015-2018)

Autonomous Community	Parties Included in Dataset	Electoral Period
Andalusia	*PA*	*2015-2018*
Aragon	PAR, CHA	2015-2019
Asturias	None	2015-2019
Balearic Islands	More for Mallorca[196], Proposal for the Isles (El Pi), More for Menorca[197]	2015-2019
Canary Islands	Canarian Coalition, New Canaries	2015-2019
Cantabria	PRC	2015-2019
Castile – La Mancha	None	2015-2019
Castile and Leon	UPL	2015-2019
Catalonia	*Together for Yes (JxSi)[198], CUP*	*2015-2017*
Extremadura	None	2015-2019
Galicia	*BNG*	*2012-2016*
La Rioja	PR	2015-2019
Madrid	None	2015-2019
Murcia	None	2015-2019
Valencia	Valencian Nationalist Bloc	2015-2019

Appendix 3.5 – Autonomous Communities with Electoral Changes in 2016

Autonomous Community	Parties Included in Dataset	Electoral Period
Galicia	In Tide (EM)[199], BNG	2016-2020

---

[194] Re-named ERC party – source remains the same

[195] Popular Unity Candidacy, "Home," accessed March 6th, 2021, https://perguanyar.cat/

[196] More for Mallorca, "Who are we," accessed March 6th, 2021, https://www.mespermallorca.cat/el-nostre-projecte/qui-som/

[197] More for Menorca, "Who are we?" accessed March 7th, 2021, https://www.mespermenorca.cat/ca/inici/

[198] Together for Yes, "About us," Wayback Machine, accessed March 7th, 2021, https://web.archive.org/web/20160916035051/http://www.juntspelsi.cat/qui_som?locale=es

[199] In Tide, "Basic Principles," accessed March 10th, 2021, https://enmarea.gal/principios-basicos/

Appendix 3.6 – Autonomous Communities with Electoral Changes in 2017

Autonomous Community	Parties Included in Dataset	Electoral Period
Catalonia*	JuntsxCat[200], ERC-CatSi, CUP	2017-2021

*Election was called due to attempted secession from the Spanish union – Catalan legislature was dissolved by the Spanish government

Appendix 3.7 – Autonomous Communities with Electoral Changes in 2018

Autonomous Community	Parties Included in Dataset	Electoral Period
Andalusia	Adelante Andalusia[201]	2018-2022

---

[200] Reformation of Juntsx Party that participated in the 2015 election.
[201] Adelante Andealucia, "Election Program," accessed March 10th, 2021, https://adelanteandalucia.org/epigrafe/00/

Appendix 4.1 – Critical Values of the *t* Distribution

			Significance Level		
1-Tailed:	**.10**	**.05**	**.025**	**.01**	**.005**
2-Tailed:	**.20**	**.10**	**.05**	**.02**	**.01**
1	3.078	6.314	12.706	31.821	63.657
2	1.886	2.920	4.303	6.965	9.925
3	1.638	2.353	3.182	4.541	5.841
4	1.533	2.132	2.776	3.747	4.604
5	1.476	2.015	2.571	3.365	4.032
6	1.440	1.943	2.447	3.143	3.707
7	1.415	1.895	2.365	2.998	3.499
8	1.397	1.860	2.306	2.896	3.355
9	1.383	1.833	2.262	2.821	3.250
10	1.372	1.812	2.228	2.764	3.169
11	1.363	1.796	2.201	2.718	3.106
12	1.356	1.782	2.179	2.681	3.055
13	1.350	1.771	2.160	2.650	3.012
14	1.345	1.761	2.145	2.624	2.977
15	1.341	1.753	2.131	2.602	2.947
16	1.337	1.746	2.120	2.583	2.921
17	1.333	1.740	2.110	2.567	2.898
18	1.330	1.734	2.101	2.552	2.878
19	1.328	1.729	2.093	2.539	2.861
20	1.325	1.725	2.086	2.528	2.845
21	1.323	1.721	2.080	2.518	2.831
22	1.321	1.717	2.074	2.508	2.819
23	1.319	1.714	2.069	2.500	2.807
24	1.318	1.711	2.064	2.492	2.797
25	1.316	1.708	2.060	2.485	2.787
26	1.315	1.706	2.056	2.479	2.779
27	1.314	1.703	2.052	2.473	2.771
28	1.313	1.701	2.048	2.467	2.763
29	1.311	1.699	2.045	2.462	2.756
30	1.310	1.697	2.042	2.457	2.750
40	1.303	1.684	2.021	2.423	2.704
60	1.296	1.671	2.000	2.390	2.660
90	1.291	1.662	1.987	2.368	2.632
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

(Row labels for rows 10–25: **Degrees of Freedom**)

Examples: The 1% critical value for a one-tailed test with 25 *df* is 2.485. The 5% critical value for a two-tailed test with large (> 120) *df* is 1.96.

Source: This table was generated using the Stata® function invttail.

Appendix 4.2 – 10% Critical Value of the *F* Distribution

		Numerator Degrees of Freedom									
		1	2	3	4	5	6	7	8	9	10
	10	3.29	2.92	2.73	2.61	2.52	2.46	2.41	2.38	2.35	2.32
	11	3.23	2.86	2.66	2.54	2.45	2.39	2.34	2.30	2.27	2.25
D	12	3.18	2.81	2.61	2.48	2.39	2.33	2.28	2.24	2.21	2.19
e	13	3.14	2.76	2.56	2.43	2.35	2.28	2.23	2.20	2.16	2.14
n	14	3.10	2.73	2.52	2.39	2.31	2.24	2.19	2.15	2.12	2.10
o	15	3.07	2.70	2.49	2.36	2.27	2.21	2.16	2.12	2.09	2.06
m	16	3.05	2.67	2.46	2.33	2.24	2.18	2.13	2.09	2.06	2.03
i	17	3.03	2.64	2.44	2.31	2.22	2.15	2.10	2.06	2.03	2.00
n	18	3.01	2.62	2.42	2.29	2.20	2.13	2.08	2.04	2.00	1.98
a	19	2.99	2.61	2.40	2.27	2.18	2.11	2.06	2.02	1.98	1.96
t	20	2.97	2.59	2.38	2.25	2.16	2.09	2.04	2.00	1.96	1.94
o	21	2.96	2.57	2.36	2.23	2.14	2.08	2.02	1.98	1.95	1.92
r	22	2.95	2.56	2.35	2.22	2.13	2.06	2.01	1.97	1.93	1.90
D	23	2.94	2.55	2.34	2.21	2.11	2.05	1.99	1.95	1.92	1.89
e	24	2.93	2.54	2.33	2.19	2.10	2.04	1.98	1.94	1.91	1.88
g	25	2.92	2.53	2.32	2.18	2.09	2.02	1.97	1.93	1.89	1.87
r	26	2.91	2.52	2.31	2.17	2.08	2.01	1.96	1.92	1.88	1.86
e	27	2.90	2.51	2.30	2.17	2.07	2.00	1.95	1.91	1.87	1.85
e	28	2.89	2.50	2.29	2.16	2.06	2.00	1.94	1.90	1.87	1.84
s	29	2.89	2.50	2.28	2.15	2.06	1.99	1.93	1.89	1.86	1.83
o	30	2.88	2.49	2.28	2.14	2.05	1.98	1.93	1.88	1.85	1.82
f	40	2.84	2.44	2.23	2.09	2.00	1.93	1.87	1.83	1.79	1.76
F	60	2.79	2.39	2.18	2.04	1.95	1.87	1.82	1.77	1.74	1.71
r	90	2.76	2.36	2.15	2.01	1.91	1.84	1.78	1.74	1.70	1.67
e	120	2.75	2.35	2.13	1.99	1.90	1.82	1.77	1.72	1.68	1.65
e d o m	∞	2.71	2.30	2.08	1.94	1.85	1.77	1.72	1.67	1.63	1.60

© Cengage Learning, 2013

Example: The 10% critical value for numerator *df* = 2 and denominator *df* = 40 is 2.44.

Source: This table was generated using the Stata® function invFtail.

Appendix 4.3 – 5% Critical Value of the *F* Distribution

					Numerator Degrees of Freedom					
		1	2	3	4	5	6	7	8	9	10
Denominator **D**egrees of **F**reedom	10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98
	11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85
	12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75
	13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67
	14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60
	15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54
	16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49
	17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45
	18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41
	19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38
	20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35
	21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32
	22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30
	23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27
	24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25
	25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24
	26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22
	27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20
	28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19
	29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18
	30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16
	40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08
	60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99
	90	3.95	3.10	2.71	2.47	2.32	2.20	2.11	2.04	1.99	1.94
	120	3.92	3.07	2.68	2.45	2.29	2.17	2.09	2.02	1.96	1.91
	∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83

Example: The 5% critical value for numerator *df* = 4 and large denominator *df* (∞) is 2.37.

Source: This table was generated using the Stata® function invFtail.

Appendix 4.4 – 1 % Critical Value of the *F* Distribution

		Numerator Degrees of Freedom									
		1	2	3	4	5	6	7	8	9	10
	10	10.04	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85
	11	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63	4.54
D	12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30
e	13	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19	4.10
n	14	8.86	6.51	5.56	5.04	4.69	4.46	4.28	4.14	4.03	3.94
o	15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80
m	16	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69
i	17	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68	3.59
n	18	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60	3.51
a	19	8.18	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43
t	20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37
o	21	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40	3.31
r	22	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26
D	23	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21
e	24	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26	3.17
g	25	7.77	5.57	4.68	4.18	3.85	3.63	3.46	3.32	3.22	3.13
r	26	7.72	5.53	4.64	4.14	3.82	3.59	3.42	3.29	3.18	3.09
e	27	7.68	5.49	4.60	4.11	3.78	3.56	3.39	3.26	3.15	3.06
e	28	7.64	5.45	4.57	4.07	3.75	3.53	3.36	3.23	3.12	3.03
s	29	7.60	5.42	4.54	4.04	3.73	3.50	3.33	3.20	3.09	3.00
o	30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07	2.98
f	40	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89	2.80
F	60	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63
r	90	6.93	4.85	4.01	3.54	3.23	3.01	2.84	2.72	2.61	2.52
e	120	6.85	4.79	3.95	3.48	3.17	2.96	2.79	2.66	2.56	2.47
e **d** **o** **m**	∞	6.63	4.61	3.78	3.32	3.02	2.80	2.64	2.51	2.41	2.32

Example: The 1% critical value for numerator *df* = 3 and denominator *df* = 60 is 4.13.

Source: This table was generated using the Stata® function invFtail.

VITA AUCTORIS

NAME: Eric Bryan Hubberstey

PLACE OF BIRTH: Calgary, AB

DATE OF BIRTH: October 30th

EDUCATION: University of Windsor, B.A.[H], Windsor, ON, 2019