PUBLIC SPENDING ON UNIVERSITY EDUCATION IN THE AUTONOMOUS
COMMUNITIES OF SPAIN

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ABSTRACT

MICHELLE PROIETTI: Public Spending on University Education in the Autonomous Communities of Spain

(Under the direction of John Stephens)

The purpose of this thesis is to examine the link between public spending on university education of the different Autonomous Communities (ACs) in Spain and the university completion rates, expecting that the higher the amount of public funding on university education, the higher the completion rate in a given AC. This paper describes the role that autonomy plays in the set up of each AC's university education systems, as well as their systems of publicly funding university education. Because public funding of tertiary education is the responsibility of each region, there are many approaches to public funding. Due to the autonomy granted to the Spanish Communities and the diverse economic conditions these communities experience, the methods of publicly financing university education varies from region to region, displaying diversity in the completion rates of university students in the ACs.

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LIST OF ABBREVIATIONS

AC—Autonomous Community

CGPU—General Conference on University Policy

EHEA—European Higher Education Area

INE—National Institute of Statistics

LOAPA—Law

LOU—Organic Law on Universities

LOE—Organic Law on Education

MCI—Ministry of Science and Innovation

MEC—Ministry of Education and Science

I.   INTRODUCTION

The death of Dictator Francisco Franco left Spain in a very insecure state with an unknown future. Nearly every aspect of government had to be addressed and scrutinized. It was obvious that the dictatorship had neglected areas such as development, technology, and education, giving Spain a disadvantage in comparison with the other West European nations. Deficiencies in these areas left Spain unable to successfully compete and collaborate with the surrounding European countries until drastic changes were made. Over the course of recent decades, Spain has managed to make strides in economy, society, technology and education.

This thesis attempts to first discuss and identify some of the areas in which Spain's government has seen drastic change, as these changes directly impact the Autonomous Communities (ACs) today in all areas including university education. It will address the State of Autonomies' unconventional federalist government, the resulting economic asymmetry, and the differences in each AC's system of public spending. These factors in turn create a university education system, unique in structure from the other West European nations it would like to emulate, and show among the ACs a degree of diversity in the level of completion rates in university education.

Thesis: What is the link between public spending, as percent of GDP and spending per student, on university education in the Spanish ACs and the corresponding completion rates of university cycles 1 and 2 in these ACs?

Hypothesis: Autonomous Communities with a higher amount of public spending on university education as a percent of GDP and spending per student will have a more successful completion rate of university students who complete cycles 1 and 2 of Spain's university education system. If students who complete these first two cycles of university education is also the denominator, the ratio will always be 1.

Definition of Terms:

The completion rates are referring to a calculation made to compare just one aspect of the quality of university education in the ACs. For each region I divided the number of students who graduated from university cycles 1 and 2 in a given AC from the 2007/2008 school year, and divided that number by the total population size of the 20 to 30 age cohort of that AC, which can be considered the age frame of potential graduating students.

Cycles 1 and 2 refers to Spain's university education system, which is unique from the university education systems of other West European nations. Cycle 1 is a course that lasts about three years with classes that are oriented towards professional skills and leads to the *Diploma* degree. Students can then go on to cycle 2, which leads to the *Licenciatura* degree and normally lasts two years. Cycles 1 and 2 combined can last between four to six years, depending on the area of study and the academic decisions of the individual student. With the completion of cycles 1 and 2, students receive a degree that holds the value of a Masters Degree. The system continues with cycle 3 in which students pursue doctorate studies, but this paper focuses on the completion of the first two cycles.

As Spain is continually adopting the EU-wide university education legislation, known as the Bologna Process, it is gradually phasing out the unique characteristics of its system in order to be more compatible with the structure of the European Higher Education Area (EHEA). Spain adopted the undergraduate and postgraduate education cycles starting during the 2008/2009 academic year, but for this project, the data focuses on statistics collected from academic years between 2006 and 2008, while cycles 1 and 2 were still in practice (Brunner et al., 2009: 17).

Guide of the Project:

The investigation begins in Section II with a brief description of Spain's transition from a dictatorship to a democracy, in which it experienced drastic decentralization and developed a unique federalist system as a State of Autonomies. This section also outlines some of the major education legislation that has drastically impacted the structure of university education and the role of autonomy in the development and funding of university education, as the most important education policies in the development and modernization of the Spanish university education system include the legislation that is rooted in the years of transition stretching as far back as the death of Francisco Franco.

Section III is a breakdown of the diversity of the public funding systems of university education in the Spanish regions. It begins with the economic asymmetry between the regions of Spain, referring specifically to some of the economic characteristics of the ACs, which directly affect public funding of services including university education. Just as their economic situations show noticeable differentiation, the amount of funding of university education in each AC, as well as the allocation of the

said funding, changes from region to region, as will be seen in the following section. This section also gives the definition of the three types of public funding seen throughout all seventeen of the ACs is given

After the description of the methods of public funding, Section IV uses recent public spending data to address the hypothesis that more public funding results in higher completion rates. Through data collected mainly from the National Institute of Statistics (INS) this section searches for a relationship between the amount of money an AC spends on university education as a percent of GDP per capita and the number of students who graduate from cycles 1 and 2 in relation to the population size of the university education age group.

Similar to Section IV, Section V uses data from the INS to find the link between public funding per university student and the completion rates within a given AC. However, in place of using public funding as a percent of GDP, this section searches for the relationship between the amount of money an AC spends on university education per student and the completion rates of students completing cycles 1 and 2.

II.   DECENTRALIZATION

This section will describe the transition that Spain underwent from *Franquísmo* to democracy by discussing the phenomenon of democratization and decentralization. This portion begins with the basic legislation and continues with some of the most important steps in Spanish education policy. The description of education policy and legislation hold a heavy importance in understanding the history of public spending on Spain's university education system, as well as allocation of these funds, because of the impact the legislation has on each AC's freedom to develop its own method of public spending on education. This in turn affects the quality of education, the accessibility to university education and the resulting completion rates of university education in the ACs.

Historical Background:

Spain has now experienced 30 years of consolidated democracy through its parliamentary Monarchy, which is the longest period of democracy that the country has experienced in its entire history (Guillen, 2009: 2). It can also be said that this has been the most progressive periods in the history of Spain in terms of improving the services offered to the people in response to their needs. Throughout the decades following the end of Dictator Francisco Franco's dictatorship, the mission of both the Spanish government and the Spanish people has been to close the gap between itself and other West European nations in areas such as the quality of life, education, economy, and political status.

During the years under *Franquísmo*, the Spanish people experienced a government completely dominated by traditional, conservative, and isolationist policy, with a heavy focus on censorship and isolation, stunting Spain's ability to advance and improve to its fullest potential. Spain's new social democrat government immediately set out to make drastic changes and improvements in Spain's public services like healthcare, pensions and education. It was not a quick transition, nor was it harmonious. It can be said that during those first years of democracy after the death of the dictator, chaos and unrest reined more prominently than King Juan Carlos I, as the people could not agree on the exact direction the government should take the country. During these years, no major infrastructural or institutional changes were made, but, rather, more money was poured into these services until the new Spanish government was able to gain the support of its people (Guillen, 2009: 2).

Just as the government was looking for the people's support through more heavily funded public services, the government also quickly granted autonomy to its regions, an issue that had been long sought after and was possibly the largest obstacle in Spain's internal peace. The decentralization of political power gave an opportunity for reformulation of economic, political and social structure of the relations between the central government and the peripheral governments of the ACs. A State of Autonomous Communities was inaugurated by the Constitution of 1978, together with the Autonomous pacts (Moreno, 1997: 77).

With incentives like decentralization and the Spanish people's desire to emulate their Western neighbors and to be deserving of membership into the European Community, Spain began to see more institutional changes and improvements in public

services. The most important education policies in the development and modernization of the Spanish university education system include the legislation that is rooted in the years of transition stretching from Franco's death until today.

Education Legislation:

In an effort to improve the quality of education, and also to advance Spanish education to a level that is competitive to some of the other West European nations, every element of educational structure and reform comes from both national and regional policies (Bonal et al., 1999: 97).

The first national policies began with Constitution of 1978, which established the three most basic principles in which all university education is based: the right to obtain education, the academic freedom, and the autonomy of universities (Ministerio de Educación y Ciencia). Between the years of 1978-82, the new constitution and the support of the Constitutional Tribunal of the Organic Law of Harmonization of the Autonomous Process (LOAPA) generated decentralization in Spain, giving to the ACs more power to make the decisions in nearly all matters, including university education, catering to their own regional citizens. The LOAPA constructed a more or less open character to the organizational model for democratic Spain's territory (Moreno, 1997: 78-81). After the initial establishment of the LOAPA, the university education system in Spain would continue developing itself according to future legislation that was to come throughout the following years.

Even before the death of Francisco Franco, there was an attempt to begin to modernize Spanish education with the General Law of Education of 1970. However, it

was unsuccessful, and the Law of the General Ordination of the Education System

October 3, 1990 later substituted the General Law of Education of 1970 in an effort to

continue to advance the education system of the country.

The application of the political and justice mechanisms of the transition made it possible
to overcome the subsistent authoritarian residue in the norm approved in 1970 and to
open the educational system to the new dynamics generated in diverse fields, very
peculiarly to the by-product of the new autonomous structure of the State, that collects in
their diversity the existence of autonomous regions with specific characteristics and, in
some cases, with their own tongues that constitute a common cultural patrimony. -Law of
the General Ordination of the Education System Preamble, October 3, 1990[1]

The preamble demonstrates the central government's ability to recognize the

substantial differences between the Autonomous Communities, an acknowledgement

which had not occurred in the central government since the first republic in the 1930s.

Because of the dramatic differences between the ACs, which were only made more

potent throughout the years of *Franquísmo* to the point of violence and terrorism, it

became essential at the beginning of Spain's renewed democracy to make room for the

individuality of its regions. In the area of education, this trend translated as a creation of a

new autonomous structure to the entire education system in which each of the ACs has

the opportunity to tailor both their education systems and financing systems in a way that

was most appropriate for their own regional populations.

The Law of the General Ordination of the Education System created a national

standard through nation-wide guidelines in education that every AC must abide by for the

well-being of the population of each region. The articles of the legislation are quite basic,

giving to the ACs the opportunity and ability to add their own secondary guidelines that

reflect the needs, culture, language, and preferences of the people dwelling within its

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[1] La aplicación de los mecanismos políticos y jurídicos propios de la transición permitió superar los residuos

regional borders. The ACs can then manage the universities, create a great percentage of the contents of the curriculum, and incorporate the ratifications and improvements to university education that are common in many other countries throughout Europe (Jefatura del Estado Español, 1990).

Apart from the guidelines and norms established by the central government, each of the Autonomous Communities has the opportunity and the responsibility to develop policies on the structure of education and its funding. Each AC has the ability to tailor their own education systems, keeping in mind the interests and needs of their regional population. The majors created by the universities are recognized by the entire country, and therefore must follow the Register of Universities, Centers, and Majors of Study (Brunner et al., 2009: 26).

The Organic Law of the Universities (LOU) 6/2001 regulates the organization, administration, and management of university education and academic research (Ministerio de Educación y Ciencia, 2008). This lead to the updated Organic Law of Education (LOE) of May 3, 2006, which states in its preamble the objective to guarantee quality education for all of the enrolled students throughout Spain through guaranteeing the equality of opportunities, as well as the assurance and effectiveness of liberty, responsibility, tolerance, equality, respect and justice in education (Noticias Jurídicas, 2009).

More recent modifications to the LOE give a new structure to the university system, allowing universities themselves to create and propose the titles to be offered in that school without being restricted by a Government-provided catalogue as they had

been in the past. These modifications also make Spain's university education system more compatible with the European Higher Education Area (EHEA), gives the organization of university teaching greater flexibility, creates more diverse curriculum, and promotes a change in the traditional teaching methodologies, placing the student learning process at the center of its objectives and tasks (Brunner et al., 2009: 18).

These are some of the most fundamental examples of the important legislation that makes up Spain's transition from dictatorship to democracy, from totalitarianism to a unique federalism consisting of autonomous communities. The legislation demonstrates the end of an historical tradition where the central government has complete control such matters as writing curriculum and budgeting in university education systems. The contents of this section introduce the issue of autonomy, so that the issues of economic asymmetry and methods of public funding can be better understood and connected in the coming sections.

The Role of National and Regional Institutions:

The decentralized university education system of Spain is established, not only by national and regional legislation, but also by institutions at both the national and regional level. The Ministry of Science and Innovation (MCI), along with the General Conference on University Education (CGPU) make up the national regulatory framework with general laws and decrees. In fact, through the Royal Decree 432/2008, the MCI and the Ministry of Education and Science (MEC) share responsibilities as national institutions regarding university education in Spain. Each of the Autonomous Communities also contributes to the complimentary legislation through their own ministries of education.

In terms of public funding of university education, the MCI plays a very minimal role regarding the finance of education. This is because it is the responsibility of the ACs to publicly fund university education in the public sector. Within the ACs, each public university receives public funds as a lump sum and its budget must be approved by what is called the Social Council. This council oversees all financial activities of the university (Brunner et al., 2009: 32). The only role of public funding by the central institutions is the establishment of a national system of student scholarships, as well as an investment in research and development.

III.   PUBLIC SPENDING ON UNIVERSITY EDUCATION

The objective of this chapter is to describe the system of public funding of the regional university education systems throughout Spain. It begins with evidence of some of the economic asymmetry between the ACs, and continues by giving background of subsidized university education. Section III also explores some of the reforms made to the funding of education in recent years. It will then be necessary to give a brief description of the differences between public education and private education, as well as the role that each plays in the funding system. Finally, the section defines the three different methods of public funding seen throughout the regions.

Economic Differences of the ACs:

Spain became a member of the European Community in 1986 and a member of the "European Zone" in 1999 (Ministry of Science and Innovation, 2004). According to the data of the World Bank, in 2004 the Spanish economy was in the eighth position of the largest, most prosperous nations in the world, and had achieved a national GDP of 799 billion euros (Ministerio de Ciencia y Innovación, 2004). Between the years 2000-2004, the average growth of income was 2.55%, showing that Spain had undergone both deep economic transformation and economic prosperity in recent years (Brunner et al., 2009: 14).

Although Spain has experienced a great amount of economic development and growth during recent years, this does not imply that each Autonomous Community was

able to follow at that same velocity of growth. As stated earlier, there are many factors that distinguish each AC from all the others. One can find diversity in culture, history, customs, traditions, language agriculture, industry, economy and political strength. Even the geography of Spain has many incredible variations, explaining the remarkable diversity in agriculture and industry seen in every part of the country. These factors imply that completely different traditions and cultures are created, all within this relatively small country of only 504,030 square kilometers. On the other hand, the diversity in agriculture and industry also imposes immense inequality in economy between the seventeen ACs (Brunner et al., 2009: 31).

The Spanish taxation system has three levels: national, regional and local taxation. The central government's main contribution to funding university education is through the National Scholarship System. Otherwise, the AC's a largely responsible for the funding of public university education within their region, making the regional level taxes very influential on the amount of funding on university education in the regions. Due to their more advantageous economic situations, the Autonomous Communities that have a higher GDP per capita collect a larger amount of taxes per capita, and, for this reason, have more economic resources from these taxes in order to improve technology in education, have a better instructor to student ration, and to improve the general quality of the university education.

With the economic asymmetry between the ACs, interregional conflict arises because a portion of the taxes paid in the richer ACs is put toward the public funding of education in the poorer, less developed ACs who cannot cover the costs of having high quality university education (Instituto Nacional de Estadística, 2005). Later in Section III,

this concept will be discussed in more detail in regards to the three methods of public funding of university education.

In addition to the economic asymmetry between the Spanish regions, Spain faces other economic challenges that directly affect the funding of all its public services. As was the case of most other countries around the world, Spain's prosperity was greatly affected by the shock of the financial crisis. In addition, Spain is experiencing population shrinkage, a trend that will continue in the decades to come, as there are no signs of the reversal of reproduction rates. As time goes on, this will cause more damage, due to the fact that the tax-paying portion of the Spanish population will continue to decrease and the pool of money used for public funding of services such as education will dwindle. In the future, Spain will have to combat declining quality of education and possibly the demise of education accessibility. "In general, reliance on taxes for the financing of social protection has grown dramatically from the late 1970s. However, the growth of indirect taxation as a proportion of total financing is hardly good news, for it implies the regressive effects on equity (Guillen, 2009: 25)."

Public Education v. Private University Education:

For this portion of Section III, it is necessary to briefly explain the differences between public and private university education and the role public finance has on both sectors of education. The presence of public and private universities is a very important element in the expansion the financial system of university education.

The educational system of Spain is constructed by 77 universities (more than double the quantity of universities that had existed twenty years ago). Fifty of these

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universities are public and twenty-seven private universities (Ministerio de Ciencia e Innovación, 2008: 5).

There is a degree of private funding in public university education, as well as a portion of public funding in private universities in the form of scholarships. In 2005, the proportion of public spending on university education that came from the private households was 18.7%. This reflects the high level of dedication of the institutions in their huge contribution in the payment of registrations, as the remaining 81.3% of the proportion of funding is subsidized (Brunner et al., 2009: 30). Although many of the costs of university education are funded through public funding, students are required to pay a portion of the tuition for their public university education. During the 2007-2008 academic year the average annual tuition for an entire academic year of university education in Spain was 760 euros. For those students who encountered difficulties in paying their tuition, only an average of 8.2% of all public funding was allocated to student financial aid (Brunner et al., 2009: 31).

A New Crossroads:

Integration in the European Union continues to move forward in several areas including university education. Since its transition to democracy, followed by its swift accession into the EU, Spain has had an objective to advance its university system to match other EU countries' level of academic and technological advancement in university education. University teaching in Spain has recognized the necessity to promote changes and has utilized changing mechanisms that are derived from the new

norms and standards at the level of the European Higher Education Area (Ministerio de Educación, 2004).

With the creation of the EHEA there is new demand for major reorganization and harmonization of the European higher education systems and the demand for an improved efficiency of the university system. In addition, the Declaration of Bologna specifies that the higher education systems found in the EHEA should have the ability to achieve comparability, transparency and flexibility in university education. Facing a new crossroads, there has been a consistent heightening of the expectations of Spanish society in respect to the action and the services of the public universities, as well as a major existence of the said services for the sake of students participating in higher education (Perez Esparrells, 2004: 307- 308).

Some of the high expectations would require that Spain further diversify the programs offered at the universities, while consolidating those programs which overlap considerably and create inadequate usage of public funds. Additionally, Spain has had to make changes to its academic calendar, increasing the duration of the academic year.

The system by which education is funded all throughout Spain can be said to have two objectives: creating a more equal quality of education throughout the ACs and recovering the general costs of education (Bonal et al., 1999: 31). Many of the modifications of education policy intend to ensure that public funding of education is spent efficiently. The main objective of this efficiency is to design public policy that provides for the needs of a growing amount of people who seek university degrees at the

level of cycles 1 and 2 while not also increasing accordingly the amount of public funding on the education (Bonal et al., 1999: 38).

In the case of the public universities, approximately 80% of its funding comes straight from the public budget and, in more recent examples, directly from the taxes that are paid by the citizens to the regional governments. It should be guaranteed that the resources that go toward university education is put to use in the most efficient ways possible, maximizing the quality derived from the least amount of money. "The efficiency in the distribution of the public funds and the obtaining of the maximum possible performance in the use of the resources is presented currently as an indispensable demand (Perez Esparrells, 2004. 307)."

The large growth in number of students enrolled in the universities since the mid 1970s, together with the change in evaluating the quality of education based on EU-wide standards, has created the need to further reform the models of financing university education beyond even the process of decentralization. This challenge will be discussed more in the following portion of this section.

Three Methods of Public Financing Systems:

Generally speaking, around 60% of the budgets of public expenditure of each of the ACs are spent on health care, social care services, and education (Guillen, p 2). However, there is no formula that can be used for calculating the public funding of university education all across the seventeen ACs. Since the public funding of such services including university education is the responsibility of each of the ACs

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individually, there are differences across communities over approaches to the public

funding of university education institutions (Brunner et al., 2009: 31).

While each of the Autonomous Communities has a unique way of financing

public university education, it can be said that each system generally resembles one of

three types of public financing systems: incremental funding, formula-applied funding or

performance-based funding (based on the completion of specific contractual goals).

There are several ACs do not strictly apply only one of these methods, but often apply

some sort of mixture of the three methods (Ministerio Educación y Ciencia, 2009).

Incremental funding is the most traditional form of education budgeting,

assigning annually to each university system the necessary funding. According to this

budget, the university should then be able to tend to its obligations generated by the

development of its activities in the previous year. The structure of the budget is based

explicitly on the funding needs, based on the historical tendencies of that university's past

experiences.

The formula-based method of financing university education makes attempts to

quantify, in the most objective manner possible, the requirements of the funds of different

universities and assign the funding resources based on the universities' needs. There are

many ways in which this formula-based method can be adopted. The most common way

to classify the different types of formula-based funding is by tracing the amount of

subsidies. From here the formula-based method can also be divided into three categories:

- The resources are used by the university system for the development of its activities. This

  method tries to determine the cost of the necessary resources in order to carry out the

different objectives that the university plans to embark on, focusing on the funding of an institution in the necessary amount to cover the costs.

- The funding resources are put towards the processes or activities developed by the institution. Each individual objective or project that the university wants to carry out is financed separately in order to complete its objectives apart from the determined inputs.

- The funding resources can also go toward the results of the system. In a model of this kind, the dispersion of the funding resources is based on the final outcome of an institution's activities instead of in preparation for or in prediction of the costs of the activities. It works as an incentive for greater efficiency and quality of the objectives to be carried out, in order to keep the final costs to a minimum.

The third and final method of public financing of university education in Spain is the contract-based or performance-based funding. This method can be defined as an agreement of funding between the appropriate government and the university institutions in which general and/or specific goals are established that are to be reached within a specific amount of time. The funds that were promised by the government are granted to the university institutions upon their achievement of the objectives set out in the contract.

In concept, this method is very similar to the formula-based method in the sense that the specifications of what the funding institutions want and what the university will accomplish are funded to whatever degree these specifications are accomplished. However, there are also important differences between the two methods. Firstly, the formula-based approach is usually applied in a retrospective manner of the cost of activities in past experiences. Those involved in the method of contract-based funding, on the other hand, make a deal with a perspective completely focused on future goals,

possibly without cost tendencies of years past to rely on. Secondly, while the formulas are used to being contracted by standard prices without a defined limit, the contractual funding method requires the negotiation that clearly outlines in advance the details of university education expenditure.

The general trend in university education funding in the ACs has been to move from the traditional, incremental allocation system to a more transparent, formula-based system of funding. However, there are challenges that arise with the less traditional formula-based method of public funding of university education. Often times, in the ACs where formula-based funding systems have been implemented, the system is still very limited in its ability to relate public funding to the indicators of the quality of services. This, in turn, can limit the institutions' incentive to continue improvements and development in the quality and efficiency of university education. In addition, many of these regions also need to further develop more strategic mechanisms for the efficient allocation of funds to the institutions. Because these subsidies fund such specific objectives and projects, institutions are limited in their ability to align themselves with the bigger national economic and social goals (Brunner et al., 2009: 31-32).

As of 2006, the Balearic Islands, Cantabria, Extremadura, the Basque Country and la Rioja had all put in place an incremental allocation system whose institutional funding is not linked to any particular goals or objectives. Asturias and Castilla-La Mancha also use an incremental allocation system, however in these cases each system is complimented by targeted funding that are put towards specific goals and objectives. Castilla-León and Galicia practice the formula-based method based on student enrollment and the estimated cost per field of study (Brunner et al., 2009: 31-32).

Andalusia, Aragón, the Canary Islands, Catalonia, Valencia, Madrid, Murcia and Navarra all practice a combination of formula-based funding and project-based targeted funding. The formula-based portion of funding in these regions is typically based on student enrollment, costs per field of study and some performance-based indicators (Brunner et al., 2009: 31-32).

After receiving the funds, the university must properly delegate to where the funds will go. "Each public university receives public funds as a lump sum and its budget must be approved by its Social Council, which oversees its financial activities. In addition, autonomous communities provide separate funds for infrastructure and for improving facilities by means of multi-year investment plans (Brunner et al., 2009: 32)." The *OECD's Reviews of Tertiary Education: Spain* outlines the specifics of the region of *Aragón*, giving a more detailed breakdown of this regions method of publicly funding university education, using a mixture of the formula-based and performance-based methods.

Aragón has only one public university, the University of Zaragoza, within its borders, as do several other ACs in Spain. The funding of the University of Zaragoza can be broken down into five components. First, 75% of the total public subsidy can be accounted for in the form of basic funding. This portion is determined through a formula-based method, based on student enrollment and the number of staff by fields of study offered. The second component is 10% of the total subsidy, allocated to a multi-year funding for infrastructure. Third, 4% of the total funding is used for research funding on a competitive basis. The next portion of the subsidy, roughly 7-8% of the total, is used for any targeted funding directed to specific objectives. Examples of such objectives can

include new education offerings, performance-based academic rewards, or modification

and adaptation to the EHEA. Finally, the last <1% or so of the subsidy goes toward the

"improvement of links to society." This objective rewards the University of Zaragoza for

its connection to the community and its responsiveness to the needs of that surrounding

community (Brunner et al., 2009: 31-32).

The Basque Country, for example, utilizes a system of incremental allocation in

which the basic institutional financing is not connected with some objective criterion, but

was a historic extension of individual agreements of the past with institutions. Andalusia

and the Community of Madrid both have financial systems that combine "formula-based"

system (based normally in the number of students and at times in the performance of the

students) mixed with another system based on the financing of specific projects (Brunner

et al., 2009: 31).

The Community of Madrid recently established a new model of financing for the

years 2006-2010. This model is based on three different flows of financing: 1) basic

financing (85%), 2) specific financing (10%), and 3) financing to maintain the needs of

the institutions (5%) for the maintenance of historic buildings (Brunner et al., 2009: 32).

Understanding which Autonomous Community applies the specific types of

public funding method is important because it shows more clearly the diversity of the

different ACs, and deepens understanding of the impact that decentralization has had on

the Spanish regions, giving them the ability to design their own methods of funding

university education and to tailor these methods to best suit their university populations.

This information is also useful later in Sections IV and V, as it may be possible to discuss

the general success of each funding method in achieving high completion rates.

IV.   COMPLETION RATES AND SPENDING AS A PERCENT OF GDP

Section IV demonstrates a compilation of data collected directly from the National Institute of Statistics (INS). This data shows the amount of public spending on university education in each of the Autonomous Communities in correlation with the completion rate of Cycles 1 and 2 combined in the respective AC. This first graph looks at this correlation in terms of public spending as a percent of GDP. Later, in Section V, Graph 2 will address the correlation in terms of public spending per student.

The completion rates are established by first determining the number of students who graduated from university cycles 1 and 2 in a given AC during the 2007/2008 school year. That number is then divided by the size of the age group of potential graduating students. In this study, the age cohort of potentially graduating students is the number of individuals between the ages of 20-30. For example, if Valencia has a population with 33,169 individuals between 20 to 30 years old, and 11,557 students graduated cycles 1 and 2, we divide 11,557 by 33,169 to determine the completion rate of 2.87.

Graph 1. Completion Rates and Spending as Percent of GDP
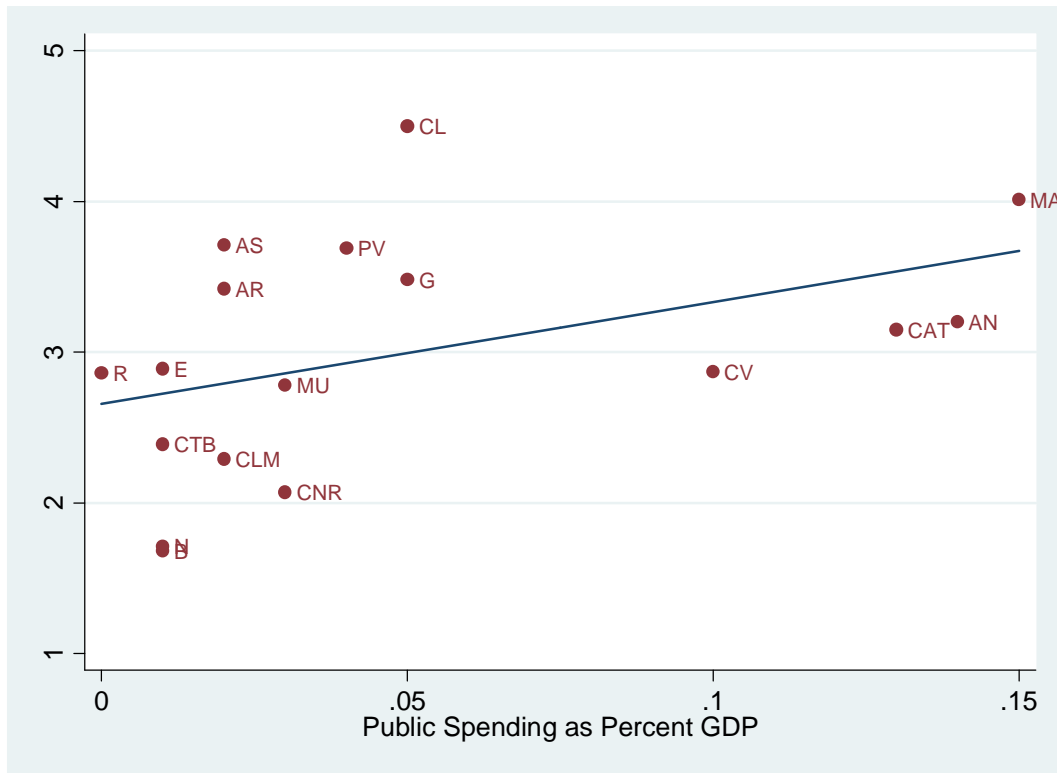
Graph 1 shows the positive correlation between the completion rates and the public funding of university education of each of the ACs. This supports my hypothesis that the higher the amount of public spending in a given AC the more successful the completion rate of university cycles 1 and 2 in that given AC.

Public Funding Method Tendencies:

This graph also shows another remarkable phenomenon as Autonomous Communities who share similar methods of public funding of university education for

distinguishable clusters on the graph. The Balearic Islands (B), Cantabria (CTB), Extremadura (E), and la Rioja (R), whom all use an incremental allocation system, can be seen in a cluster of regions with the lowest amount of public funding as a percent of GDP. The obvious outlier from this cluster is the Basque Country (PV), whose economy is much more prosperous, affording it to pay higher subsidies. Since this region has a greater amount of business and commerce, it has a tendency to have higher student enrollments than the regions with similar methods of funding education.

Unlike other rich regions of Spain, the Basque Country tax revenue does not help support the education systems of the poorer regions. Through an economic accord between the Basque Country and the Spanish central government, this region has a unique tax autonomy in which it has more control of over the extent to which its tax money contributes to State funds. Instead of being given the responsibility to cover the costs of other ACs' public expenditures, every five years a new quota is drawn up of funds that are paid directly to the State. Because more of the funding collected in the Basque Country goes back to its own university education system, this may explain why its completion rate is higher than the cluster of other ACs that use the incremental allocation system.

Asturias (AS) and Castilla-La Mancha (CLM), who use an incremental allocation system complimented by targeted funding, are also located in nearly the same area of public funding as a percent of GDP, although Asturias has a higher completion rate than Castilla-La Mancha.

Castilla-León (CL) and Galicia (G), in the formula-based method category, again, have nearly the same amount of public funding of university education as a percent of GDP. These two regions also have high completion rates above the average of the other ACs.

Although Andalusia (AN), Aragón (AR), the Canary Islands (CAN), Catalonia (CAT), Valencia (CV), Madrid (MA), Murcia (MU) and Navarra (N) are not in any cluster on the graph, one can see that this group of ACs, who all practice a combination of formula-based funding and project-based targeted funding, are all located very close to the line of correlation. This demonstrates that these ACs strongly support the hypothesis of this thesis connecting the amount of funding as a percent of GDP per capita and completion rate.

In addition to Graph 1 supporting my thesis, this graph also made visible some expenditure and completion rate tendencies that regions within the same basic method group share with one another.

V.   COMPLETION RATES AND SPENDING PER STUDENT

The following graph is similar to Graph 1 in that it demonstrates a correlation between the quantities of public funding of university education and the completion rates of cycles 1 and 2 in a given AC. However, the variable of public spending as percent of GDP from Graph 1 is replaced with public spending per student as a new variable to link to university completion rates.

Graph 2. Completion Rates and Spending Per Student
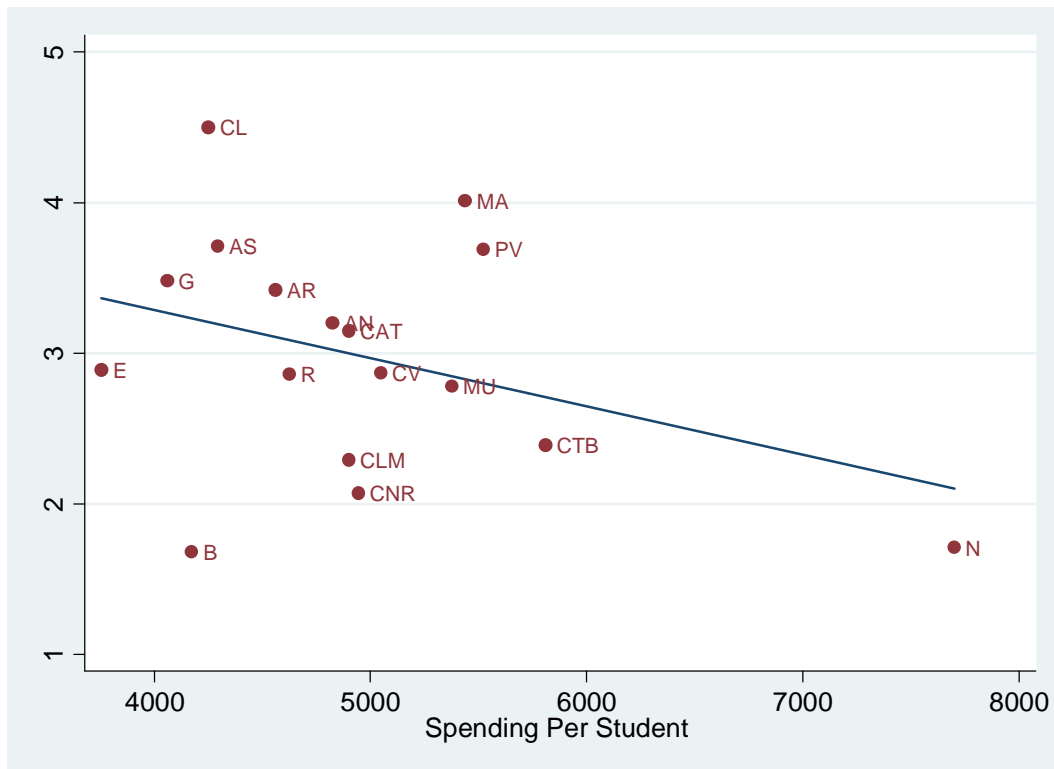
By replacing the variable of public spending as percent of GDP with public spending per student, Graph 2 completely changes the outcome of the data. This graph

works against the hypothesis, as it shows that as a given AC spends a greater amount of money per student, the completion rate within that AC is less successful. There are more visible outliers seen here than in Graph 1, but the correlation is undeniable, and may be explained by the severe inefficiencies of unit cost expenditure throughout the entire Spanish university system.

Challenges in Financing University Education:

The data of Graph 2 is very puzzling, as one would expect that the more money invested in each university student, the more successful each student would be in successfully completing his or her degree. This portion of Section V attempts to address the unexpected phenomenon of Graph 2 by discussing some of the challenges the regions all across Spain face in dispersing subsidies to their university systems. Among inefficiencies of funding resources, accountability, and cost control, perhaps the main issue is the impact of the high unit costs, or the amount of money it takes to fund each individual's educational experience from start to finish.

One of the biggest and most rampant inefficiencies that is common throughout all of Spain is the prolonged period of time it takes many students to actually complete their degree. For example, the time it should take to complete cycles 1 and 2 consecutively ought to be about five years. However, studies show that the actual average time for the completion of cycles 1 and 2 during the academic year of 2000/2001 was between 6.4 and 7.9 years. In that same year, Spain held the fourth highest figure among the 23 OECD nations for the duration of time it takes to complete advanced research programs, at an average of 5.54 years (Brunner et al., 2009: 71). This means that the regional

governments are spending a much greater amount of money per student due to the students' inability to complete their studies in the expected five-year time period. The more quickly a student finishes his or her studies, the fewer the number of terms the AC will have to fund that individual's education.

On one hand, it may seem that students have little sense of urgency in finishing their university education and entering the work force. On the other hand, similar to other nations worldwide, Spain's labor market was impacted heavily by the financial crisis of September 2008. Even before the economic crisis it was extremely difficult for Spaniards who completed their university programs to find entrance level positions in their field. Therefore, students may opt to remain in school by continuing their education or starting a new program in order to delay entering the work force.

Another area that proves to be a challenge in university funding is in student-staff ratios. Generally speaking, student-staff ratios are very low, which is normally favorable in terms of the quality of education. While Spain's student enrollment rates decreased slightly, more faculty members were hired, making the ratios more favorable yet in the classroom setting. However, this phenomenon creates a drastic increase in unit costs, as the given AC is paying a greater number of salaries for professors teaching the same smaller number of students.

In addition, it is a common occurrence to have low enrollment rates in a given academic program or duplication of programs, again raising unit costs. The challenge lies in finding a way to open up cross-institution cooperation, beginning to consolidate similar and related programs, and in providing student mobility across institutions for

portions of their degree work for the sake of lowering unit costs. If students who decide to change areas of study have to begin their degree work practically from scratch, this prolongs the duration of time it takes the student to successfully graduate with a degree, and therefore increases the unit cost of funding that individual's university education.

Public Funding Method Tendencies:

Similar to Graph 1, Graph 2 also contains several clusters of ACs that share similar methods of public funding of education. It can even be said that these clusters are more apparent in their similar tendencies. For example, the traditional incremental allocation funding method, including the Balearic Islands (B), Cantabria (CTB), Extremadura (E), and la Rioja (R) show a similar trend of all falling below the line. The only exception of this is Basque Country (PV), whose revenue is not exported to other ACs to help publicly fund their university education. This gives it an advantage to use its subsidies specifically for its own students.

Asturias (AS) and Castilla-La Mancha (CLM), who also use an incremental allocation system, complimented by targeted funding, do not cluster together, but both fall very close to the line of correlation.

Castilla-León (CL) and Galicia (G) of the formula-based method both show a very low amount of funding per student and fall above the average completion rate of the other ACs.

The regions that practice a combination of formula-based funding and project-based targeted funding, including Andalusia (AN), Aragón (AR), the Canary Islands (CAN), Catalonia (CAT), Valencia (CV), Madrid (MA), Murcia (MU) and Navarra (N),

can all be found clustered very closely together, showing similar tendencies in the amount of money each AC spends per student enrolled, as well as the completion rates of students at public universities in these ACs. There are outliers such as Madrid, which is much richer in economic resources, as well as academic resources, than the other sixteen regions. Traditionally, Madrid has always been a center for development, business and education, yielding a higher number of students enrolled proportion to the population of people between the ages of 20 and 30 years old. The Canary Islands, on the other hand, traditionally has a much lower proportion of its 20 to 30 year-old population matriculated in university education. This can, therefore, explain why this region falls so far from the rest of the cluster of ACs with formula-based and performance-based public funding of university education.

VI.   CONCLUSION

As seen in Graph 1, there is a positive correlation between the amount of public funding as a percent of GDP in a given Autonomous Community and the proportion of university age inhabitants of that AC who successfully complete university Cycles 1 and 2 and receive their *Diploma* and *Licenciatura*. As anticipated, the greater the amount of public funding as a percent of GDP per capita in a given AC, the more favorable the completion rates.

However, this study showed surprising results when looking at public spending on university education based on spending per student in Graph 2. Here it can be see that the opposite is true—there is a negative correlation between public funding and completion rates. In fact, regions that spend more per student have lower completion rates. This can be explained by the nation-wide problem of high unit costs in education in Spain. As discussed in the previous section, the regions that are spending more per student are doing so either out of inefficient funding practices or out of an attempt to drastically improve an AC's university education system, for which there is not enough successful change in the form of high completion rates.

Having acknowledged that Autonomous Communities who share similar funding methods also have similar tendencies in the relation between funding practices and completion rates, this section addresses the conclusions that can be drawn from these AC clusters in the graphs. Based on the outcome in Graph 1 and Graph 2, it can be said that

ACs that follow the same method of publicly funding university education also generally share nearly the same quantity of education subsidies and very similar correlations between the amount of public funding and completion rates. Those ACs who do not exactly follow this assumption still often fall very close to the line of correlation between expenditure and completion rates, showing that while they may not have followed the trend of ACs within their same funding method, they did follow the general trend of all the Autonomous Communities as a whole.

Ley Orgánica 1/1990, *Preámbulo, Ordenación General del Sistema Educativo.*

1. La aplicación de los mecanismos políticos y jurídicos propios de la transición permitió superar los residuos autoritarios subsistentes en la norma aprobada en 1970 y abrir el sistema educativo a la nueva dinámica generada en diversos campos, muy singularmente a la derivada de la nueva estructura autonómica del Estado, que recoge en su diversidad la existencia de Comunidades Autónomas con características específicas y, en algunos casos, con lenguas propias que constituyen un patrimonio cultural común.

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