

**Stuck With the Bill, But Why? An Analysis of the Portuguese  
Public Finance System with Respect to Surface Transportation  
Policy and Investments**

by

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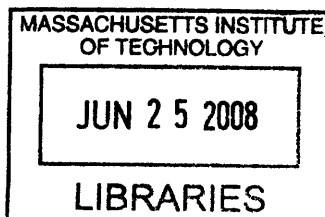
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## **Abstract**

Despite decentralization progress in other sectors, the Portuguese central government maintains significant administrative and fiscal power over national and sub-national surface transportation operations and infrastructure. This thesis provides a global view of the state of surface transportation in Portugal through an analysis of both the nation's public finance and transportation finance systems as well as a discussion of specific surface transportation systems. It reveals that national and sub-national governments in Portugal are collectively pursuing an unsustainable transportation finance policy that places a significant burden on the public finance system, unfairly privileges the nation's metropolitan areas, and enables a costly and highly politicized tug-of-war between central government and sub-national governments with respect to public transportation investments.

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# 1 Introduction

Whereas the focus of modernity is on “what should be done,” I suggest a reorientation toward “what is actually done.” In this way we obtain a better grasp—less idealistic, more grounded—of what modernity and modern democracy are and what kind of strategies and tactics may help change them for the better (Flyvbjerg, 1998, pp. 2-3).

Transportation finance systems worldwide are in a precarious state. In the United States, policy makers are faced with aging transportation infrastructure and little money to bring infrastructure to a state of good repair. In Malaysia, the government has been forced to buy back transportation infrastructure and operating concessions after private sector providers declared bankruptcy. In Italy, the government is preparing for the collapse of the state-owned national airline, which has posted significant operating losses for several years.

This precariousness is the result of a range of issues related to the lumpiness of transportation investments, competition in the transportation sector, externalities associated with transportation activity, properly pricing transportation services, dedicating government revenues for transportation expenditures, and effectively leveraging the private sector for transportation services. It raises several questions with respect to the relationship between government and transportation. Is transportation a public good? Why does government become involved in the transportation sector? What are the components of a sound government policy for transportation finance?

This thesis attempts to answer these questions through an analysis of the Portuguese public finance and transportation finance systems. The Portuguese case is interesting for several reasons. The government is a relatively young democracy, having emerged from authoritarian control in the mid 1970s, and as the nation continues to build and modify its governance system, vestiges of the authoritarian regime still guide cultural values and beliefs toward governance and its role in society. The case also provides an interesting look at the influence of the European Union (EU) on transportation activity. Portugal was admitted to the EU in 1986 and, as a result, transportation investments in the country have been both enabled and shaped by EU policies.

A final, additional characteristic makes the Portuguese case interesting. Similar to other systems worldwide, the Portuguese transportation finance system is in a precarious state. Transportation infrastructure and services place a significant financial burden on the public finance system, yet the significant burden does not always equate with significant public benefits. Transportation related debt is high in Portugal and many Portuguese citizens are beginning to ask why that is so.

Three primary research questions will address the relationship between government and transportation in both a general sense and as applied to the Portuguese case:

- What criteria should be used for evaluating transportation finance systems?
- How does the Portuguese transportation finance system measure up with respect to these criteria?
- What lessons can be drawn from the Portuguese approach to transportation finance?

Because transportation finance exists as an element within the larger public finance system, several secondary research questions must be addressed before the primary research questions can be answered. Specifically:

- What is public finance?
- What is transportation finance and how does it function as an element within a general public finance system?
- How does the Portuguese general public finance system affect transportation finance in Portugal?

Flyvbjerg asserts that focusing on “what is actually done” will change modernity and modern democracy for the better. This thesis attempts to apply Flyvbjerg’s focus to transportation finance in Portugal in the hopes that it, too, will be changed for the better.

## **1.1 Research Questions in Context**

Policy-oriented research in the field of transportation is rare in Portugal. Few resources describe either the inner workings of transportation policy and planning in Portugal or the consequences such activity brings to bear on, ultimately, the daily lives of Portuguese citizens. Three factors contribute to this situation: (a) political ideology in Portugal has for many years now been oriented to modernization, economic growth, and developing a middle class; societal concerns are secondary, (b) transportation ideology in Portugal, evidenced by both professional activity and academic research, values a technical, engineering-based focus; the social science approach is undervalued; and (c) government documents and public sector reports are only now being made available to the public.

Certainly many of the public administrators and transportation professionals active in transportation policy and planning in Portugal are familiar with how the current public finance and transportation finance systems work. Yet there is no academic record that offers researchers the background they need to propose realistic solutions for Portugal. It is hoped that this thesis will fill that gap. On a more practical level, the research in this thesis will provide a basis for the future projects and proposals developed under the Transportation Systems focus area of the MIT Portugal Program.

## **1.2 Methodology**

An embedded case methodology is used to analyze the Portuguese transportation finance system. Case studies are analyzed as sub-units of the Portuguese transportation policy and finance system, which, itself, is a case analyzed as a sub-unit of the general public finance system. The approach is largely a descriptive exercise using data collected in the field, media accounts, and government documentation.

A large body of research for this thesis was conducted during two field visits to Portugal in July 2007 and January-February 2008. The field visits yielded seventeen interviews with over twenty individuals including academics, public administrators and transportation professionals (see Appendix, Table A for a complete list of interviewees). In addition to conducting interviews, time in Portugal was spent collecting documentation (reports, studies, etc.) pertinent to transportation policy and planning in Portugal. Additional

research on the Portuguese public finance and transportation finance systems continued via a variety of media and government Internet resources.

Case-based research as employed in this thesis faces a number of limitations regarding proof, generalization, and subjectivity. First, the case study methodology is a contextualized, descriptive exercise that cannot “prove” anything definitively. Second, generalization is difficult to do with case-based research. Analysis of the Portuguese case, for example, does not create predictive theories of transportation policy and finance that can be generalized to other contexts.

A final limitation concerns the inherent subjectivity of the case study methodology. Individual bias influences the formulation, execution, and evaluation of case-based research. An attempt has been made to be as transparent and cognizant of bias as possible in this thesis. For example, the preconceived notion that transportation planning should be easier in a smaller country was dismissed upon understanding the political ideology, politics, and policies in the data relevant to the Portuguese case.

Despite these limitations, the descriptive power of analyzing the Portuguese case still lends insight to the general study of transportation policy and finance. The supposition is that the state of, influences over, and challenges to transportation policy and finance in Portugal are similar in other national and sub-national contexts. That supposition, however, will be left to future research.

### **1.3 Structure**

The thesis begins with theoretical overviews of both general public finance in Chapter 2 and transportation policy and finance in Chapter 3. These overviews provide the reader with a basis for analyzing the Portuguese public finance and transportation finance systems. The embedded case methodology begins with the largest unit of analysis, the Portuguese public finance system, in Chapter 4. It continues through the sub-unit cases, providing a description of the Portuguese transportation policy and finance system in Chapter 5 and concludes with three sets of cases studies within the transportation policy and finance system. The last chapter, Chapter 7, draws some basic conclusions and directions for additional research.



## 2 A Public Finance Primer

It is necessary to introduce the basic concepts of the theory behind public finance before beginning an analysis of the Portuguese public finance and transportation finance systems. This chapter offers an overview of public finance as a component of public policy and fiscal policy. It introduces the concept of the public good, describes several revenue-generating mechanisms for financing government activity, and provides a common language for describing concepts that define intergovernmental fiscal and administrative relationships.

### 2.1 A Driver Pulls Onto a Stretch of Highway...

In the year \_\_\_\_\_ a driver pulls onto a stretch of highway in \_\_\_\_\_. The year could be 1960, 1984 or 2008. The highway could be in the mountains outside Mexico City, the concrete jungle of Tokyo or the dense forests of rural India. The time and place are irrelevant. What is important, however, is that while continuing down the highway, this driver thinks back on that moment in time when the road did not exist in its current state. When there was only a dirt road or, maybe, no road at all. When to get from Point A to Point B drivers had to travel many miles out of their way, or suffer severe congestion, or risk unsafe traveling conditions, or take a train or, perhaps, when people had no reason at all, really, to travel between Points A and B.

Just beneath the surface of the driver's musings lie some very important questions about the highway: Why was it built? Who decided to build it? Where did they get the money? Certainly the road was not built without some sort of justification.<sup>1</sup> The road may be a vital component of regional economic development, enabling trade and tourism, or a means of introducing greater accessibility to a remote region lacking access to healthcare, education or other opportunities. The road may be a key component of a much larger network of roads and therefore intended to provide a logical link between major pieces of infrastructure, or it could be nothing more than a political tool to reward or win the favor of residents and businesses in the region. Or it may be a combination of some or all of these elements.

The local municipality, the provincial government, or the national government may have decided to build the road. It might have even been a proposal of a private company. The decision maker may have opted to tax citizens in the region in order to fund the road, or it may have levied a tax on citizens in *other* regions. It might have received a grant or loan from a national or supranational entity or bank. The decision maker may ultimately use tolls to fund or offset construction costs. Alternatively, the decision maker may have opted to take money dedicated for other activities and use it to fund construction.

The possibilities are many. One could even imagine a situation where a government does not pay for a road, but simply uses force to coerce its construction. Regardless of the specific answers, the hypothetical driver's questions can be expanded to form the very basic questions of public finance, a discipline that explores governance systems and how such systems fund and administer government activity. Whether providing for healthcare, education, public safety, or mobility (as in the case of the highway driver), governments

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<sup>1</sup> Publicly stated or otherwise.

choose to provide certain services to their citizens. The fundamental questions therefore become:

- What are public services and why do governments provide them?
- Who funds and delivers public services?
- How is money raised to provide public services?

The following chapter attempts to answer these questions by providing a primer on public finance, introducing the reader to basic elements of public finance theory. It also provides a brief description of new directions the discipline has taken over the past two decades.

## 2.2 What Are Public Services and Why Do Governments Provide Them?

Government obviously has a number of economic and political considerations to take into account when designing an approach to public service provision. Before addressing those considerations, however, it is important to briefly revisit public economics, the concept of the public good, and the logic framing the argument of why the public sector, as opposed to private markets, should provide public goods and services. The following section will also delve behind public goods to briefly explore the inherent sociological and cultural influences—values, beliefs and norms—that come to bear on the production of public goods.

### Public Goods

In a market-based economy, goods are separated into two categories: public and private. A good is considered “public” when its is both *non-rivalled*—meaning one’s consumption of the good does not decrease another’s ability to consume the same good—and *non-excludable*—meaning consumers cannot be excluded from consuming the good (Samuelson, 1954; Stiglitz, 2000). Classic examples include national defense, broadcast television or a lighthouse. A ship that benefits from a lighthouse onshore does not take away from another ship’s ability to “consume” the same good. A second ship on the horizon can avail itself of the lighthouse while the first ship is doing the same. This is the definition of a non-rivalled good. Additionally, when the lighthouse is operating, any and every ship on the horizon can see it. A specific ship cannot be selectively excluded from consuming the light from the lighthouse, a fact that satisfies the criteria of a non-excludable good.

Private goods are the opposite of public goods because they are both *rivalled* and *excludable*. An individual who drinks a cup of coffee certainly decreases another’s ability to consume that same cup of coffee. Additionally, the coffee must be purchased. Any individual lacking the money to buy the good can be prevented from consuming it.

Most public goods are not considered pure public goods because they are, to some degree, rivalled, excludable, or both. A public road, for example, might be unrivalled when few drivers are using it. It could become rivalled, however, during times of congestion. Each additional driver that enters the congested road adversely impacts all of the other drivers on the road, adding to their cumulative delay and, of course, decreasing their ability to consume the good. Roads, too, can be made excludable through the use of tolls. Even if a road was constructed with government funds and subsequently made available to the public, some governments may make use of the road contingent on payment of a toll.

Despite the fact that most public goods are not pure public goods, it is clear that markets are not the best means for their delivery.<sup>2</sup> Markets use consumption quantities as a proxy for demand, which, in turn, influences supply. However, it is difficult to determine exactly how much of a public good has been consumed. For example, farmers know how many coffee plants to grow based on the amount of coffee consumed in the particular markets they serve, whereas it is much more difficult to know how much of a lighthouse's service a ship consumed. The ship may have relied exclusively on the lighthouse throughout its night passage. On the other hand, it may have possessed advanced navigation equipment that rendered the lighthouse superfluous. The lighthouse keeper will never know. Without an indication of a consumer's preference for a service, public economists theorize that, were markets to provide public goods, there would always be an underproduction.

Apart from their difficulty in ascertaining how much of a public good to supply, market producers would also need to be able to sell the goods in order to recover costs and make a living. This is the basic function of a transaction-based market. For example, suppose an individual opts to construct a lighthouse and sell its services to ships in the region. Some ship captains may see the lighthouse as a valuable service and opt to pay for its provision. Others, however, will conceal their preference for the service and resolve not to pay, knowing that once the lighthouse is operational they will be able to take advantage of it even though they did not fund its construction. Samuelson (1954) first identified this phenomenon as "giving false signals," but it is since been coined the *free rider* phenomenon. Because the good is non-excludable, non-payers cannot be prevented from consuming the good, thus there will always be the incentive to free ride. Therefore, a basic tenet of the market system cannot be met.

Because private markets are unsuitable for producing public goods, their provision is left to the public sector. Although the public sector is not immune to the issues surrounding the underproduction of public goods and the free rider phenomenon, it is clear that the public sector is the most appropriate entity for determining the amount of public goods to be produced, either by the public sector itself or in a close regulatory relationship with the private sector.

### **Culture and Public Goods**

Examples of public goods and services provided by government include national defense, public security, fire protection, healthcare, education, transportation infrastructure, public transportation services and law. This, however, raises a fundamental question: how did government "decide" that these public goods were necessary to provide? The above list is by no means a standard one. A close survey of public goods provision across world governance systems reveals many differences. As Douglas (1992) notes, "In England, post-war governments tried to treat health care as essentially a non-excludable public good...while in America it is largely treated as a private good. In many societies food and water are treated as non-excludable" (p. 130). Here Douglas provides a critical link between public goods and society. Governments provide a specific set of public goods that acts as (a) a reflection of societal characteristics, namely the hegemonic political ideology within society, and (b) an active tool for socialization itself. Put more precisely, the fundamental question is therefore: which political ideologies drive the decision-making processes that

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<sup>2</sup> That is not to say that private markets cannot provide certain public goods with proper incentives and oversight from the public sector.

ultimately dedicate government activity to the provision of a specific set of public goods as opposed to another?

The field of economics has traditionally been unwilling to acknowledge the influence of culture on governance systems and economic activity.<sup>3</sup> Yet the influence is undeniably significant. Instead, sociology has been left to link culture, governance and economics through the study of behavioral economics, economic sociology and political science. While a complete survey of these disciplines' work is beyond the scope of this thesis, it will be useful to briefly acknowledge the cultural underpinnings of governance and economics, evidenced by two recent studies by social psychologists and economists.

The work of Licht, et al. (2007) links culture to the establishment of norms of governance, specifically the rule of law, attitudes toward corruption and democratic accountability. Cultural orientations therefore explain the degree to which these norms, as legitimate modes of wielding power, are adopted and practiced within governance systems. In the study, cultures are defined and distinguished through a framework of cultural value dimensions developed by Schwartz and applied in several previous studies. The framework, outlined in Table 1, utilizes three polar orientations—embeddedness/autonomy, hierarchy/egalitarianism, mastery/harmony—which define “three basic issues that confront all societies” (p. 662).

**Table 1. The Schwartz Framework of Cultural Value Dimensions**

Embeddedness/Autonomy	<b>Embeddedness</b> refers to a cultural emphasis on the individual as embedded in the group and committed to maintaining the status quo, propriety, and restraint of actions or inclinations that might disrupt group solidarity or the traditional order. <b>Autonomy</b> describes cultures in which the individual is viewed as an autonomous, bounded entity that finds meaning in his or her own uniqueness.
Hierarchy/Egalitarianism	<b>Hierarchy</b> refers to a cultural emphasis on obeying role obligations within a legitimately unequal distribution of power, roles and resources. <b>Egalitarianism</b> refers to an emphasis on transcendence of selfish interests in favor of voluntary commitment to promoting the welfare of others whom one sees as moral equals.
Mastery/Harmony	<b>Mastery</b> refers to a cultural emphasis on getting ahead through active self-assertion in order to master, change, and exploit the natural and social environment. <b>Harmony</b> refers to an emphasis on accepting the social and physical world as it is, trying to comprehend and fit in rather than to change or exploit it.

Source: Licht et al. (2007, p. 662).

The authors administered a cultural values survey to over 15 thousand urban schoolteachers on all seven continents over a period of ten years. Through the survey they were able to establish cultural value profiles for over fifty nations. Cross-referencing their

<sup>3</sup> This became especially true when the American institutionalist school of economic thought died out in the early 20<sup>th</sup> Century. American institutionalists were replaced by the discipline's new focus on utility maximization brought about by the Paretian and Keynesian revolutions in the 1930s (Bernard Schwartz Center for Economic Policy Analysis, 2008).



value profiles with the World Bank's Governance Indicators dataset, the authors determined that the embeddedness/autonomy dimension, which assesses the relationship between the individual and society, to be the most significant predictor of government norms. Cultures that value individual autonomy and embrace citizens as unique, free-thinking agents necessitate transparent legal systems, stigmatize and punish corrupt activity, and promote democratic accountability. Alternatively, cultures that embed the individual in society as an agent of obedience, traditional ways and the status quo promote "community-based enforcement [in place of a rule-of-law norm,]...are more likely to socialize citizens to accept bribery as a way of life...[and] call for circumscribing individual freedoms in the name of protecting social order, security, and interests of the wider group" (pp. 664-665).

In an effort to further strengthen their results and disprove reverse causality, that is, that government norms precede and create cultural values, the authors took a unique look at the relationship between culture and language. Under a body of work known as the Sapir-Whorf hypothesis, "culture and language are intertwined and mutually constitute one another" (p. 672). Because language enables cognition, decision-making and the transmission of shared values so, too, must culture. Culture and language therefore precede any ability for social organization, including governance.<sup>4</sup>

It is not difficult to make the leap from culture's impact on norms of governance to its impact on what Guiso, et al. call "political preference," essentially the individual or collective preference of "what governments should do" (2006, p. 40). The authors used data from the United States General Social Survey, a national survey used to measure the attitudes of U.S. citizens, to establish a correlation between religious affiliation and preference for income redistribution.<sup>5</sup> They also used the same data to establish a correlation between ethnic origin and preference for income redistribution, concluding that "overall, the underlying cultural determinants of preferences for redistribution do seem to have an impact on the amount of redistribution that occurs" (p. 44).

The authors' notion of political preference approximates the definition of political ideology: the set of beliefs, norms, principles and doctrines, which persists over time and prescribes a specific way to organize society. Max Weber (1921/1946), the seminal sociologist, strikes at the heart of the concept of political ideology with the following:

...the state is a relation of men dominating men, a relation supported by means of legitimate (i.e. considered to be legitimate) violence. If the state is to exist, the dominated must obey the authority claimed by the powers that be. When and why do men obey? Upon what inner justifications and upon what external means does this domination rest? (p. 78).

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<sup>4</sup> To establish a link between culture and language, the authors investigated a component of language known as "pronoun drop." This refers to a language's use of pronouns, specifically whether they are required or whether they can be left out or dropped. They found that this feature correlated significantly with a culture's measurement along the embeddedness/autonomy value dimension. Individuals who use languages which feature pronoun drop have an "entrenched view of individuals as embedded in social contexts" as opposed to autonomous and unique agents (p. 673).

<sup>5</sup> Income redistribution refers to government activity designed to capture income from the "haves" and redistribute it to the "have nots."

Political ideology is inherent in all cultures<sup>6</sup> and, subsequently, cultures throughout the world have acknowledged the “existence” of the state. The inner justifications Weber refers to hinge, in part, upon several criteria: how the state functions, provides for and protects its citizens. The production of public goods lies within these criteria and is undeniably influenced by a culture’s political ideology or ideologies. This makes most sense when government is viewed not as an abstract political construct, but as an affiliation of individuals. Even those who claim authority in Weber’s state are not immune to the ideological socialization that began long before their entrance to civil service. Whether a governance system provides free education or leaves citizens to purchase a private education, whether it offers public transportation or allows the market to provide public transportation services, the specific set of public goods the system produces is a reflection of cultural values and beliefs.

### **The Production Path of Public Goods**

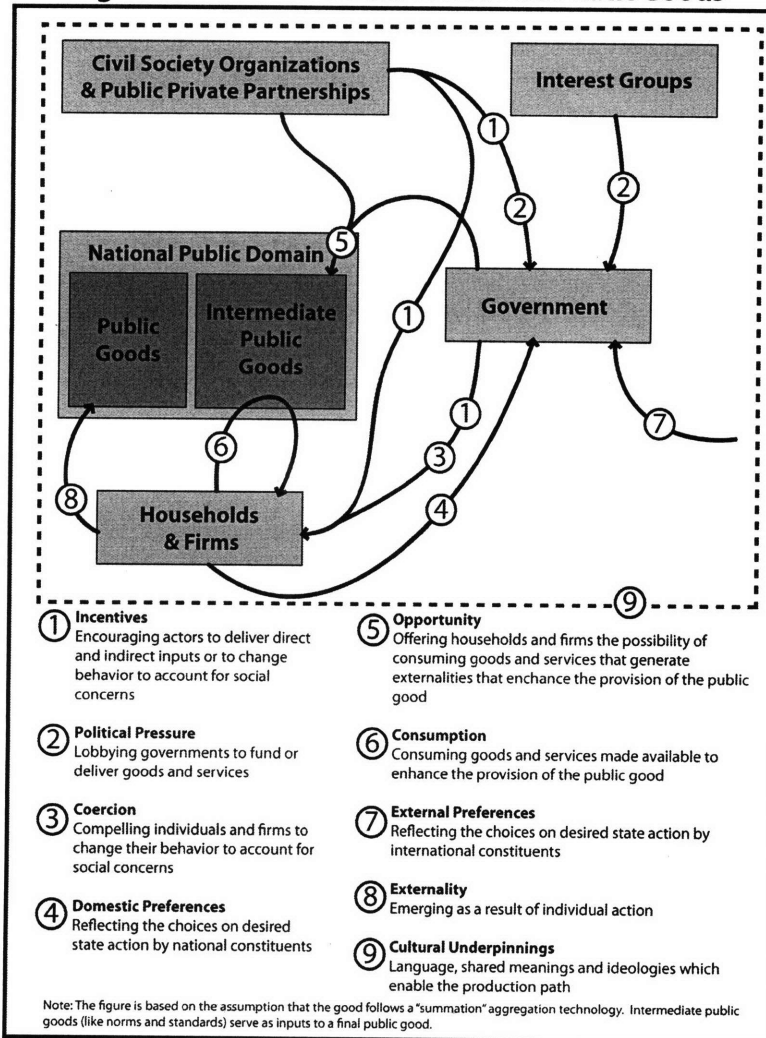
Culture is not a static construct nor is it limited to political boundaries. It changes over time, often regardless of any direct government intervention. As cultures change, governments will feel the pressure to parallel that change, whether that pressure is domestic, international, or both. While this pressure may induce changes of revolutionary proportions, it also impacts the much less revolutionary production of public goods. Acknowledging this dynamism, scholars have sought to describe the actors and actions that influence public goods provision, known as the “production path of public goods.”

Kaul and Conceição (2006) offer an illustrative diagram which describes the production path of national public goods. They envision the production of a public good as a function of incentives, political pressure, coercion, domestic preferences, opportunity, consumption, external preferences and externality. The key elements missing in the Kaul/Conceição production path, however, are the cultural underpinnings. Language, political ideology, and so forth allow the aforementioned interactive elements to occur in a space of shared meaning and understanding. Figure 1 reproduces and adapts the authors’ production path to include these crucial elements, presenting a succinct overview of the complexities behind producing and providing public goods.

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<sup>6</sup> Some sociologists go so far as to suggest that “politics is inseparable from ideology” (Seliger, 1976 as quoted in Gerring, 1997, p. 968).

**Figure 1. Production Path of National Public Goods**



Source: Adapted from Kaul & Conceição (2006, p. 12)

\* \* \*

Thus, public goods are non-rival and non-excludable goods whose production is most appropriately governed by the public sector. They are a function of political ideology, a cultural element that influences not only what public goods and services governments provide, but also the form and even existence of government itself. A survey of the public goods and services produced by government will reveal cultural values and beliefs. Still, the production of public goods is not an abstract process. Although complex, the production path of public goods can be characterized as a series of actions and reactions by domestic and international agents.

### 2.3 Who Funds and Delivers Public Services?

The second basic question of public finance addresses the key actors within the public finance system, the relationships between those actors, and their responsibilities and limitations in funding and providing public services. Here the distinction between funding

services and providing services is important. Specific administrative divisions may deliver services with funds that are provided by other levels of government. The hypothetical highway driver at the beginning of the chapter, for example, may be driving upon a piece of infrastructure owned by the municipality, but constructed with monies from regional sources, national sources, or both. Furthermore, tolls may be levied on the driver herself and utilized as a funding source.

In addition to carving up administrative divisions, government systems employ a framework of laws and policies that define the degree of autonomy, authority and responsibility for specific levels of government. The link to public finance occurs here, where governments must decide (explicitly or implicitly) the public services to be provided by specific levels of government with specific monies. This is the purview of a set of principles known as fiscal federalism (Oates, 1999). Before delving into the concepts of fiscal federalism, the following sections introduce the concept of territorial governance as well as several specific forms of governance.

### **Government and Territory**

As the previous section on public goods, culture and political ideology suggests, the evolution of modern-day governance is a long and storied history. Rather than recount that history, however, this thesis will begin with governance as a function of territory. In an effort to facilitate government activity, governments organize themselves into multiple levels—spatial jurisdictions that possess varying degrees of autonomy (Hooghe & Marks, 2003).<sup>7</sup> A national or central government can undertake government activity as one large administrative body or it may subdivide itself into nationally controlled regions or field offices. Additionally, sub-national governments can exist within government systems. Some may operate under the direct control of central government while others may be completely autonomous, operating under the control of locally elected leadership. Multi-level governments often possess “cascading jurisdictional scale” as the size of territory they govern decreases with each level. Thus, states and provinces constitute forms of “regional” government with purview over larger territories in comparison to counties and districts, which may still be regional jurisdictions yet at a much smaller scale. Regional governments can also be divided into smaller autonomous jurisdictions such as municipalities, which can be sub-divided even further into administrative councils.

For the purposes of this thesis, three levels of government are distinguished: supranational, national and sub-national, with the final level divisible into regional and municipal (or local) governments. Supranational governments have some degree of authority over one or more national governments, as is the case with the European Union and its member states.

### **Government and the Vertical Structure of the Public Sector**

Governance, in the context of the modern nation-state, can take on a variety of forms. The form is a function of (a) the existence and degree of democracy, (b) the existence of sub-national jurisdictions of government and (c) the level of government decentralization. The fiscal and administrative relationships between multiple levels of government constitute

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<sup>7</sup> Admittedly, Hooghe and Marks (2003) argue that “multi-level governance” can be organized around many things other than territory (e.g. policy problems, specific competencies), but for sake of simplicity I will use the more traditional spatial organization of territories as a foundation for understanding basic government. The authors call this “Type I Governance”.

the “vertical structure” of the public sector. Although it is possible to imagine a government that centralizes all administration at the national level, most contemporary governments, dictatorships or otherwise, have a vertical structure. In an effort to identify the factors that influence fiscal federalism, the following sections highlight different forms of governance as well as degrees of government decentralization.

### *Forms of Governance*

Forms of modern governance directly impact the vertical structure of the public sector. In an interesting study of federalism and economic performance, Inman (2007) classifies over seventy nations into five forms of governance— federal democracy, administrative federal democracy, unitary democracy, federal dictatorship and unitary dictatorship—using three criteria, “[a] the number of provincial [sub-national] governments, [b] policy assignment for the provision of important government services between central and provincial governments and [c] constitutionally protected [and locally elected] provincial [sub-national] representation to the central government legislature” (p. 530). Under Inman’s classification, governments can be either federal or unitary and either democratic or authoritarian.

Federal governments possess two or more provinces that have policy autonomy and representation in the national legislature. Unitary governments, however, “either lack politically independent provincial governments or, if there are provincial or lower-tier governments, those governments either lack independent policy authority or central government representation [meaning locally-elected representatives do not serve on a central government legislative body]” (p. 530). The author calls out “administrative federal governments” as systems that are unitary by nature, but rely heavily upon sub-national governments for central-level policy implementation. The category acts as a middle ground between the federal/unitary designations.

Although the author does not offer an explicit distinction between democratic and authoritarian governments, it can be assumed that the former pursues competitive elections under the tenet of equal rights for all citizens whereas the latter does not. A sample of Inman’s country classifications by forms of governance can be found in Table 2.

**Table 2. Countries Classified by Form of Governance**

Sample Period: 1965-2000

<b>Federal Democracy</b>	<b>Administrative Federal Democracy</b>	<b>Unitary Democracy</b>	<b>Federal Dictatorship</b>	<b>Unitary Dictatorship</b>
Argentina	France	Chile	Ethiopia	China <sup>a</sup>
Germany	Japan	Jamaica	Malaysia	Nicaragua
India	Sweden	New Zealand	Russia	Thailand
United States	Uruguay	Portugal	Yugoslavia	Zimbabwe

Source: Adapted from Inman (2007, pp. 532-535).

<sup>a</sup> Inman admits that China could be classified as a federal dictatorship, but claims the results of his analysis were unaffected by this change.

### *Governance Forms and Decentralization*

As Inman’s “administrative federal democracy” category suggests, decentralization can take on a variety of forms and is, in fact, a much more complex concept than its counterpart, centralization. Rondinelli provides an illustrative delineation of three degrees of

decentralization—deconcentration, delegation and devolution—that illustrates where governments fall on the spectrum from deconcentration, the weakest form of decentralization, and devolution, the strongest (1990).

Administrative *deconcentration* occurs when a central government decentralizes activity to other levels within central government or to field offices under its direct control. This form is often considered a more efficient means of service delivery and may even grant field office directors some decision-making autonomy. The democratic potential of this form of decentralization is severely limited, however. Those same field offices are ultimately beholden to central government, not the citizens in their charge.

By contrast, under *delegation*, a decentralizing government opts to authorize the decision-making process *for* and the provision *of* public services to a sub-national government. In most cases, however, the sub-national government to which authority has been delegated lacks fiscal autonomy. This is not a trivial distinction. Because it cannot raise its own revenue, it must rely on national government for all funding support. Although sub-national governments have some degree of autonomy under the delegation process, central government still wields significant control and is thus able to act in its own self-interest (Bahl, 2007; Weingast, 2006). A central government could, for example, vary the level of support offered to specific jurisdictions as a means of meting out reward or punishment (see Democracy under Section 2.5).

The process of *devolution* takes delegation a step further, providing sub-national governments both the autonomy to make decisions about the provision of public services as well as the authority to raise revenue to fund government activity. Local governments are thus fully accountable for the services they provide. Devolution is generally considered the preferred vertical structure for the public sector (Bird, 1999; Nechyba, 2007; Oates, 1999, 2006; Smoke, 2007; Tiebout, 1956), although it is not without its pitfalls and critics (Bird & Wong, 2005; Prud homme, 1995).

### **Elements of Fiscal Federalism**

The vertical structure of a public finance system describes the two basic elements of fiscal federalism: a government's authority to (a) deliver public services and (b) raise the revenue necessary to fund those services. The principles of fiscal federalism are not exclusive to federalist governance systems. Even unitary governments must coordinate activity through a series of decisions regarding jurisdictional authority and resource allocation.

Whether by decree, deliberation or default, national and sub-national governments receive (or take) the authority and consequent responsibility to provide public services to the citizens they govern. This speaks to the wide variety of approaches to fiscal federalism. In some cases, laws and policies strictly outline a government's vertical structure, defining the authority and responsibility for public services as they relate to that structure. Most national governments and their accompanying legal and policy frameworks are not so thorough, however. There is a definite tradeoff between a clear and comprehensive approach versus one that is piece-meal. The comprehensive approach may thoroughly define responsibility, but it may also be inflexible, slow to change, and politically difficult to implement. A piece-meal approach may create an extremely flexible and responsive environment, but it may be too ambiguous and leave gaps in policy. Basic service provision must be sufficiently

mandated in order to avoid administrative gaps that may prove harmful to the governed;<sup>8</sup> yet sub-national governments need the authority to provide new public services as conditions change. A well-designed system will harmonize service provision at specific levels of government, account for spillovers between jurisdictions, minimize jurisdictional conflict and accommodate flexibility in new approaches to service provision.

Good design also necessitates delegating the authority to raise revenue for service provision to various levels of government. This, the second basic element of fiscal federalism, concerns fiscal decentralization. While the specific financial mechanisms used to generate revenue will be discussed in detail in the following section on fiscal policy, what is of concern here is a jurisdiction's *ability* to raise its own revenue, known simply as "own source revenue."

### *Fiscal Equivalence*

The two basic elements of fiscal federalism—authority and revenue—are linked by the economic concept of *fiscal equivalence*. Olson (1969) describes fiscal equivalence as matching "those who receive the benefits of a collective [public] good and those who pay for it" (p. 483). Under this definition, governments (with obvious physical boundaries) produce public goods, the benefits of which impact a designated population or area, considered the goods' "benefit boundary". As an argument of economic efficiency (Pareto optimal conditions), the boundary of benefits from public goods should therefore match the boundary of revenue generation for those goods. Since some public goods are more local in scale (public schools or parks, for example), local governments should provide those services and raise the revenue for their provision. On the other hand, large-scale public goods, such as national defense, should remain the responsibility of national or regional governments.

The fiscal equivalence condition argues that sub-national jurisdictions should provide the lion's share of public good production. As previously stated, different political ideologies influence preferences for specific public goods. So, too, do differences in climate, terrain and economic conditions. A key fact is that these differences often manifest themselves at a local or regional level. If "local" public goods are produced by national government, there will certainly be a sub-optimal provision of public goods, as the national government will not be able to account for those differences as effectively as sub-national government. In such a situation, the national government would provide a set of public services that would likely create an overprovision in some areas and an under provision in others.

The fiscal equivalence condition also influences government decision-making processes regarding service provision and the pursuit of democracy. When specific benefits are tied to specific revenue-generating mechanisms, citizens are more aware of the link between the two. Governments must therefore make public policy decisions that reflect the political ideologies of the governed or risk being voted out of office.

Fiscal federalism in any multi-level governance system is an organic piece of policy and law that fits within a culture's political ideologies as well as a nation's specific form of governance. It will change as politics, power and values (and even forms of governance) change, a fact that holds true for both established and emerging economies (Stiglitz, 2002). It is also an extremely powerful policy tool. While a public finance system can be a uniting

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<sup>8</sup> For example, by not clearly defining the role of both national and sub-national governments in providing public safety services—police, fire, and so forth—public sector response to any disaster would be at best disorganized and at worst catastrophic.

force that harmonizes revenue generation, equalizes public goods provision and improves service delivery, it can also be a source of great contention between levels within a specific system.

## 2.4 How Is Money Raised To Provide Public Services?

While the principles of fiscal federalism address the authority and responsibility of multi-level government to provide public services, fiscal policy concerns the actual mechanisms used to raise revenue as well as the rules and laws that address government deficits and expenditures.<sup>9</sup> Those rules and laws vary widely from government to government. Rather than discuss the myriad possibilities of their formulation, this section will focus on the various mechanisms governments use to raise revenue. This is not intended to de-emphasize the importance of a policy framework in defining national and sub-national fiscal policy, however. Each of the aforementioned elements has a strong influence over economic activity in a specific economy.<sup>10</sup>

Government revenue-generating mechanisms fall into four broad categories: user fees, taxes, intergovernmental transfers and a final category consisting of donations, loans and other mechanisms. Specific mechanisms are more appropriate for funding specific types of public services; however, all government revenue generation in the modern global economy can be characterized by these categories.

### User Fees

The user fee is perhaps the most basic and straightforward revenue-generating mechanism because it is based on a public service unit price charged upon consumption of that service. This charge may be levied before or after consumption, a question of timing. Thus governments decide the timing and amount of the user fee for any given public service. The power of the user fee is that it can be adjusted to affect consumption, assuming price elasticities for specific public services are understood.

One simple example of a user fee is a toll charged to access a highway or bridge. A government or authorized governing body will decide the amount of the toll (based, in theory, on short- or long-run marginal costs,<sup>11</sup> social benefit, etc.) and will also determine when the toll is to be paid. Consequently, an individual wishing to drive on the highway or cross the bridge will be required to pay the toll. Specific measures will be put in place to prohibit toll evasion (physical barriers to prevent bypassing toll booths and laws to prosecute violators, for example) and the government will collect the toll revenue as drivers use the facilities. The revenue raised may be used to finance capital or maintenance costs associated with the facility, expenditures for future expansion or other investments in the transportation network. Other public services that are appropriately linked to the user fee financing approach include water services as well as access to public transportation and recreational facilities.

From a public goods perspective, it would appear that the user fee finance mechanisms unfairly charges for something that should be available to all: the ability to travel freely, in

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<sup>9</sup> Fiscal policy also includes the supply of money, which I do not address here, but which has obvious economic implications.

<sup>10</sup> And, of course, over the economic activity that takes place *between* economies.

<sup>11</sup> Bahl and Linn (1992) describe the complications and impractical nature of utilizing the “pure marginal cost rule” to price public services.



the case of road tolls, or access to clean water, in the case of water fees. A government that provides these public good, however, must ensure that the good is not wasted. Here the rationing potential of service provision through the user fee becomes important. If a government sees a need to curb water consumption, it can raise the unit price for each liter of water households take from the municipal water system. Likewise, pricing can be used to match demand with supply in the absence of additional capacity. Tolls for a congested piece of highway infrastructure may be increased to decrease demand on the facility, for example.<sup>12</sup> In either case, the user fee is utilized to ration the good such that it is not completely exhausted.

## **Taxes**

While services associated with consumption levels are more appropriately paired with the user fee, there are obvious public services that are not. These would include the provision of police and fire protection, education, pensions, and, in some cases, healthcare. The notion that a municipal fire brigade cannot respond to a house fire until the household pays a “fire protection user fee” is rejected under most political ideologies.<sup>13</sup> In such cases, taxes are better suited to raising revenue for service provision.

Taxes are fixed amounts levied upon transactions that take place in a specific economy. The amounts are based upon a percentage of the total transaction, known as the tax rate. A variety of taxes exist in governance systems, the most common being the income tax, property tax and consumption tax (sales, value added or excise tax<sup>14</sup>). Taxes are either direct or indirect. Direct taxes are those paid directly to the government by those being charged the tax, such as an income tax, whereas indirect taxes are those collected by an intermediary and then paid to the government, such as a sales tax that is charged to the consumer, collected by retailers and paid to the government.

## ***Tax Assignment***

The primary issue concerning taxation is tax assignment, essentially which levels of government can charge specific taxes, who can be charged (the tax base) and which transactions can be charged. Tax assignment is a very complicated and nuanced task; there are many interactive effects between the various taxes jurisdictions utilize. Government systems that are not mindful of these effects can inadvertently lock themselves into unsustainable tax assignment models with negative economic consequences.

Although tax assignment might be considered more of an art than a science, most public finance scholars have come to agreement on the appropriate tax assignment model for a decentralized government. Dahlby (2001) has coined this the “consensus view” and provides an illustrative overview of the model in his work. The consensus view recommends that local and regional governments levy taxes on less mobile sources, leaving central government to tax highly mobile sources. Mobility, in this sense, concerns a source’s ability to move from one tax jurisdiction to another in search of, presumably, a more favorable tax environment.

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<sup>12</sup> Road tolls can also be used to capture the negative externalities of transportation activity (pollution, congestion, accidents, etc.). This will be discussed in greater detail in the following chapter.

<sup>13</sup> Which is not to say that a homeowner may not share some of the costs for fighting the fire.

<sup>14</sup> An excise tax is defined as a tax on specific commodities such as alcohol or tobacco products (known as sumptuary or “sin” taxes) as well as automobiles or fuel.

Business, for example, is considered highly mobile. Operations, holdings and profits can be easily shifted across borders in order to avoid taxation. The consensus view argues that this mobility is much higher across sub-national boundaries, therefore business taxation should not occur at the sub-national level. Land, on the other hand, is highly immobile. Thus taxes on land (real property) are most appropriate at the local level.

Most taxes—consumption taxes (retail sales tax, value added tax, excise tax), individual and corporate income tax, payroll tax, wealth, inheritance and estate taxes, tariffs and natural resource revenues—are reserved for central and, in some cases, regional governments under the consensus view. Central government therefore has the most robust revenue-raising capability, which often leaves local jurisdictions with access to relatively less lucrative taxes—namely the property tax—and user fees. Intergovernmental transfers (which will be discussed in greater detail in the following section) are intended to address this gap, but some scholars criticize the level of complexity required to design transfers that maximize benefit and minimize distortion (Bird, 1999; Dahlby, 2001; Weingast, 2006).

Scholars raise other issues with the consensus view. Bird (1999, pp. 6-7), for example, highlights four problems with the approach: it (a) “assumes the economy would function perfectly in the absence of taxes” and that tax distortion should therefore be minimized; (b) assumes that government policy objectives are arranged hierarchically with central government objectives trumping those of sub-national governments, something the author claims to be impossible in a true federation; (c) discounts the political nature of government by assuming that governments are benevolent agents pursuing only the highest good for their constituents; and (d) is “purely normative...providing at best a very poor explanation of tax assignments found in the real world.” More grounded approaches to tax assignment would take into account the more “messy” yet realistic nature of modern governance. This is the view of the “second generation fiscal federalism” movement that will be discussed in Section 2.5.

### **Intergovernmental Transfers**

In addition to user fees and taxes, governments can also avail themselves of intergovernmental transfers as a means of revenue generation.<sup>15</sup> In its simplest form this involves transferring the control of a designated amount of money from one authority to another. In many governance systems, transfers are commonly made from central to sub-national governments, but it is also possible to employ transfers between sub-national governments or from a supranational government to a national government, as in the case of the European Union and its member states.

Intergovernmental transfers are generally used to resolve vertical or horizontal fiscal imbalances between levels of government within a specific economy. According to Ahmad and Craig (1997), a vertical imbalance “occurs when the own revenues and expenditures of various levels of government within a federation are unequal” and a horizontal imbalance “occurs when the own fiscal capacities of various sub-national governments at the same level differ” (p. 73). Resolving these imbalances can lead to greater macroeconomic stability, equity and efficiency for a decentralized government.

Transfers take the form of revenue-sharing arrangements or grants. Under revenue sharing, a portion of central government revenue from taxes (or even user fees) is shared

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<sup>15</sup> Technically, intergovernmental transfers themselves do not generate revenue. In an accounting sense, however, the recipient can count the transfer as revenue.

with sub-national governments. The share distributed to a sub-national government can be linked to the amount of revenue raised in that jurisdiction, known as *derivation*, or it can be based upon a redistributive formula that promotes horizontal balance, known as *equalization*, or both may be used in a combined approach (Ter-Minassian, 1997). The driving force behind horizontal balance should not be equalizing the actual outlay of funds to sub-national governments, but, rather, providing sufficient funds such that each government has the same capacity to provide a minimum public service standard, based on a “jurisdiction’s potential revenue-raising capacity and not on actual revenues” (Bird & Smart, 2002, p. 901). Thus more wealthy governments would receive a smaller sum of money than their less wealthy counterparts.

Grants, in contrast, are not directly linked to central government revenue. These can be general-purpose lump sums transferred to sub-national governments for unrestricted spending or they can be conditional grants designed to fund a very specific purpose (e.g. education, infrastructure) or based upon a matching criterion. Grants can also be disbursed on a recurring basis—during each budget cycle, for example—or on an as-needed or one-time basis.

Just as in tax assignment, the design of an intergovernmental transfer system must be carefully considered. Derivation-based revenue-sharing arrangements may unfairly punish jurisdictions with smaller tax bases while conditional grants limit sub-national fiscal autonomy.<sup>16</sup> Matching criteria may also introduce problems where wealthy jurisdictions are able to raise the required match with greater ease than their poorer counterparts, therefore more easily becoming eligible for the transfer. Regardless of their form, governments must clearly define the goals for their intergovernmental transfer systems and work to eliminate inefficiencies or adverse behavior within those systems.

### **Donations, Loans and Other Mechanisms**

Beyond the traditional triumvirate of user fees, taxes and intergovernmental transfers, governments have utilized a number of additional sources for revenue generation. These include donations, loans, public land leasing and public-private partnerships.

Non-governmental or quasi-governmental organizations regularly disburse *donations* to governments in support of a variety of dedicated activity such as disaster relief or community development.<sup>17</sup> The Oxfam and the Red Cross grant programs are two prime examples. Grants may even be used to create government. The United Nation’s Local Development Fund, for example, is designed to assist undeveloped local governments in the provision of public infrastructure and services and may even be utilized to establish institutional governance structures in the absence of a workable government (UNCDF, 2008).<sup>18</sup>

*Loans* and bonds mark yet another revenue source available to governments. This is often done within a specific legal framework that dictates not only national and sub-national governments’ ability to borrow, but also loan sources, maximum loan terms, and borrowing limits. Sub-national governments, for example, may be prohibited from borrowing from foreign sources or only allowed to borrow up to a fixed percentage of their annual budget

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<sup>16</sup> Which may be necessary if sub-national jurisdictions produce sub-optimal outputs of specific public services.

<sup>17</sup> I acknowledge that non-governmental agencies regularly bypass government as a recipient of donations, but in the event that government does receive the money it is certainly a source of revenue.

<sup>18</sup> Cambodia availed itself of the UN Local Development Fund in the early 1990s to reestablish a working governance system after years of civil war (Smoke, 2007).

outlay. While providing governments with a powerful tool to leverage additional monies for public service provision, debt can obviously become unmanageable and unsustainable at both the national and sub-national levels.<sup>19</sup>

*Public land leasing*, as opposed to selling, is another potential revenue source for governments, particularly those transitioning from a socialist regime where private land ownership was previously forbidden. Under this arrangement, the public sector can auction off the lease rights to land that it owns for specific periods of time. This can be a once-off charge to lessees or an annual rent that incorporates increases in land value. Public land leasing is a challenging mechanism to apply. A government that releases too much land into the leasing market essentially throws away money, yet a decision to rationalize land supply to maximize rent revenue can lead to inflated housing costs as lessees pass high leasing costs on to consumers. Hong Kong, for example, has had a long history of public land leasing, but it has not been without its challenges (Hong, 2003).

Finally, *public-private partnerships* may be utilized to generate additional revenue for government activity. Just as governments can lease land, they can also lease infrastructure to the private sector through a long-term concession agreement. This is especially prevalent in the transportation sector, but is also seen in water delivery services.<sup>20</sup> Government therefore concedes the ownership, operation and maintenance of a specific piece of infrastructure to the private sector which is, in turn, allowed to charge users to access the facility. The two parties negotiate the terms of the concession including the duration of the lease, the pricing of user fees, the conditions for revoking the concession as well as the cost of the concession. This cost reflects what the private sector must pay to the public sector for the right to control the infrastructure and represents the revenue government receives. The number of such partnerships is growing. Recent long-term concession agreements in the United States yielded large monetary awards for Chicago and Indiana totaling 1.83 billion and 3.8 billion dollars, respectively (Buxbaum & Ortiz, 2007).

In addition to infrastructure concessions, government can solely concession the operation of services—public transportation, waste management or healthcare, for example—to the private sector. The use of operating concessions as a revenue-generating mechanism, as opposed to a cost-saving mechanism, is rare. Appropriate business and administrative environments must exist. Sufficient demand is necessary for the creation of profit, for example. That profit will not be shared with government, however, unless the concession outlines how profit is to be administered, generally only after the private sector recovers its costs and earns a reasonable profit itself.

More often, one or both of these elements are not in place. In the absence of demand, government will forego any potential profit before the private sector concessionaire does. In the presence of a profit-sharing administrative environment, a government often cannot resist the temptation to alter the concession to either include profit sharing or increase its profit share when the private sector is making significant revenue.

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The challenge in any public finance system is to design revenue-generating mechanisms that are effective yet create minimal market distortions. Effective mechanisms are those that are easily understood and easily administered. This has as much to do with the fiscal

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<sup>19</sup> See Brazil and Columbia in Ter-Minassian (1997, chaps. 18 & 19).

<sup>20</sup> The 1992 Buenos Aires water concession stands out as an example. See Alcázar, Abdala, & Shirley (2000).

equivalence condition—where taxpayers perceive a direct link between the taxes they pay and the benefits they receive—as it does government capacity. Complicated taxes or user fees can just as easily confound both the taxpayer and the public sector administrator, rendering the effectiveness of such mechanisms questionable.

Even straightforward mechanisms may be difficult to implement if the public sector lacks either the appropriate information to use the mechanism, sufficient staff trained to administer the mechanism or administrative safeguards to protect revenues. A municipality will find it difficult to tax land, for example, if there is no public record of land ownership (or, more fundamentally, no legal system which identifies land as real property), no staff to collect taxes and process the revenue, or no policy to protect tax revenue from in-house budgetary raiding. Often, the promise of great revenues lures a government system to underestimate its capacity to administer specific mechanisms.

## 2.5 Toward a Grounded Theory of Public Finance

Answering the three basic questions related to public policy, fiscal federalism and fiscal policy reveals several characteristics of public finance. *First*, the elements of a public finance system are clearly interconnected. A government cannot consider specific revenue-generating mechanisms until it determines which levels of government will be responsible for which services. Nor can it assign responsibility without understanding the services that are to be provided. Because each element has the ability to vastly affect the other, any notion that the development of a public finance system is a linear process is quickly dispelled.

*Second*, public finance is inherently political. The production of a specific set of public goods and services represents the prevailing political ideology. Ideologies change, however. They are challenged, altered or replaced as individuals and groups seek greater cultural and societal control and government, itself, works to legitimize its authority and remain in power. This fact directly relates with the *third* characteristic of public finance: it is highly contextual. What spells success in a specific national, regional or local context may not be replicable in other jurisdictions. Forms of government, government institutions and political ideologies vary widely across and within national boundaries.

Significant criticism has been levied against the traditional public finance theory, from which the previous sections have been heavily drawn. While the theory is especially valuable for pedagogical purposes, it presents a highly normative model that is not grounded in the real world. Its espousal of devolution, fiscal equivalence, the “consensus view” of tax assignment and the need for administrative tax capacity as the purview of sovereign nation states does not adequately acknowledge the challenges facing modern public finance.

The field of “second generation fiscal federalism” has emerged as a response to the traditional or “first generation” model, criticizing it as overly simplistic and unable to account for failures in governance systems that have pursued its approach “by the book.” A second group of scholars and public administrators, under the banner of the “new public finance model,” claim that the traditional model erroneously ascribes to the Westphalian state<sup>21</sup> ideal, a construct that no longer exists in the modern global economy. Public finance,

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<sup>21</sup> The concept of a Westphalian state describes a sovereign nation-state that is (a) organized around territory and (b) considers international influence on its affairs an intrusion. The term comes from the Peace of Westphalia, which brought an end to the Thirty Years War in Europe in 1648. Here major European powers agreed to the principle of “territorial integrity”: No nation-state would promote alterations of territory (through annexation or secession movements) in other nation-states.

they argue, while still the responsibility of sovereign governments, is an increasingly supranational endeavor, which has created a global public finance that also influences national-level fiscal federalism.

### **Second Generation Fiscal Federalism**

Second generation fiscal federalism addresses discrepancies in governance and public policy formation that are not explicitly encompassed by the traditional fiscal federalist model, which is known as “first generation” fiscal federalism. While academics in the second generation vein do not completely refute the tenets of the first generation model, they highlight the fact that it makes many assumptions that do not hold in practice. The pursuit of fiscal decentralization does not often result in the well-balanced, market-preserving (or -enhancing) public finance system espoused under the first generation model.

Oates, the father of fiscal federalism, acknowledges this new generation of federalism and in doing so highlights several assumptions made by the traditional model (Oates, 2005). Three of these assumptions stand out as particularly relevant:

- First generation fiscal federalism assumed a benevolent national government that sought to maximize the welfare of the governed.
- It assumed that central government, while unable to ascertain the preference for local public goods, can adequately judge preference for national public goods.
- The traditional model took “an existing, stable, and self-perpetuating underlying federal structure” as a given (p. 366).

Second generation fiscal federalism provides a more rich, interdisciplinary approach to intergovernmental financial and administrative relations, drawing from three main fields of study, which Oates identifies as public choice, political economy and “problems of information”<sup>22</sup> (p. 356). Public choice theory applies the motivations of self-interested, utility-maximizing actors to the study of behavior in economic systems. This is an important direction for the study of public finance because it acknowledges the complexities guiding human interaction and provides a more robust framework for analyzing government interests as evidenced by government action. The benevolent government is no longer a given.

The field of political economy encompasses public choice theory. It moves beyond the deterministic regard of economic structures and systems as brute fact to consider them as functions of sociological and political elements: meanings, values and norms. It “regards economic ideas and behaviors not as a framework for analysis, but as beliefs and actions that must themselves be explained” (Maier, 1987, p. 6). This, too, is an important direction for public finance theory because it acknowledges public finance systems as social constructs.

Under this new direction, second generation fiscal federalism builds upon the first generation model and provides a more practical foundation for the process of fiscal decentralization. Weingast (2006), a second generation fiscal federalist, offers an illustrative synthesis of the movement, revealing unspoken complexities within the first generation model through a focus on the role of intergovernmental transfer systems and democracy in

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<sup>22</sup> Here Oates associates “problems of information” with a lack of perfect information, which, he intimates, is endogenous to institutional interaction. I would move the concept to the field of sociology and the realm of power and rationalization, expanding it to include organizational power seeking through the purposeful manipulation, obfuscation or withholding of information.

fiscal federalism. Both, he argues, are elements difficult to design, implement and maintain within a working (as opposed to theoretical) governance system. The following section draws heavily from his work.

### *Intergovernmental Transfers*

Despite the need for intergovernmental transfers to correct vertical and horizontal imbalances within a governance system, their implementation often leads to market-destroying practices. Weingast (2006) highlights that newly decentralized governments tend to rely too heavily upon the intergovernmental transfer system and not sub-national tax independence as a means of fiscal decentralization. This over-reliance may provide some sub-national fiscal autonomy, but it comes with a significant drawback: it does not promote sub-national economic growth. There is no incentive for sub-national governments to promote growth in their jurisdictions when the majority of the benefit will be captured by central government through a biased tax system.

In addition to failing to promote growth, Weingast (2006) explains that an over-reliance on the intergovernmental transfer system can create a cycle of sub-national dependence on central level support. This imbalance of power can often be tempting for central governments to exploit, which can lead to undemocratic actions (see the section on “tragic brilliance” below). On the other hand, the same system has the potential to engender a culture of demand in which sub-national governments champion their “rights to *revenue* [emphasis added], not markets and incentives” (p. 16). A sub-national government or coalition of governments might effectively employ the revenue rights argument to pressure central government for funds in excess of “optimal” levels, especially in the presence of a soft budget constraint.<sup>23</sup>

Finally, large intergovernmental transfers remove the fiscal equivalence condition, incentivizing an overprovision of services or overspending.<sup>24</sup> This also sets the stage for corruption. Weingast (2006) points out that due to the disinclination to finance sub-national economic growth, local governments will be more inclined to undertake rent-seeking behavior and corruption to gain both revenue and political support. Thus, governments will create inflated charges or fees to raise funds while targeting benefits to a limited and influential constituency for political support. Such an arrangement also gives local government officials incentives to “blame policy failures on the central government whether it is responsible or not” (p. 23). Thus sub-national governments can pursue whatever policy course they choose regardless of the repercussions. When constituents become dissatisfied with that course, sub-national governments can simply raise their arms in resignation and claim that central government “controls everything.”

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<sup>23</sup> The term “soft budget constraint” characterizes intergovernmental fiscal relations in which sub-national governments, in times of fiscal difficulty, expect and receive a “bail out” from central government. A soft budget constraint, as opposed to a hard budget constraint, encourages sub-national governments to spend beyond their means and “blunts the incentives for...local officials to make sensible provisions for hard times” (Oates, 2005, p. 365).

<sup>24</sup> Historically, sub-national governments spend more when intergovernmental transfers are their main source of revenue. They are much more careful, however, with own-source revenue. Public economists have coined this phenomenon the “flypaper effect”. For more on the flypaper effect see Hines, Jr. and Thaler (1995).

### ***Democracy***

In addition to the complexities of intergovernmental transfer design, Weingast also highlights the difficulty in establishing democratic governance systems, which, he explains, is “more than just creating elections” (p. 40). He highlights three dangers that nascent democracies face when establishing a decentralized economy in the fiscal federalist tradition: (a) the tendency to violate the “limit condition,” (b) “tragic brilliance,” and (c) denying access to organizations. All three involve manipulative action coordinated by central government to exact specific behavior from sub-national governments and their constituents.

In the democracy envisioned under first generation fiscal federalism, government grants its citizens a series of rights and public services by virtue of their citizenship. These rights are assumed to be inalienable, meaning government would limit its power to take them away, which Weingast (2006) coins the “limit condition.” The temptation, and subsequent reality, however, is for government to violate the limit condition and make those rights and public services contingent upon a citizen’s political relationship with those in power. This can have a destabilizing effect on democracy. When such basic rights are at stake, citizens are more likely to pursue “extra-constitutional” action such as coups or riots.

The scope of this concept can be widened to include sub-national governments in the context of intergovernmental transfer design. Central government may use discretionary transfers to punish sub-national governments that support opposition party candidates or, conceivably, conduct any action contrary to central government. Weingast (2006) calls this “tragic brilliance”: tragic because it forces citizens to play an active role in maintaining an authoritarian regime that they would rather replace; but also brilliant, in that authoritarians use their policy discretion to create political dependence and subservience while providing the outward veneer of elections, choice, and democracy” (pp. 37-38). Those governing emerging democracies may even purposefully create vertical economic imbalances in order to establish the environment for the tragic brilliance strategy.

Finally, Weingast (2006) addresses the tendency of emerging democracies to limit citizen access to organizing in the economic, social, political and legal realms. Limitations may come in the form of outright denial, such as outlawing specific types of organizations, or rent-seeking activity, such as controlling the formation of corporations through inflated and arbitrary incorporation fees. From an economic perspective, such action destroys the competition necessary for efficient economic development. From a democratic perspective, it not only represents a violation of fundamental citizen rights, but also severely hinders the ability to keep government in check, which is often the purview of alternative political parties or government watchdog groups.

### ***Federal Differentiation***

One of the most important elements of Weingast’s work is a set of five conditions used to differentiate fiscally decentralized governance systems. Because decentralization can take on a variety of forms, these conditions are helpful in identifying how or why certain nation-specific policies or practices have led to a less-than-ideal reality. Although Weingast (2006) calls these “conditions for differentiating federal systems” it is important to reiterate that the principles of fiscal federalism are not strictly limited to federal governments. The five conditions are highlighted in Table 3 below.



**Table 3. Conditions for Differentiating Federal Systems**

<b>Condition</b>	<b>Question</b>
Hierarchy	Is there a hierarchy of governments with a <i>delineated scope of authority</i> ?
Sub-national Autonomy	Do the sub-national governments have primary <i>authority over public goods and service provision for the local economy</i> ?
Common Market	Does the national government provide for and police a <i>common market</i> that allows factor and product mobility?
Hard Budget Constraints	Do all governments, especially sub-national ones, face <i>hard budget constraints</i> ?
Institutionalized Authority	Is the allocation of political authority <i>institutionalized</i> ?

Source: Weingast (2006, p. 6, emphasis in original).

In the end, second generation fiscal federalism offers a much more grounded foundation for fiscal decentralization theory, specifically, and public finance theory, in general. By acknowledging the importance of political economy and public choice, scholars move the field into a new realm, which provides greater insight into and explanatory power over intergovernmental fiscal relations. What emerges is a postmodern model of fiscal federalism that accepts economies and governments not as static and independent from society, but as dynamic social constructs.

### **The New Public Finance**

Second generation fiscal federalism is not the only force advancing public finance theory. A group of scholars and public administrators are reorienting public finance theory to accommodate the global economy in what have coined the “new public finance.” They contend that the notion of the Westphalian state, which has for so long guided public finance theory and education, is dead. Globalization has long since replaced the isolationist nation-state with the open, integrated state. This openness has (a) forced nations to recognize the need to finance public policy challenges beyond their borders and (b) brought new international pressure to bear on national public policy and public goods provision.

### **Global Public Finance**

In articulating their view of a global public finance, Kaul and Conceição (2006) segment the discipline into three distinct categories of evolution: traditional public finance, public finance 1 and public finance 2. Traditional public finance embodies most of what has already been described in this chapter and is the purview of the Westphalian state. Public finance 1 describes the public sector’s realization that the private sector can be mobilized for the provision of public services. Such public-private partnerships aim to address the market failures inherent in the private provision of public services with the intent of capturing the increased economic efficiency of the private sector. The authors describe these partnerships as “channeling resources to public policy goals, with the government using fiscal, regulatory, and monitoring tools to encourage and complement private activities and private spending on these goals” (p. 7).

In addition to using the private sector as a tool for more efficient public service provision, many nations are now looking beyond their borders to address policy challenges

in the global arena. The authors deem this concept public finance 2, which has emerged as a result of the “deliberate and unintended processes” that bring about globalization (p. 11). On the deliberate side of globalization processes exist policies that work to break down trade barriers and create more open economic systems. This, however, leads to unintended processes that carry both positive and negative effects. More open borders and increased trade between countries, for example, have led to the unintended transport of communicable diseases and predatory organisms<sup>25</sup> and even human trafficking. On the other hand, positive unintended effects include the increased and often immediate exposure of “human rights violations, poverty, and disaster to the entire world” via global communication systems (p. 17).

The economic and political stability of individual nations is not only a function of specific national laws and policies. It is also a function of stability in *other* nations. The interconnected global economic system ensures that the impacts of poverty, war, disease, human rights violations or civil unrest reverberate far beyond the borders of any one nation. Thus, many nations are working individually and collectively to direct both public and private finance to address these global issues, viewing democracy and stability as global public goods. While international aid is nothing new, the authors argue that it marks a new era of public finance theory. Beyond the humanitarian reasons for eradicating poverty or disease, nations are coming to realize that global instability may manifest itself internally as national-level economic, social and political costs. It may also manifest itself externally as opportunity costs. A government intending to invest in another nation may be forced to its second option if instability threatens its investments.<sup>26</sup>

### ***Responsive Sovereignty***

The other side of public finance 2 addresses the impact that the global economy has on goods provision *within* the borders of specific, mainly developing, countries. Kaul (2006) expands upon his characterization of national public goods production to acknowledge the significance of international pressure (see External Preferences, Part 7 of Figure 1) on national-level goods provision. National governments are faced with satisfying not only the domestic demands of their constituents, but also the international demands for openness, competitiveness, development and security. It has become increasingly impossible for the state to exert “exclusive national policymaking sovereignty” in the Westphalian tradition. Today’s globalizing state must exercise what Kaul calls “responsive sovereignty—[the] intermediation between domestic and external policy concerns” (p. 95).

External pressure may come from one or many governments, supranational entities or non-governmental organizations. The author identifies four forces which drive policy harmonization among nation-state actors: (a) the waning political support for non-interference (of national government in international affairs), (b) the increasing interdependence of states, (c) the growing political strength of transnational actors and (d) the intensifying competitiveness between states. The effects of these four forces on the role of national or central governance systems, synthesized below in Table 4, are significant.

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<sup>25</sup> The Asian longhorned beetle, a species that inhabits, feeds on and subsequently kills many species of hardwood trees, is a prime example. An infestation of the beetle in the U.S. has been attributed to untreated wooden crates carrying products imported from China (Hank, 2000).

<sup>26</sup> Kaul and Conceição (2006) are careful to point out that support for global public goods provision must encompass more than simple monetary transfers to recipient nations.

However, Ruggie, as quoted in Kaul (2006), assures that “the effect...is not to replace states, but to embed systems of governance in broader global frameworks” (p. 75).

**Table 4. Changing Roles for a Globalizing National Government**

FROM...	...TO
Aggregating primarily national preferences	Blending national and external policy demands
Correcting market failure	Also standing corrected by global business and civil society
Exerting coercive powers	Being compelled to compete

Source: Adapted from Kaul (2006, p. 94).

The new public finance brings the obvious—the interconnected nature of modern national economies—to the forefront of public finance theory, highlighting, perhaps, an emerging role for supranational entities, but certainly a role for national coalitions and non-state actors (namely non-governmental organizations), in providing global public goods. Just as second generation fiscal federalism, the approach grounds the theory in a more accurate contextualization, acknowledging the limits the global economy exacts on national sovereignty, a fact many governments are often loath to admit.

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This chapter has provided a brief overview of public finance. Political ideology—cultural values and beliefs toward governance—defines the set of public goods and services that government provides. Government uses specific mechanisms, such as user fees, taxes, and intergovernmental transfers, to raise the revenue for the provision of these goods and services. A government’s authority to deliver public services and raise the necessary revenue to fund their provision is dependent upon the vertical structure of the governance system, the degree of decentralization the system allows, and the fiscal equivalence condition, which matches benefits and expenditures.

Several normative elements of public finance emerge from this overview. Efficient and effective systems establish fiscal equivalence, extend fiscal autonomy where necessary, promote transparency, maintain hard budget constraints, provide adequate tax administration, and encourage appropriate tax assignment. An additional element implicit throughout the overview is the concept of stability. A public finance system benefits from a stable policy and finance environment that keeps procedures clear and consistent, maintains institutional structures, and preserves power structures. There is no doubt that government will transform as political, social, and economic conditions change. Abrupt and arbitrary change,<sup>27</sup> however, adversely impacts the efficient and effective delivery of public goods and services.

Despite the normative elements described above, no public finance system is perfect. As the discussion on second generation fiscal federalism reveals, the concept of the benevolent government is overly simplistic. Governments, just as individuals, should always

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<sup>27</sup> In some political systems, newly elected administrations, regardless of any real need, are expected to create, dissolve, and rearrange institutions; change laws and regulations; and purge not only key public administrators, but also entire staffs.

be viewed as the public choice theory perspective prescribes: as acting in its own self interest.

An important element of the larger public finance system, the provision of transportation infrastructure and services impacts economic conditions and social well-being. Continuing in the vein of public finance, the thesis will now turn to transportation policy and finance. The following chapter will delve into the concepts that define transportation policy and finance, offering an understanding of why governments become involved with regulating and enabling transportation activity.

### 3 Transportation Policy and Finance

Transportation activity, defined as both the *construction* of transportation infrastructure as well as the *use* of various forms of transportation, influences and is influenced by society, politics, the economy, and the environment. While the private sector can play a significant and important role in providing transportation infrastructure and services, the public sector has traditionally become involved in the construction, operation, regulation, coordination, and finance of transportation activity. A government's ability to create a transportation policy and finance system depends greatly upon the characteristics present in the general public finance system, which were discussed in the previous chapter. This chapter will discuss public sector transportation policy and finance as an element within the larger public finance system. It will answer *why* government becomes involved in transportation, *how* it assigns responsibility for transportation expenditures, *how* it becomes involved, and, finally present a framework for analyzing the government's role in system finance.

#### 3.1 Why Does Government Become Involved In Transportation?

The previous chapter couched the provision of public goods in terms of dominant political ideologies. Government makes decisions regarding the set of public goods it provides, but only within the constraint of society and its values and beliefs. This general concept can, of course, be applied to specific goods such as transportation.

Human existence requires confronting the spatial distribution of opportunities, whether they are as basic as water, food, and shelter, or as complex as employment, education, or entertainment. Humans may choose to travel to those opportunities, wherever they may be, or they may choose to bring the opportunities to them. Either way, transportation activity emerges as a fundamental component of human existence. It remains so in contemporary life, not merely in terms of survival, but also in terms of economic and social opportunity as well as physical and mental well-being.

Examples of transportation activity demonstrate that, from a goods perspective, transportation can be both rivaled and excludable. A driver entering a congested road affects other drivers' ability to utilize the road (rivalry) and that road can be tolled (excludability). These concepts can be translated to additional real-world transportation contexts such as public transportation systems as well as theoretical extremes such as pedestrian or aviation systems (sidewalks and airspace that are rivaled and could theoretically be made excludable). These qualities create the environment for private sector provision of transportation services; however, the sector's ability to do so is not without limitation. Political ideology may require public sector involvement in transportation services in order to ensure society's ability to "confront the spatial distribution of opportunities." If society perceives that this right is not being provided or is somehow abrogated by the private sector, will the public sector be called upon to provide or protect it? What happens when the public sector is abrogating this right? Political ideology may require that government become involved in the sector simply because cultural values and beliefs warrant it. The public sector, therefore, has traditionally been regarded as a force to regulate and encourage transportation activity with respect to both the private sector and itself. Generally speaking, the public sector becomes involved because (a) certain characteristics inherent to transportation activity warrant involvement and (b) transportation is used to fulfill specific

government goals. Involvement may be part of a coordinated, defined policy on transportation, but it is more likely a piece meal set of government actions from which a de facto policy emerges.

### **Transportation's Inherent Characteristics**

Over time, economic systems and technological innovation have profoundly impacted transportation activity. A set of inherent characteristics associated with transportation has emerged as a result of this impact. Specifically, transportation activity exhibits externalities, inequity, and monopolistic behavior, which combine to create suboptimal economic and social conditions. The public sector may regulate transportation activity in order to correct for these characteristics and improve economic and social conditions.

### ***Transportation Externalities***

The market does not adequately internalize the true costs and benefits of transportation improvements,<sup>28</sup> which are complex economic phenomena. Markets will create suboptimal economic and social conditions if they do not account for these additional costs and benefits, known as spillover effects or externalities. Governments may create laws, regulations and finance mechanisms that work to recapture some or all of these externalities in order to correct some of the distortions in the market.

The OECD defines an externality as a “situation when the effect of production or consumption of goods and services imposes costs or benefits on others which are not reflected in the prices charged for the goods and services being provided” (Khemani & Shapiro, 1993, p. 44). Positive externalities of transportation improvements include increased access, which improves land values and creates economies of agglomeration, scale, and scope as well as positive network effects. Congestion, pollution, noise, and safety impacts are examples of negative externalities that can manifest themselves as increased health and social welfare costs, and even decreases in land value (Nash & Matthews, 2005).

While this section will not delve into the extensive research that links transportation improvements with externalities, the research shows that the link is significant.<sup>29</sup> For example, land within a quarter mile of public transportation improvements such as a new subway or commuter rail stations will see its value increase by as much as 25 percent (Batt, 2001). This occurs regardless of whether the landowner uses the transportation improvement. Alternatively, residents who find themselves near new road infrastructure may suffer the negative impacts of increased pollution and noise. In either case the aforementioned costs or benefits were borne at least partially by a third-party and were not captured by the improvements themselves.

While it is extremely difficult, if not impossible, to “internalize” all externalities, governments may employ a variety of laws, regulations, and finance mechanisms to begin to internalize some of them. This all depends upon the degree to which government recognizes the existence of externalities and acknowledges the need to correct them. Specific laws, regulations and finance mechanisms will be discussed in detail in the following section that addresses how government becomes involved in transportation.

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<sup>28</sup> Transportation improvements include both infrastructure (bridges, stations, lanes, sidewalks, etc.) and service improvements (new bus routes, more frequent service, etc.).

<sup>29</sup> See Rayle (2008) for an extensive literature review of research that addresses the interaction between transportation and land use.

### *Transportation Inequities*

As established in the previous chapter, selling goods and services in return for revenue that recovers costs and (ideally) turns a profit is a basic function of a transaction-based market. With the exception of walking, most transportation activity in contemporary economies is transaction based; access to transportation is gained through purchases. Access to collective transportation—buses, subways, passenger trains, and commercial airlines—is limited to those individuals who can afford to pay the required fare.<sup>30</sup> Access to and use of personal transportation—motor vehicles and bicycles, for example—necessitates the purchase of the vehicle itself and, possibly, the payment of fees for access to infrastructure.

The need for profit applies to services provided by the private sector. Even if the public sector offers transportation services, however, there is likely (but not always) the desire to recover some costs through user fees. And, in theory in any case, the return (including valuation of public benefits and costs) on government activities in the sector should at minimum be equal to the alternative best use of government resources. Regardless of the specific mix of private and public sector transportation providers, the transaction-based nature of transportation activity has varying impacts on different sectors of society. The existence of profits implies prices as they relate to supply and demand. It also implies potential users who cannot afford to pay for goods and services, a group the private sector and even the public sector, in some situations, does not accommodate.

The money required to access transportation systems may represent a very large part of an individual's overall budget or it may be very small. The fact that some people are burdened more than others, however, leads to a fundamental issue of social equity in transportation. Political and cultural ideologies define equity standards for society, which differ across and within specific societies. Yet, opportunities are spatially distributed and, at the very least, some (if not all) individuals will require access to those opportunities for economic, social, and personal well-being.<sup>31</sup> Leaving aside a subjective critique of *whom* societies allow to use transportation, equity issues with respect to access will still exist among those who *are* allowed to access the transportation system.

In addition to the equality issue related to monetary budgets, there are also those related to time and service quality. Individuals who are unable to afford access to transportation systems are left with walking as an alternative. This is often impractical, however, in terms of time and, in many cases, service quality. Therefore, the individual is unable to reach many opportunities within reasonable walking distance nor are the pedestrian amenities available to ensure a pleasant or, at the very least, safe journey. Still, individuals who are only able to access the most inexpensive transportation services—usually collective transportation—suffer an inequality with respect to travel time and service quality. Their fare does not buy them access to convenient, fast, comfortable, and safe collective transportation services as compared to other sectors of society, for example, which can afford to purchase a personal automobile.

Governments may therefore choose to protect those who cannot afford to access the transportation system. They may also work to improve transport conditions in an effort to provide citizens with more equal access to opportunities in terms of time and service quality. The degree to which transportation policy and finance systems take these equity issues into

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<sup>30</sup> Fare evasion is obviously an option, but the providers or regulators themselves usually discourage this.

<sup>31</sup> The use of the word “some” is intended to account for societies that do not believe certain segments of the population require or deserve such access. Historically, this has included women, children, the elderly, the poor, etc.

account depends upon the degree to which transportation services are oriented as a public good, a function of political ideology. Rather than providing mobility—efficient transportation service from the provider perspective—the system strives to provide accessibility—equal access to opportunities from the user perspective. A brief discussion on mobility and accessibility follows below.

### *Mobility and Accessibility*

*Mobility* is described as “the ability to move, a function of physical and economic resources” (Vasconcellos, 2001, p. 53). This is contrasted with *accessibility*, which addresses opportunities in space and time as they relate to land use and the transportation system. Thus, it is not simply a question of whether people can move through the transportation system efficiently. It is a question of the opportunities—jobs, healthcare facilities, education, retail establishments—people can access based upon their distance to the opportunities (space) and the time they have to reach those opportunities (time) as they relate to characteristics of the transportation system, which include cost, travel time, and service quality.

Accessibility is a question of social equity. An auto-oriented transportation system, for example, favors accessibility for that segment of society that has access to motor vehicles. Those who do not have access to a vehicle have markedly fewer opportunities within their reach.<sup>32</sup> Similarly, a public transportation system can be extremely efficient in moving people from place to place. That means very little, however, if the system does not provide adequate access to opportunities. Does the bus system go where people need or want it to go? An area can be rich in mobility, but poor in accessibility.

### *Monopolistic Behavior*

Investments in transportation activity are extremely capital intensive, which acts as a significant barrier to entry for specific transportation markets. This means that few players eventually enter the market, creating natural oligopolies and the potential for monopolistic behavior among the players where prices are inflated and production restricted.

To be in the railroad business in the U.S., for example, a company needs to lay railroad track to transport and store trains; install signaling systems to coordinate railroad activity; build stations, maintenance, fueling, and dispatch facilities; and purchase equipment such as locomotives to pull trains and rail cars to carry goods and passengers. All of this requires a significant amount of money up front, before the first revenue-generating train pulls out of the station. The same is true for almost all sectors of transportation. While they may not need to build the infrastructure on which they operate as railroads do, airline companies still must purchase aircraft and public transit companies must purchase buses.

This barrier to market entry creates the condition for monopolistic control over specific transportation markets. Only a handful of interests will possess the capital (or financing power) necessary to secure the infrastructure required for profitable operation. Thus, competition will be limited to a few players, creating what the field of economics refers to as an oligopoly. In such a situation, the players may engage in collusion. Unable to resist the potential for excess profit, they may work together with their competitors to set prices and production levels to control the market as a monopoly.

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<sup>32</sup> Of course these individuals could use non-motorized or public transportation, but auto-oriented land use-transportation systems often organize opportunities on a spatial scale that is either beyond the range of some, if not all, transportation modes.



### Accomplishing Specific Goals

Government may become involved in the transportation sector to not only regulate transportation activity, but also to leverage the sector to accomplish specific government goals. These goals are shaped, however, by a wide range of diverse and sometimes conflicting elements, which include economic conditions, prevailing social attitudes toward transportation, and political pressures among others. While the concept of the ideal benevolent government serves well for pedagogical purposes, public choice theory suggests that governments are self-interested actors. The power of transportation activity as a tool for political control is often difficult to resist.

The transportation sector can be used to increase economic development, mobility, accessibility, competition, interconnectivity, and political control. In turn, government may seek to limit the negative externalities of transportation activity in order to accomplish goals for environmental protection, public safety, and energy. These goals combine to shape a policy on transportation which explicitly or implicitly outlines the public sector's involvement in regulating, enabling, and, in some cases, providing transportation activity. While transportation policy can be used to satisfy specific social, political and economic goals, its creation is also a *function* of social, political and economic elements that influence government and its attitude toward transportation.

In his seminal work on the relationship between sociology and transportation, Vasconcellos (2001) defines a macro-level view of transportation policy formation that weighs the true influences and impacts of transportation on both users and non-users. The author identifies several elements that influence government's involvement in the sector, arguing that a deeper understanding of these elements will lead to a more deliberative process in creating transportation policy. As Table 5 outlines, transportation policy is more than the simple manifestation of public sector desires. It is the product of multiple conditions and interactions over which government may have control (e.g. political motivations), or may not (e.g. migration trends, social attitudes).

**Table 5. Elements of Influence on Transportation Policy**

<b>Element</b>	<b>Description</b>
Structural	Migration trends and settlement patterns as influenced by the spatial distribution of economic activity, wealth, poverty, and housing
Political	The motivations of a "limited elite," the middle class, the transportation industry (construction and manufacturing), or foreign pressure
Ideological	Values and beliefs toward specific transportation modes and planning practices (e.g. the automobile as a natural manifestation of public desire for mobility)
Economic	Prioritization of "democratic" transportation improvements as related to economic conditions (real or perceived)
Institutional	Ability to coordinate activity
Technical	Degree to which adequate and appropriate technical measures are applied to transportation analysis
Technological	Existence of technological development with regards to specific transportation modes
Operational	Ability to monitor the performance of specific transportation modes

Source: Adapted from Vasconcellos (2001, pp. 210-216).

An auto-oriented transportation policy, for example, could be the result (or cause) of extreme urbanization patterns that negatively impact public transportation systems in metropolitan areas, creating negative attitudes toward public transportation; the technical inability to monitor public transportation performance, leading to an undervaluation of the mode's importance to the overall transportation system; political influences that encourage government to pursue a policy that favors specific actors such as the auto industry; and ideological conditions which value technical merit over social impacts.

Vasconcellos' elements add a new level to the Kaul & Conceição (2006) production path of public goods: that of existing conditions. Public goods production is therefore a product of interaction between governments, civil society, interest groups, households and firms that is *also* affected by existing structural, political, ideological, economic, institutional, technical, technological, and operational conditions at the supranational, national, and sub-national scales.

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Political ideology; the existence of externalities, inequities, and monopolistic behavior associated with transportation improvements; and the desire to use transportation to accomplish specific government goals set the stage for public sector involvement in transportation. Governments must define that involvement, however, and, in doing so, position themselves along the spectrum between market competition and policy intervention. This is influenced by the public sector's: (a) recognition of the externalities associated with transportation and (b) use of transportation policy as a vehicle for accomplishing specific goals (Nakagawa & Matsunaka, 2006).

In one extreme, market competition may be favored through little to no government oversight of the private sector. In another, policy intervention may be pursued to such a degree that the public sector abolishes private sector involvement in transportation and provides *all* transportation services itself, namely through public sector systems. A more balanced approach would enable the private sector to provide transportation services, but in a manner aligned with the goals of the public sector. Aligning those goals may involve regulation of the private sector as well as the implementation of mechanisms that capture the externalities of transportation improvements, fund transportation-related expenditures, or both.

It is clear why government may become involved in the transportation sector. Key issues discussed in this section demonstrate the private sector's limitation in providing transportation improvements as well as government's desire to use transportation for accomplishing specific goals. Before discussing *how* government becomes involved in the transportation sector, it is important to revisit the concept of fiscal equivalence in order to understand who should be responsible for transportation investments when government does become involved.

### **3.2 Who Is Responsible for Financing Transportation?**

When the private sector is involved in funding transportation infrastructure and providing transportation services, it is clear that the companies themselves are responsible for their own expenditures. The review of public finance in the previous chapter explained that government expenditures, however, might be the responsibility of national or sub-

national jurisdictions in a multi-level governance system. Expenditure assignment as well as the ability to generate revenue to fund those expenditures depends upon the incidence of benefits.

As stated in the previous chapter, fiscal equivalence seeks to match the benefits boundary of public goods with the boundary of the finance mechanisms used to generate revenue for funding the provision of those public goods. Thus, local governments should fund and provide public goods that bring localized benefits. National governments should fund and provide those goods that bring national-level benefits.

Transportation improvements also have benefits boundaries that range in size and scale. In a simple way, urban public transit systems bring localized direct benefits to the citizens in the cities the systems serve. An interstate highway system, however, may extend benefits to multiple regions or an entire country. In many cases it is not easy to determine the precise extent of benefits boundaries. For example, in the urban public transit system case, beneficiaries may be those individuals who live far outside the service area of the public transit system and drive to work every day. The decreased motor vehicle congestion, a result of individuals who would otherwise drive using the public transit system, is a direct benefit that drivers receive.

Despite the difficulty in determining exact benefits boundaries, it is possible to generalize that certain transportation benefits accrue locally, while others accrue nationally. Thus, under fiscal equivalence, local governments should be responsible for those transportation expenditures with local benefits. This would include public transportation systems, pedestrian amenities, local road infrastructure, and, to some degree, even national road infrastructure that is part of a well-developed “local” system (Boarnet & Haughwout, 2000). National governments are therefore responsible for transportation expenditures that bring benefits to the country as a whole. The economic benefit of ports, airports, interconnected road and rail networks, for example, often accrues nationally.

### **3.3 How Does Government Become Involved?**

Government involvement may be part of a coordinated, defined policy on transportation, but it is more likely a piece meal set of government actions from which a de facto policy emerges. Transportation policy is not alone, however, in impacting transportation. Nor can it be solely responsible for the type and intensity of transportation improvements. Land use and economic policies as well as housing and construction policies each influence transportation activity (Vasconcellos, 2001). The effectiveness of transportation policy rests upon the coordination between itself and these other public sector policies.

Government involvement in transportation hinges on two points: government’s (a) recognition of transportation externalities, inequities, and monopolistic behavior, and (b) use of transportation policy as a vehicle for accomplishing specific goals. The following sections will outline the laws, regulations, and finance mechanisms governments can use to develop an overarching policy toward transportation activity.

#### **Recognizing Transportation Externalities, Inequities and Monopolistic Behavior**

A government that recognizes and wishes to minimize the “inherent characteristics” associated with transportation activity will opt to do so through regulations and laws. Finance mechanisms intended to capture externalities are well known, but most

governments do not use them as a principal means of correcting spillover effects. Finance mechanisms, while often very powerful tools, are almost always never perfect. None can accurately capture all of the costs and benefits associated with externalities. Furthermore, it is often impossible to quantify the exact externalities a mechanism should be capturing.

### *Laws and Regulations*

The laws and regulations associated with transportation externalities fall into five broad categories: those that (a) define standards for specific transportation markets, (b) manage infrastructure, (c) govern the use of transportation systems, (d) control competition and (e) promote social equity.

#### *Defining Standards*

The first group of laws and regulations define standards for operating vehicles and infrastructure with regards to safety, noise, pollution, and energy efficiency. Emission standards, for example, impact motor vehicles, railroad locomotives, aircraft and ships. Other standards require crash resistance minimums, accessibility for the disabled, emergency exits and so forth. These standards are enforced by monitoring transportation vehicle manufacturers and, once vehicles are in operation, by requiring vehicle owners to undergo regular vehicle inspections.

On the infrastructure side, regulations outline how infrastructure is to be constructed and configured. For example, a number of regulations define street geometry standards, railroad grade crossing configurations, and station design.

#### *Managing Infrastructure*

Laws and regulations associated with infrastructure management address the manner in which infrastructure is allowed to expand and contract. They primarily focus on preventing wasteful duplication of infrastructure, but also regulate how infrastructure will be dismantled or abandoned. Government has a legitimate interest in ensuring that new infrastructure is warranted and that abandoned infrastructure does not cause avoidable negative impacts. For example, every city in a region may want to construct its own airport, but laws and regulations will prevent them from doing so, thus avoiding the existence of several underutilized airports within close proximity of one another. Similar regulations might also prevent private road operators from building competing road segments side by side one another.

Abandonment is also heavily regulated, especially among transportation sectors that have capital plants that impact the environment. Railroads in the U.S., for example, are unable to simply abandon infrastructure without a long, thorough regulatory process designed to ensure that environmental cleanup and mitigation occurs before the property is converted to other uses. Furthermore, regulations may prevent the dismantling of infrastructure even after abandonment in an effort to keep avenues open for future uses.

#### *Governing Use of the Transportation System*

Laws and regulations in this category address who has access to transportation systems, how transportation activity is coordinated, and how activity is enforced. *Access* to transportation systems—road, rail, air, and so forth—is often controlled through legal and regulatory systems that require licenses or other forms of authorizations (certificates, etc.), which are awarded based upon a set of certain criteria (age, prior criminal record, etc.) as

well as successful completion of specific tests or training. A simple example is the requirement that in order to drive, an individual must have a valid drivers' license in their possession. Violation of the "rules of the road" may result in the revocation of the license. Similar authorizations are required for all other transportation industries from public transportation to aviation.

Apart from operating licenses, there may be additional regulatory requirements that govern access. In the United States, for example, it is illegal for a driver to operate a vehicle without auto insurance. Furthermore, as previously mentioned, access to transportation systems is not limited to those who operate transportation equipment. It also includes passengers. Laws and regulations allow transportation providers to restrict access to those who not only do not pay the appropriate fare, but also disobey cultural norms and company rules for passengers.

Additional laws and regulations *coordinate* transportation activity. Whether it is a simple stop sign on Main Street or a highly sophisticated air traffic control system, the need for coordinating activity is important for reasons of safety and efficiency. Laws and regulations ensure that coordination not only occurs, but that it is applied uniformly from jurisdiction to jurisdiction (the case with motor vehicle systems) or from company to company (the case with private railroads).<sup>33</sup> Therefore, traffic signals and signs have a uniform design and a code that governs their use, which, in turn, provides a degree of coordination for the motor vehicle system. Alternatively, large air traffic control network coordinate the flight patterns of private commercial airlines as well as military and general aviation aircraft.

*Enforcement* is necessary to ensure that individuals or companies adhere to the laws and regulations associated with either transportation access or coordination. Relevant procedures identify the appropriate entity to respond to a specific violation and also outline response mechanisms and punishment. Thus, if an automobile driver speeds down a municipal road, local law enforcement may be responsible for detaining the individual and issuing a citation that may require payment of a fine. Alternatively, laws and regulations may authorize the use of electronic speed detectors that issue citations via the mail, eliminating the need for direct contact with law enforcement. An unruly passenger on a commercial flight might be detained by national authorities who meet the individual once the flight has safely landed. Punishment may come in the form of an arrest, a ban from flying or payment of a citation. In addition to individuals, companies themselves may be heavily fined or completely banned from operation by government authorities if they violate laws and regulations. National authorities have grounded entire fleets of unsafe aircraft, for example.

### *Controlling Competition*

Another set of rules and regulations addresses competition in specific transportation markets, primarily to limit monopolistic behavior in industries where barriers to market entry are considered suboptimal. When barriers to entry are high, government may attempt to limit monopolistic behavior; when they are low, government may need to limit entry into the market. Too many actors may create additional negative externalities. Relevant efforts may therefore limit firms' ability to be price makers or to merge with one another. Railroads and commercial airlines in the United States and Europe, for example, cannot simply conduct mergers as they wish. Any proposed merger must be reviewed and subsequently approved by a supranational or national regulating body.

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<sup>33</sup> Companies may employ very different coordinating systems; harmonization requires, however, that each system coordinate transportation activity to the same degree.

A taxi market is a prime example of a market with low barriers to entry. Despite the easy of entry, too many taxis make for congested streets and competitive behavior that may endanger the safety of drivers and their passengers. Municipal governments may heavily regulate the taxi market through the use of operating licenses that authorize individual drivers to operate a taxi within a specific jurisdiction. Municipal government can closely regulate the number of licenses in circulation at any given time, preventing an overprovision of service.

#### *Promoting Social Equity*

A final set of laws and regulations concerns social equity. This largely deals with fare structures, but can also concern service areas. Governments, for example, may see the need to regulate fares for transportation in an effort to protect those who may not be able to afford basic services. Furthermore, there may be laws and regulations that govern service to specific communities. If government considers a specific transportation service vital to a community, a public or private company may be prohibited from discontinuing or altering service.

#### *Finance Mechanisms*

As previously stated, finance mechanisms that capture the externalities of transportation activity are well known, but not often employed. These can be divided into two groups: those that capture positive externalities and those that capture negative externalities.

#### *Capturing Positive Externalities*

New transportation activity often increases the value of surrounding properties. A finance mechanism known as land value capture seeks to expropriate a portion of that increase and reinvest it into transportation improvements. Taxes or fees are therefore levied on landowners who will reap partial benefit from the improvements. These owners are often identified based upon the predominate mode for accessing the improvements. Thus a specific walking distance may identify affected landowners around a subway station. A new freeway exit, on the other hand, would impact land values within a certain driving distance from the off ramp.

Another type of finance mechanism levies a charge on businesses that are located in areas with public transportation services. The mechanism—usually a tax—seeks to capture the benefits that businesses and their employees receive through having access to subway, bus, and commuter rail systems. French municipalities, for example, employ the *Versement de Transport*, a tax on businesses in urban areas, in this manner.

#### *Capturing Negative Externalities*

A variety of finance mechanisms can be used to capture the negative externalities—noise, pollution, congestion, and safety issues—associated with transportation activity. These mechanisms can be very basic or extremely complex and, as previously mentioned, are often very difficult to calculate.

The most basic finance mechanism for capturing externalities is a *user fee*, although, admittedly, it is not always employed for this purpose. User fees are primarily levied to capture the marginal costs of travel. A private road operator will, at a minimum, levy tolls that generate sufficient revenues to cover the costs of maintaining the infrastructure it

manages.<sup>34</sup> The cost of travel in this example is the wear and tear of infrastructure and also damage caused by accidents. Tolls might therefore vary by vehicle type; the larger the vehicle, the more damage it may cause to the roadway. Another component of the marginal cost of travel is the congestion effect that vehicles create. A piece of infrastructure has an efficient operating capacity. A private road operator may use price elasticities with respect to tolls or user fees to influence demand and, consequently, maintain efficient operating capacity.

User fees in the example above merely capture the marginal cost of travel. Tolls can be set, however, at a much higher rate in an effort to decrease demand *beyond* necessary operating efficiency levels. In this case the user fee not only captures the marginal cost of travel (wear and tear, accident costs, congestion effects), it also begins to capture some of the negative externalities associated with transportation activity such as noise and pollution. In this case the toll is being used as a *congestion charge*. London, for example, has established a congestion charge that discourages a large portion of motor vehicle traffic from entering the central business district. As a result, traffic in downtown London has been reduced by roughly 30 percent since the congestion charge was established in 2003 (Transport for London, 2007).

The *pollution tax* is a finance mechanism that is directly related to reducing pollution. Ideally, a pollution tax would be levied on the amount of pollution specific transportation activities produce. Thus, a tax would be associated with every ton of carbon dioxide or nitrogen oxide emitted. Levying a pollution tax on transportation activity is difficult, however. The degree of externality depends on the type of pollutant being emitted and in some cases, the time of day and weather conditions in which emission occurs.<sup>35</sup> It is extremely difficult to track emissions on a per vehicle basis (e.g. measuring tailpipe emissions as they occur and associate emissions with the time of day and weather conditions) in order to properly price a pollution tax.

A much less effective, but more practical approach to targeting emissions with finance mechanisms is with a *vehicle excise tax* that takes a vehicle's pollution emitting potential into consideration. Despite the fact that it does not capture actual emissions, the tax scheme can make higher polluting vehicles pay more in relation to vehicles that have the potential to pollute less. Excise taxes are often levied on a regular basis, yearly or every other year, for example.

*Fuel taxes* may also be used to capture negative transportation externalities. In this example, taxes are levied on purchases of fuel for all vehicle types. A fuel tax is directly related to use; a user pays more of the tax the more fuel they purchase. The link between fuel consumption and externalities is not always strong. Fuel taxes, just as excise taxes, are often considered a second best solution. While they are effective proxies for carbon taxes, they are not as effective for other types of emissions, as well as congestion and safety externalities (Gwilliam & World Bank, 2002).

### **Accomplishing Specific Goals**

Whereas the last section was concerned with recognizing transportation externalities (which may be a government goal in and of itself), the following section looks at ways in

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<sup>34</sup> The private operator will want to realize a profit, however. The toll charged will therefore need to exceed the marginal cost of travel.

<sup>35</sup> For example, in sunlight, nitrogen oxide can combine with other compounds to form harmful ground-level ozone (U.S. Environmental Protection Agency, 2008).

which government enables transportation activity and improvements to satisfy specific goals. Governments often employ a series of laws, regulations and finance mechanisms related to transportation that are intended to promote economic development, mobility or connectivity, for example. These are most often directed to improvements that may not happen without government intervention.

### ***Laws and Regulations***

Myriad laws and regulations create the regulatory environment for transportation activity. Some regulations also work to promote technological innovation, promote interconnectivity between systems, modal integration, and, perhaps most importantly, promote partnerships between the public and private sectors.

Technological innovation is almost always a response to emission and safety regulations. For example, tighter emission standards have spurred the development of new low emission vehicles from automobile, truck, and railroad locomotive manufacturers. Vehicles have also become more energy efficient. Safety standards have produced vehicles that are more maneuverable and responsive, which utilize safer and stronger materials as well as more intuitive user interfaces.

Other laws and regulations promote interconnectivity between systems, encouraging sub-national and national government to work together to promote interconnected road networks, for example. They might also allow competing private entities to pursue joint ventures such as shared facilities or reservation systems. Still other regulations may promote modal integration, allowing bikes, buses, streetcars, automobiles and pedestrians to share rights-of-way or by incentivizing the construction of intermodal transfer facilities.

Finally, public private partnerships also require a support system of laws and regulations that enable their success. Generally speaking, these laws and regulations make partnerships possible, define the relationship between government and the private sector, outline specific partnerships through contracts and concessions, and determine appropriate action should either party fail to uphold their responsibilities. Setting up the proper legal and regulatory support system is often a very difficult and challenging process.

### ***Finance Mechanisms***

Obviously, any revenue generating mechanism can be used to finance transportation activity along with any other government expenditures. In the case of transportation, government can opt for dedicated or undedicated revenues arrangements. Under a dedicated arrangement, a specific portion of revenue is exclusively reserved for transportation expenditures. These revenues are usually tied directly to a tax or user fee and cannot be diverted to any other expenditure outside that to which they have been dedicated. In the case of undedicated revenue arrangements, transportation expenditures are funded from general government revenue.

In terms of dedicated revenues, any of the finance mechanisms used to correct transportation externalities—land value capture, employer taxes, tolls, congestion charges, pollution taxes, excise taxes, fuel taxes—could fund transportation activity. Other common mechanisms include other user fees, such as transit fares and license fees; recurrent taxes, such as vehicle registration fees; and even sales taxes. Some mechanisms aim to create a direct link between transportation activity and expenditures, whereas others, namely the sales tax, do not.



Dedicated revenue sources lend a degree of stability and continuity to financing government expenditures from year to year.<sup>36</sup> This is especially important for transportation infrastructure finance, which often involves large investments that take place over a number of years. Operating expenses, too, benefit from dedicated resources. Agencies are able to conduct long-term strategic planning more effectively when it is known that financing will be there in the future.

### 3.4 A Framework for Analysis

This chapter has explained why governments become involved in transportation, how involvement is assigned to specific levels of government, and how the government becomes involved in the sector. In answering these questions, several overarching elements have emerged, which form a framework for analyzing transportation policy and finance systems. These elements include fiscal equivalence, externalities, and equity. A transportation policy and finance system that accounts for these elements is, in the long run, more sustainable and more beneficial to both the government and the individuals who utilize its services.

#### Fiscal Equivalence

A good transportation policy and finance system will acknowledge the fiscal equivalence condition, assigning transportation expenditures and the correspondent fiscal autonomy to the appropriate sub-national jurisdictions. This creates a more efficient system that can accommodate localized preferences, which are a function of political ideology, climate, terrain, and economic conditions among other things. Additionally, fiscal equivalence allows taxpayers to create a link between the taxes and user fees they pay, and the benefits and services they receive. This is important at the level of democracy and accountability.

#### Externalities

This chapter has also reviewed the externalities associated with transportation activity. These can be positive—increased land values, agglomeration effects, network effects—and negative—noise, pollution, congestion, and accidentality. Third parties, therefore, reap the benefits or pay the costs of transportation activity even though they are not directly involved in the original transaction.

Completely accounting for the costs and benefits that make up transportation externalities is extremely difficult, if not impossible. A transportation policy and finance system can be assessed, however, by its efforts to recapture some of those externalities. This, of course, must occur in the proper institutional and technological context.<sup>37</sup> The end result is a more economically and socially optimal system in which individuals, firms and governments understand and internalize the true benefits and costs of transportation activity.

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<sup>36</sup> This is not to imply that mechanisms themselves are inherently stable. All revenue-generating mechanisms fluctuate as macro and microeconomic conditions change. Dedicated revenue streams lend stability to the *political process* of funding transportation expenditures because there is a prior understanding about the revenue's use.

<sup>37</sup> Several of the aforementioned mechanisms for capturing transportation externalities are likely beyond the administrative capacity of some governance systems.

## **Equity**

The transaction-based nature of transportation activity means that access to transportation systems is controlled through purchases. An individual must pay a fare to ride the public transit system or purchase a vehicle in order to use the road system. Because individuals have different monetary budgets, this has varying impacts on different sectors of society. Some sectors of society may be disproportionately burdened by the costs required to access transportation systems. Furthermore, even once access to the systems is gained, inequity may manifest itself in terms of the time it takes to access opportunities and the quality of service they experience.

Whether subsidies offer discounted fares to the poor or investments create faster and more convenient public transportation services, a transportation policy and finance system can be assessed by the degree to which it acknowledges the inherent inequity in transportation activity.

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Transportation policy and finance systems must therefore attempt to adhere to the fiscal equivalence condition, attempt to correct the externalities of transportation activity, and address equity issues with respect to transportation infrastructure and operations. This framework will be used to analyze the Portuguese surface transportation policy and finance system. Because the system is embedded in the larger public finance system, however, this analysis will begin with a description of the Portuguese public finance system in general. Chapter 4 will introduce the reader to Portugal and its public finance system, concluding with a brief analysis of the system through a review of the elements introduced in Chapter 2. Analysis of the transportation policy and finance system will begin in Chapter 5.

## 4 The Portuguese Public Finance System

This chapter will provide an overview of the Portuguese public finance system, providing information regarding the nation's structure of government, revenue assignment and expenditures. As a case study, the Portuguese public finance system can be characterized as a fairly stable system that has been devolving authority and fiscal autonomy to municipal government over the past several years. While hard budget constraints hold municipal governments in check, high public sector debt at the central government level as well as issues surrounding fiscal equivalence and the transparency of tax administration represent significant challenges for the system.

### 4.1 Background

Located in the southwest corner of the Iberian Peninsula, Portugal is a nation of approximately 10.6 million inhabitants. The country is roughly the size of the State of Maine with an area of just over 92,000 square kilometers (approximately 35,500 square miles), which includes the autonomous regions of Madeira and the Açores, Portuguese archipelagos in the Atlantic Ocean.

Portugal was ruled by an authoritarian dictatorship until 1974 when a peaceful revolt, known as the Carnation Revolution (*Revolução dos Cravos*), took place. The country ratified a constitution in 1976 and, since then, has been governed as a parliamentary republic with national and municipal elections open to all citizens over the age of eighteen. In 1986, the nation gained membership to the European Union (EU).

#### Population

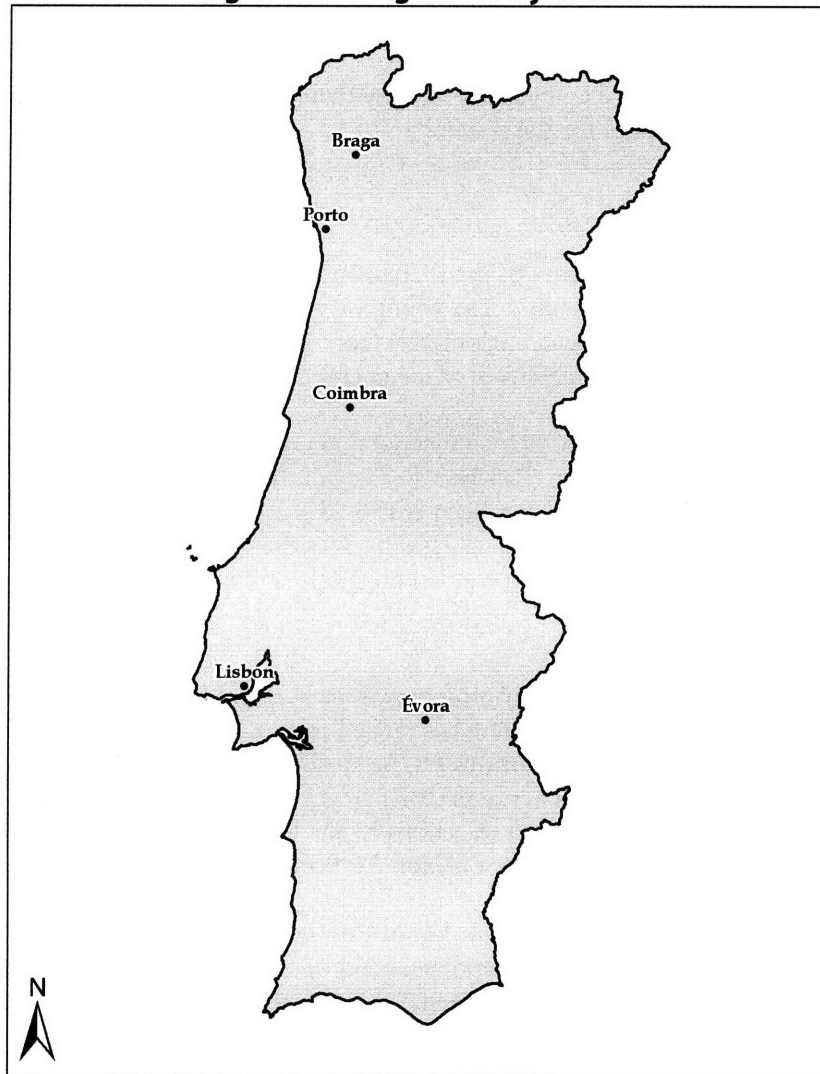
Despite its small population, population growth in Portugal has fluctuated greatly over the last five years. The overall growth rate has ranged from a high of 0.75 percent in 2002 to a low of 0.28 percent in 2006. Much of this can be attributed to immigration; natural population growth has only ranged between 0.02 percent and 0.08 percent in the past five years (INE, 2007). Future population projections by the U.S. Census Bureau International Data Base anticipate an overall loss in population for Portugal by 2025 due to a declining birth rate (2007).

Over the past two decades, the population of Portugal has concentrated itself along the country's coast in and between the metropolitan areas of Lisbon and Porto (INE, 2006). The Lisbon metropolitan area is approximately 2,900 square kilometers (1,100 square miles) and is composed of eighteen separate municipalities. In 2001, the last year for national census data, the Lisbon metropolitan area had a population of 2.7 million (INE, 2001). Population growth has been limited to the periphery of the metropolitan area; the actual municipality of Lisbon (where most economic activity has been traditionally concentrated) has been losing population. Although the population of the metropolitan area grew approximately six percent from 1991 to 2001, the municipality lost fifteen percent of its population during that same period (Câmara Municipal de Lisboa, 2005b). This trend continues.

The Porto metropolitan area is approximately 1,900 square kilometers (730 square miles) and consists of fourteen municipalities. The 2001 population was estimated to be 1.6

million (Área Metropolitana do Porto, n.d.). Outside of the metropolitan areas, other important Portuguese cities include Braga (2005 population of 170,900), Coimbra (2005 population of 142,400) and Funchal (on Madeira; 2005 population of 100,000) (Direcção-Geral das Autarquias Locais, 2005). Figure 2 shows the location of the major Portuguese cities.

**Figure 2. Portugal and Major Cities**



### **Economy**

Portugal's gross domestic product (GDP) was approximately 176.8 billion euros in 2006<sup>38</sup> and GDP per capita was estimated to be 16,679 euros, 0.75 of the average for the 27 EU Member States in the same year (Economist Intelligence Unit, 2007; Eurostat, 2008). After being admitted to the EU in 1986, the country saw significant growth in terms of

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<sup>38</sup> Purchasing power parity.

GDP. Between 1996 and 2000, for example, the annual average rate of GDP growth was a staggering four percent (INE, 2006). Growth rates began to shrink after 2000 and, in 2003, the country saw its GDP decrease by 1.1 percent. Since then, GDP has grown modestly: 0.5 percent in 2005 and 1.3 percent in 2006. The IMF projects GDP growth in Portugal to be 1.8 percent for both 2007 and 2008 (IMF, 2007).

The Portuguese deficit has fluctuated greatly in the past few years. Table 6 highlights the evolution of the deficit both in real terms and as a percentage of GDP. The IMF predicts that Portugal will slide into even higher debt, forecasting that the deficit will reach 9.2 as a percentage of GDP in 2008 (IMF, 2007). Twice, in 2002 and 2005, Portugal has been required to enter the “excessive deficit procedure” with the European Commission after violating the Maastricht Treaty, which requires all EU Members to maintain national deficits below three percent of GDP (OECD, 2006).

**Table 6. Evolution of the Portuguese National Deficit, 2000-2005**

(in millions of euros)

<b>Deficit</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Central Government	-3,214	-4,764	-4,290	-5,221	-7,969	-8,938
Regional & Local Gov't	-473	-497	-592	-343	55	-437
Social Security	142	-255	1,018	1,551	3,369	480
<b>Total</b>	<b>-3,545</b>	<b>-5,516</b>	<b>-3,864</b>	<b>-4,013</b>	<b>-4,545</b>	<b>-8,895</b>
<b>As % of GDP</b>	<b>-2.9%</b>	<b>-4.3%</b>	<b>-2.9%</b>	<b>-2.9%</b>	<b>-3.2%</b>	<b>-6.0%</b>

Source: INE (2006)

## Labor

Annual average income per inhabitant in Portugal was 712 euros per month in 2006, a 1.8 percent increase from the previous year (INE, 2007). The estimated Gini coefficient for Portugal, which represents income distribution equality,<sup>39</sup> was estimated at .410 in 2005. In comparison, during the same period the EU25 area (the twenty-five member states of the European Union) and the Euro area (the twelve countries which utilized the Euro at that time) had Gini coefficients of .300 and .310, respectively (Eurostat, 2007).

The unemployment rate in Portugal was 7.6 percent and 7.7 percent in 2005 and 2006, respectively. This is expected to decrease to 7.1 percent in 2008. As a comparison, the unemployment rate in the Euro area for the same periods was 8.6 percent and 7.8 percent. However, the International Monetary Fund (IMF) projects the Euro area unemployment rate to decrease to 6.8 percent in 2008 (IMF, 2007).

## 4.2 Structure of Government

The Portuguese Constitution of 1976 laid out the framework for three tiers of sub-national government: regional, municipal, and the parish council, a subdivision of municipal government known as the *freguesia* (C. N. Silva & Syrett, 2006). Since then, the municipal and *freguesia* jurisdictions have remained embedded as elements of the current government

<sup>39</sup> The Gini coefficient values range from 0 to 1. The lower the value, the more income equality in the economy being surveyed.

structure. A form of regional government, however, has never been adopted.<sup>40</sup> In fact, as recently as 1998, a national referendum to create elected regional administrations was rejected (Syrett & Silva, 2001). The Portuguese municipality has therefore emerged as the principal form of sub-national governance in the country.

### Central Government

Portugal is a parliamentary republic, governed by a president, prime minister and a 230-member parliament, the unicameral *Assembleia da República*. Primary authority rests in the hands of the prime minister, the prime minister's council of ministers, and the parliament; the president of Portugal does not hold broad executive powers. Central government activity is divided among fourteen separate government ministries,<sup>41</sup> the leaders of which serve on the council of ministers.

Inman (2007) categorized Portugal as a unitary democracy (see Table 2). Although members of parliament are elected based upon sub-national electoral districts within Portugal, those districts have no autonomous governance structure. Municipalities, the most substantial form of sub-national governance in Portugal, have no formal representation in national-level legislation. Furthermore, the public expenditures undertaken by sub-national governments are very small, indicating a less devolved governance structure.

### Regional Government

As previously stated, no form of formal regional representation exists in Portugal. Regional administration and representation in Portugal is currently a mix of deconcentrated central government field offices, regional development commissions, and municipal coalitions that have been created to deliver specific public services. There is no consistent application of regional organization throughout the nation. Most of what would be considered regional organization is a voluntary process loosely enabled by central government but driven by municipalities. Additionally, the borders of different regional bodies often overlap one another and the responsibilities and goals of each jurisdiction are not always clear.

### Civil Governments (Governos Civis)

Portugal is divided into twenty-two administrative districts (*distritos*)—eighteen of which are in continental Portugal—which define the borders of the country's civil governments as well as national electoral districts (*circulos eleitorais*). Civil governments are field offices of

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<sup>40</sup> The autonomous regions of the Açores and Madeira are an exception; both have elected regional legislative assemblies.

<sup>41</sup> The fourteen ministries are: the Ministry of Foreign Business (*Ministério dos Negócios Estrangeiros, MNE*), the Ministry of Finance and Public Administration (*Ministério das Finanças e da Administração Pública, MFAP*), the Ministry of National Defense (*Ministério da Defesa Nacional, MDN*), the Ministry of Internal Administration (*Ministério da Administração Interna, MAI*), the Ministry of Justice (*Ministério da Justiça, MJ*), the Ministry of Environment, Spatial Planning and Regional Development (*Ministério do Ambiente, do Ordenamento do Território e do Desenvolvimento Regional, MAOTDR*), the Ministry of Economy and Innovation (*Ministério da Economia e da Inovação, MFI*), the Ministry of Agriculture, Rural Development and Fisheries (*Ministério da Agricultura, do Desenvolvimento Rural e das Pescas, MADRP*), the Ministry of Public Works, Transportation and Communication (*Ministério das Obras Públicas Transportes e Comunicações, MOPTC*), the Ministry of Labor and Social Solidarity (*Ministério do Trabalho e da Solidariedade Social, MTSS*), the Ministry of Health (*Ministério da Saúde, MS*), the Ministry of Education (*Ministério da Educação, ME*), the Ministry of Science, Technology and Higher Education (*Ministério da Ciência, Tecnologia e Ensino Superior, MCTES*), and the Ministry of Culture (*Ministério da Cultura, MC*).

central government. A civil governor, appointed by central government, leads the civil government. This deconcentration of central government authority gives civil governments a very limited set of responsibilities, such as coordinating national elections, issuing passports and providing for public safety in the event of a natural disaster (Governo Civil de Beja, 2008).

### ***Regional Development Commissions (Comissões de Coordenação e Desenvolvimento Regional)***

In addition to civil governments, Portugal is divided into five regional development commissions, known by their Portuguese acronym as CCDRs. These serve as deconcentrated jurisdictions of central government that support economic development within their respective regions largely through the application for and distribution of European Union (EU) Structural Funds. Before 2007 the CCDRs were responsible for approving municipal land use plans within their respective regions. However, this authority has since been removed through legal reforms (J.C. Mourão, personal communication, February 8, 2008).<sup>42</sup>

The five CCDRs represent the north, central, Algarve, and Alentejo regions as well as a region composed of the Lisbon metropolitan area and the Rio Tejo valley. The boundaries of each regional development commission are based upon the EU NUTS II (Nomenclature of Territorial Units for Statistics) designations for Portugal, a statistical division applied to all EU member states.

The leaders of each regional development commission are appointed by central government in a process that gives municipalities a modicum of representation. The municipalities within a given region collectively nominate three candidates to the presidency of the CCDR, one of whom is selected and installed as president by central government (J.M. Viegas, personal communication, July 13, 2007).

### ***Municipal Coalitions***

In recognition of the “growing need to coordinate supra-municipal investments and activities such as the provision of roads, sewerage, water supply, public transport and environment protection,” national legislation was passed in 1991 to create metropolitan governments in the Lisbon and Porto metropolitan areas (C. N. Silva & Syrett, 2006, p. 107).<sup>43</sup> Municipalities in these metropolitan areas appointed representatives to the metropolitan government to coordinate collective planning issues. This legislation was later expanded in 2003 to allow any group of municipalities to form “municipal coalitions”. A specific municipality could therefore join with other neighboring municipalities to form one of three types of coalitions: Large Metropolitan Areas, Urban Communities, and Inter-Municipal Communities (*Grandes Áreas Metropolitanas, GAM; Comunidades Urbanas, CU; and Comunidades Inter-Municipais, CI*; respectively). Eligibility for a specific type of coalition was based upon the collective population and level of urbanization within the coalition.<sup>44</sup>

Two hundred and sixteen of Portugal’s 308 municipalities have formed municipal coalitions consisting of seven GAMs, ten CUs and two CIs (Direcção-Geral das Autarquias Locais, 2005). The degree of activity varies widely among coalitions, and in most cases there

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<sup>42</sup> Lei 60/2007 brought the reform of Decreto-Lei 380/99 which had originally given CCDRs authority over what are called “detailed plans”—the *loteamento* and *plano de pormenor*—which are created by municipalities.

<sup>43</sup> Lei 44/91.

<sup>44</sup> See *Diário da República*, N.º 110, Série-A, pp. 3050-3065 for more on specific criteria.

is little evidence that the coalitions fulfill the all-encompassing planning role envisioned in the enabling legislation. This reflects the degree of difficulty municipalities have in granting both authority and a stable financing structure to the coalitions. Most active municipal coalitions in Portugal can be likened to “special governments” organized around specific policy issues such as municipal waste services or riparian and coastal resource protection (J.C. Mourão, personal communication, February 8, 2008).

### ***Other Regional Administrations***

Another notable effort to create a regional governance structure has centered upon Metropolitan Transportation Authorities (*Autoridades Metropolitanas de Transportes, AMT*). These entities are intended to coordinate public transit service planning and provision in the metropolitan areas of Lisbon and Porto, which are composed of multiple municipalities. As currently formulated, unprecedented control over transportation services—administrative and financial—would be devolved from central government to the AMTs (R. Macário, personal communication, August 2, 2007). Adoption of the AMT proposal would represent a drastic change in the vertical structure of the Portuguese governance system.

The proposal for metropolitan transportation authorities has been circulating in Portugal for quite some time. What remains unclear, however, is why implementation has stalled. It is speculated that political ownership of the proposal is at the center of the standstill. Because the proposal was the work of a political party that lost the national leadership in the previous election cycle, the current national administration is avoiding the AMT proposal as a face-saving strategy (R. Macário, personal communication, August 2, 2007).

In addition to the AMTs, the recent reorganization of central government has created another group of regional administrations devoted to mobility and transport known as Regional Mobility and Transportation Directorates (*Direções Regionais de Mobilidade e Transportes*). The responsibilities and goals of these regional directorates, as well as their potential interaction with the proposed AMTs of Lisbon and Porto, are undefined as of yet (J.B. Silva, personal communication, July 26, 2007). It is clear, however, that the directorates are conceived as deconcentrated arms of central government, as the national land transportation regulator (see Section 5.2) will coordinate their activity.

### **Municipal Government**

All land in continental Portugal is under the jurisdiction of a municipality. There are currently 308 municipalities in the country, each operating via a bicameral legislative system comprised of a municipal chamber (*câmara municipal*) and a municipal assembly (*assembleia municipal*) (Direção-Geral das Autarquias Locais, 2005). Each municipality is subdivided into parish councils (*freguesias*), the respective populations of which elect a parish assembly (*assembleia de freguesia*) as well as a parish junta (*junta de freguesia*).

The municipal chamber is made up of a president and several city council members. The number of city council members allowed to serve on the chamber is proportional to the electoral population of the municipality. The smallest municipalities (those with an electorate of less than 10,000) are allowed four city council members whereas Lisbon, the largest municipality, has a municipal chamber of seventeen members (including the president) (Governo da República Portuguesa, 1999b). Members are elected to four-year terms through local elections, which are based upon party-list proportional representation. The membership of Lisbon’s current municipal chamber, for example, represents four



different political parties and two separate sets of “independents” (“Eleições em Lisboa: O futuro da câmara e o fenómeno dos independentes [Elections in Lisbon: The future of the chamber and the phenomenon of the independents]”, 2007). In contrast to the municipal chamber, the municipal assembly is not directly elected. It is made up of the presidents of the various parish councils inside the municipality.

The number of parish councils, or *freguesias*, within a given municipality varies widely throughout Portugal. Barcelos, a municipality in northern Portugal, has 89 parishes, more than any other municipality. On the other hand, several municipalities have only one parish within their borders and, in a special case, the municipality of Corvo has none (Direção-Geral das Autarquias Locais, 2005, pp. 43-46). Residents within each parish council elect a parish assembly, the size of which is based upon the jurisdiction’s electoral population. The candidate to receive the highest number of votes is elected to the presidency of the *freguesia* and represents his or her respective parish council in the municipal assembly. Once a parish assembly has been elected, its members internally elect the parish junta, an executive board. The legal size of the junta ranges from two to six members based on the parish’s electoral population (Governo da República Portuguesa, 1999b).

### 4.3 Expenditure Assignments

Portugal has been gradually devolving government responsibilities to municipal government, yet the assignment of government expenditures remains significantly concentrated at the central level. Central government is responsible for expenditures such as national defense, citizenship, immigration, postal services, telecommunication services, transportation infrastructure, energy infrastructure, agriculture, as well as some education, culture, and health care expenditures. Central government also assumes expenditure responsibilities for some services provided at the municipal level. These include public transportation and sub-national police services.

Portuguese municipalities are responsible for urban planning and revitalization, water works, local road construction and maintenance, public transportation (with the exception of the Lisbon and Porto metropolitan areas), fire services, municipal police,<sup>45</sup> municipal waste delivery, public housing, culture (libraries), parks and recreation, and tourism (Câmara Municipal de Coimbra, 2007a; Câmara Municipal de Lisboa, 2006). Some municipalities also run municipal health systems and public education systems, which are joint expenditures of municipal and central government.

Municipalities can deconcentrate certain responsibilities to the parish councils within their boundaries. In Porto, for example, some parish councils are responsible for operating small pre-schools and maintaining public restrooms (J.F. Branco, personal communication, February 4, 2008).

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<sup>45</sup> Portuguese municipalities can fund municipal police forces, however, national law limits their jurisdiction to municipal code enforcement for construction and commercial activity, public safety in recreational areas, and traffic enforcement (Câmara Municipal de Lisboa, 2008). Criminal investigations, for example, are the purview of the *Polícia de Segurança Pública* in metropolitan areas and the *Guarda Nacional Republicana* in other parts of the country. Both of these organizations are arms of central government.

## 4.4 Revenue Arrangements

### Tax Revenue and Tax Administration

The power to tax is reserved for central and municipal governments in Portugal; parish councils are not able to levy taxes. Tax assignment generally follows the consensus view outlined in Chapter 2. Highly mobile sources such as business, labor, and retail transactions are taxed at the national level while municipalities are free to tax land and real estate transactions as well as a small portion of corporate income. Central government levies a special “stamp duty” on major purchases (land, real estate, automobiles) as well as financial transactions, operating licenses and copyrights (Direcção-Geral dos Impostos, 2008). Excise taxes are entirely the purview of central government, which levies separate taxes on fuel, automobiles, alcohol and alcoholic beverages, and tobacco products. Recurrent taxes include a roads tax levied at the national level as well as a gambling tax levied at the municipal level (Câmara Municipal de Lisboa, 2006; MFAP, 2008b). Table 7 provides an overview of tax assignment in Portugal.

The Portuguese tax system has seen two major reforms over the past five years with the intention of simplifying taxation. In 2003 and again in 2007, several taxes were abolished or rolled into other taxes. The 2003 reform was the more extensive of the two. It eliminated the national Inheritance and Gift Tax (*Imposto sobre as Sucessões e Doações*), exempting several transactions (namely inheritance transfers to immediate family) impacted by the tax and rolling the remaining taxable transactions into the existing Stamp Duty (*Imposto do Selo*). The reform also impacted municipal taxes. Two separate municipal property taxes, the Autarchic Contribution (*Contribuição Autárquica*) and the Contribution for Historic and Urban Buildings (*Contribuição Predial Rústica e Urbana*), were abolished. Also, the Municipal Transfer Tax (*Imposto Municipal de Sisa*) was replaced by the Municipal Real Estate Transaction Tax (*Imposto Municipal sobre Transmissões Onerosas de Imóveis*) (Palminha, 2007).

The 2007 reform simplified the road and vehicle tax regime. Prior to the reform an individual might have had to pay four separate motor vehicle taxes. A new road tax, the Single Circulation Tax (*Imposto Único de Circulação*), replaced the old national road tax, known as the Circulation and Haulage Tax (*Imposto de Circulação e Camionagem*) (actually two separate taxes, but often referred to as one), as well as the Municipal Vehicle Tax (*Imposto Municipal sobre Veículos*). As of January 1, 2008, only two taxes impact motor vehicles: the new Single Circulation Tax and the national Automobile Tax (*Imposto sobre Veículos*) (MFAP, 2008a).

**Table 7. Tax Assignment in Portugal**

(italics indicate abolished taxes)

	Central	Municipal <sup>a</sup>
<b>Direct Taxes</b>		
<b>Taxes on Income</b>		
Individual Income Tax	Imposto sobre o Rendimento de Pessoas Singulares (IRS)	-
Corporate Income Tax	Imposto sobre o Rendimento de Pessoas Colectivas (IRC)	Derrama
<b>Social Security Taxes</b>		
Employer/Employee Contributions	Contribuições de Segurança Social (SS)	-
<b>Taxes on Property</b>		
Property Taxes	-	Imposto Municipal sobre Imóveis (IMI), <i>Contribuição Autárquica (CA)</i> <sup>†</sup> , <i>Contribuição Predial Rústica e Urbana (CPRU)</i> <sup>†</sup>
Real Estate Transaction Taxes	-	Imposto Municipal sobre Transmissões Onerosas de Imóveis (IMT), <i>Imposto Municipal de Sisa (IMS)</i> <sup>†</sup>
Inheritance and Gift Tax	<i>Imposto sobre as Sucessões e Doações (ISD)</i> <sup>†</sup>	-
<b>Taxes on Goods and Services</b>		
Recurrent Taxes		
Automobiles	-	<i>Imposto Municipal sobre Veículos (IMV)</i> <sup>‡</sup>
<b>Indirect Taxes</b>		
<b>Taxes on Goods and Services</b>		
Value Added Tax	Imposto sobre o Valor Acrescentado (IVA)	-
Stamp Duty	Imposto do Selo (IS)	-
Excise Taxes		
Fuel	Imposto sobre os Produtos Petrolíferos (ISP)	-
Automobiles	Imposto sobre Veículos (ISV)	-
Alcohol and Alcoholic Beverages	Imposto sobre o Álcool e as Bebidas Alcoólicas (IABA)	-
Tobacco	Imposto sobre o Tabaco (IT)	-
Recurrent Taxes		
Road	Imposto Único de Circulação (IUC), <i>Imposto de Circulação e Camionagem (ICI, ICA)</i> <sup>‡</sup>	-
Gambling	-	Imposto de Jogo (IJ)

Sources: Câmara Municipal de Coimbra (2007a), Câmara Municipal de Lisboa (2006), Direcção-Geral dos Impostos (2008), Governo da República Portuguesa (2007b), Ministério das Finanças e da Administração Pública (2008a), Palminha (2007).

<sup>a</sup> Municipalities can choose to levy all or some of the taxes in this category.

<sup>†</sup> Abolished in 2003. Several abolished taxes appear in present-day municipal budgets, however, as back taxes continue to be collected.

<sup>‡</sup> Abolished in 2007.

**Table 8. Tax Revenue in Portugal: Central Government**

(in millions of euros, nominal values; Portuguese tax acronyms in parentheses)

	1995	2000	2004	2007 <sup>a</sup>	2008 <sup>b</sup>
<b>Direct Taxes</b>					
<b>Taxes on Income</b>					
Individual Income Tax (IRS)	4,740	6,947	7,667	8,770	9,252
Corporate Income Tax (IRC)	1,888	4,448	3,888	5,430	5,511
<i>Taxes on Income Subtotal</i>	<i>6,628</i>	<i>11,395</i>	<i>11,555</i>	<i>14,200</i>	<i>14,763</i>
<b>Social Security Taxes</b>					
Employer/Employee Contributions (SS)	8,126	12,620	15,918	12,288	13,016
<b>Taxes on Property</b>					
Inheritance and Gift Tax (ISD <sup>†</sup> )	57	103	27	0	0
<i>Direct Taxes Subtotal</i>	<i>14,811</i>	<i>24,118</i>	<i>27,500</i>	<i>26,488</i>	<i>27,779</i>
<b>Indirect Taxes</b>					
<b>Taxes on Goods and Services</b>					
Value Added Tax (IVA)	6,075	9,733	11,574	13,100	14,145
Stamp Duty (IS)	1,047	1,147	1,534	1,735	1,830
<b>Excise Taxes</b>					
Fuel (ISP)	2,195	1,969	3,121	3,170	2,760 <sup>c</sup>
Automobiles (ISV)	675	1,239	1,153	1,184	1,120
Alcohol and Alcoholic Beverages (IABA)	165	217	230	207	264
Tobacco (IT)	774	1,077	1,220	1,325	1,430
<i>Excise Taxes Subtotal</i>	<i>3,809</i>	<i>4,502</i>	<i>5,724</i>	<i>5,886</i>	<i>5,574</i>
<b>Recurrent Taxes</b>					
Road (IUC, ICI <sup>‡</sup> , ICA <sup>‡</sup> )	34	43	74	88	111
Other	38	19	21	n.a.	n.a.
<i>Recurrent Taxes Subtotal</i>	<i>72</i>	<i>59</i>	<i>95</i>	<i>88</i>	<i>111</i>
Customs and Import Duties	1	1	0	n.a.	n.a.
Other Taxes on Production	0	41	6	n.a.	n.a.
<i>Indirect Taxes Subtotal</i>	<i>11,004</i>	<i>15,483</i>	<i>18,933</i>	<i>20,809</i>	<i>21,660</i>
<b>Miscellaneous Taxes</b>					
Other Taxes	82	214	144	283	274
<b>Total Tax Revenue</b>	<b>25,897</b>	<b>39,815</b>	<b>46,577</b>	<b>47,580<sup>d</sup></b>	<b>49,713<sup>d</sup></b>

Sources: Direcção-Geral dos Impostos (2008), Ministério das Finanças e da Administração Pública (2007a, 2008b), Organisation for Economic Co-Operation and Development (2007), Palminha (2007).

<sup>a</sup> The 2008 Portuguese National Budget, from which the 2007 revenues are drawn, designates these as "estimated" figures.

<sup>b</sup> The 2008 Portuguese National Budget designates these as "projected" figures.

<sup>c</sup> The decrease in revenue from the previous year is the result of new legislation—Lei 55/2007 Contribuição de Serviço Rodoviário—which dedicates a fixed portion of the Fuel Tax to the national roads authority, Estradas de Portugal. Central government does not count the Contribuição as revenue, thus the decrease from 2007 to 2008.

<sup>d</sup> Note that totals for 2007 and 2008 are incomplete. Revenue figures for minor national taxes were unavailable.

<sup>†</sup> Abolished in 2003.

<sup>‡</sup> Abolished in 2007.

"n.a." indicates not available.

**Table 9. Tax Revenues in Portugal: Municipal Government**

(in millions of euros, nominal values; Portuguese tax acronyms in parentheses)

	1995	2000	2004	2007 <sup>a</sup>	2008 <sup>a</sup>
<b>Direct Taxes</b>					
<b>Taxes on Income</b>					
Corporate Income Tax (Derrama)	129	287	380	320	350
<b>Taxes on Property</b>					
Property Taxes (IMI, CA <sup>†</sup> , CPRU <sup>†</sup> )	310	508	781	n.a.	n.a.
Real Estate Transaction Taxes (IMT, IMS <sup>†</sup> )	288	674	586	n.a.	n.a.
<i>Taxes on Property Subtotal</i>	598	1,182	1,367	n.a.	n.a.
<b>Taxes on Goods and Services</b>					
<b>Recurrent Taxes</b>					
Automobiles (IMV <sup>‡</sup> )	50	79	114	n.a.	n.a.
<b>Direct Taxes Subtotal</b>	<b>777</b>	<b>1,548</b>	<b>1,861</b>	<b>2,199</b>	<b>2,326</b>
<b>Indirect Taxes</b>					
<b>Taxes on Goods and Services</b>					
<b>Recurrent Taxes</b>					
Gambling (IJ)	67	107	117	n.a.	n.a.
<b>Indirect Taxes Subtotal</b>	<b>67</b>	<b>107</b>	<b>117</b>	<b>215</b>	<b>219</b>
<b>Total Tax Revenue</b>	<b>844</b>	<b>1,655</b>	<b>1,978</b>	<b>2,414</b>	<b>2,545</b>

Sources: Ministério das Finanças e da Administração Pública (2007a, 2008a, 2008b), OECD (2007).

<sup>a</sup> Disaggregate revenues for individual taxes were not available with the exception of the Corporate Income Tax (*Derrama*).<sup>†</sup> Abolished in 2003. Several abolished taxes appear in present-day municipal budgets, however, as back taxes continue to be collected.<sup>‡</sup> Abolished in 2007.

"n.a." indicates not available.

Municipalities in Portugal are limited to a specific set of taxes as mandated by national law (Governo da República Portuguesa, 2007a). In comparison with other unitary democracies,<sup>46</sup> however, municipal governments in Portugal have a great deal of autonomy in setting both the tax rates and tax base for the taxes they levy. According to an OECD (1999) tax policy study of 1995 tax revenues, Portuguese municipalities had the authority to set both the tax rate and base on taxes that accounted for 49 percent of municipal tax revenue. Additionally, municipalities could set the rate, but not the base on taxes that raised another 14 percent of municipal tax revenue while the remaining 37 percent of tax revenue came from taxes for which central government set the rate and base. Still, to put municipal taxes into perspective, municipal tax revenue accounted for just four percent of total government tax revenues in 2004 (OECD, 2007).

Table 8 and Table 9 provide an overview of aggregate tax revenue in Portugal for central and municipal government, respectively. Major taxes for central government include the value added tax, income taxes, social security taxes, and excise taxes. Property taxes stand out as the major tax revenue generators for municipalities. In 2004, almost seventy percent of municipal own-source tax revenue came from property taxes. Not reflected in either table is the revenue-sharing arrangement that central government has with municipal governments regarding the personal income tax (*Imposto sobre o Rendimento de Pessoas Singulares, IRS*). This will be discussed in more detail under Intergovernmental Transfers. Table 10 outlines the projected municipal tax revenues for the municipalities of Lisbon, Porto, and

<sup>46</sup>With the exception of New Zealand.

Coimbra for the 2008 budget cycle and expresses tax revenue as a percentage of total municipal revenue.

**Table 10. Projected Municipal Tax Revenues, 2008: Lisbon, Porto, and Coimbra**  
(in euros)

Municipality	Tax Revenues					Total Municipal Revenue*
	Direct*	Indirect*	Total*	Per Capita	As % of Total Revenue	
Lisbon	295.6	1.1	296.7	0.560	54%	546.0
Porto	88.1	19.8	108.0	0.452	51%	212.6
Coimbra	40.7	2.7	43.4	0.305	34%	128.7

Sources: Câmara Municipal de Coimbra (2007a), Câmara Municipal de Lisboa (2007), Câmara Municipal do Porto (2007).

\*Thousands.

Despite the devolution of tax assignment to sub-national jurisdictions in Portugal, all tax administration is conducted by central government. Both central and municipal government taxes are collected and administered by the national Tax Directorate-General (*Direcção-Geral dos Impostos, DGI*). DGI transfers the appropriate municipal tax revenues from central government coffers to the municipalities once a month, charging the municipalities a transaction fee for their services. Under this system, municipal governments cannot track tax remittances and are therefore unable to verify the accuracy of transfers from central government, although, in principle, municipal tax revenues cannot be appropriated by central government (J.F. Branco, personal communication, February 4, 2008).<sup>47</sup>

### Intergovernmental Transfers

Intergovernmental transfers are an important part of the Portuguese public finance system. Central government and all levels of sub-national government receive transfers as a revenue source. The following sections outline each type of transfer in detail.

#### *Transfers to Central Government*

Portugal continues to receive intergovernmental transfers from the European Union (EU) under the supranational authority's Cohesion Policy, which is designed to minimize horizontal imbalances among its member states. These transfers are known collectively as EU Structural Funds, yet they draw from three separate sources: the European Fund for Regional Development (EFRD), the European Social Fund (ESF), and Cohesion Funds. Structural Funds are designed to meet three objectives under the EU's Cohesion Policy: the Convergence Objective, which seeks economic convergence among member states; the Regional Competitiveness and Employment Objective, which works to strengthen regional competitiveness, attractiveness and employment opportunities; and the European Territorial Cooperation Objective, which strengthens cross-border cooperation through joint local and regional initiatives (European Union, 2007a). Each objective draws from the aforementioned funds as outlined in Table 11.

<sup>47</sup> In the case of extreme economic crisis, central government can withhold all or some of the Municipal Corporate Income Tax (*Derrama*).

**Table 11. EU Cohesion Policy Objectives and Funds**

Objective	Structural Funds			Distribution
	EFRD	ESF	Cohesion	
Convergence	EFRD	ESF	Cohesion	81.54%
Regional Competitiveness and Employment	EFRD	ESF		15.95%
European Territorial Cooperation	EFRD			2.51%

Source: EU (2007a).

EU transfers are assessed and disbursed at the NUTS II level, the boundaries of which are contiguous with the regional development commissions (CCDRs) on continental Portugal as well as the autonomous regions of Madeira and the Açores. NUTS II territories must meet specific requirements in order to be eligible for Structural Funds.<sup>48</sup> For example, the area contiguous with the CCDR for the Lisbon metropolitan area and the Rio Tejo Valley is ineligible for funds under the Convergence and European Territorial Cooperation objectives. This is because the GDP per capita in the region is higher than convergence thresholds (eligible regions must have a GDP per capita that is less than 75 percent of the EU average) (EU, 2007b). It is the sole NUTS II territory in Portugal that is restricted from EU Structural Funds.

Once eligibility is assessed for all NUTS II territories, the EU outlines its plan for disbursing Structural Funds. This is conducted once every seven years as part of the EU's Framework Programme (FP) budget cycle.<sup>49</sup> Once the EU discloses aggregate national-level disbursements, member states are required to develop a national plan for distributing the funds to its eligible regions. Although eligibility is assessed at the sub-national level, all transfers go directly to central government for administration and allocation to the appropriate regions, municipalities, companies, or projects.

In 2006, Portugal unveiled the National Strategic Reference Framework (*Quadro de Referência Estratégico Nacional, QREN*) as the national plan for distributing EU Structural Funds during the FP7. The Ministry of Finance and Public Administration (*Ministerio das Finanças e Administração Pública, MFAP*) manages the plan in coordination with other central government ministries, the regional development commissions, and municipalities. During FP7, Portugal is expected to receive 21.5 billion euros as outlined in the following table.

**Table 12. Financial Allocations for Portugal, EU Cohesion Policy, 2007-2013**

(in millions of euros)

Objective	Amount
Convergence	20,473
Regional Competitiveness and Employment	938
European Territorial Cooperation	99
<b>Total</b>	<b>21,510</b>

Source: EU (2006).

The figures in Table 12 represent the full disbursement of funds. Table 13, however, shows the EU funds received between the years of 2005-2007 and anticipated in the 2008 budget year. In addition to Structural Fund support, Portugal also receives

<sup>48</sup>See EU (2007b) for a detailed description of EU Cohesion Policy eligibility requirements.

<sup>49</sup> The EU is currently in the Seventh Framework Programme which began in 2007 and ends in 2013.

intergovernmental transfers for the development of the national agriculture and fishing industries (MFAP, 2008b). They are also included in Table 13.

**Table 13. EU Transfers to Portugal, 2005-2008**

(in millions of euros)

	2005	2006	2007 <sup>a</sup>	2008 <sup>b</sup>
<b>Structural Funds</b>				
European Regional Development Fund (ERDF)	1,603	1,266	2,029	2,176
European Social Fund (ESF)	696	753	552	847
Cohesion Funds	270	204	461	706
<i>Structural Funds Subtotal</i>	<i>2,569</i>	<i>2,223</i>	<i>3,043</i>	<i>3,729</i>
<b>Agricultural Funds</b>				
European Agricultural Guidance and Guarantee Fund (EAGGF)	1,144	1,172	1,132	1,054
European Agricultural Fund for Rural Development (EAFRD)	-	-	207	415
<i>Agricultural Funds Subtotal</i>	<i>1,144</i>	<i>1,172</i>	<i>1,338</i>	<i>1,469</i>
<b>Fisheries Funds</b>				
Financial Instrument for Fisheries Guidance (FIFG)	18	43	22	16
Fish Ecosystems Plan (FEP)	-	-	9	16
<i>Fisheries Funds Subtotal</i>	<i>18</i>	<i>43</i>	<i>31</i>	<i>32</i>
<b>Miscellaneous Funds</b>				
Other	32	52	4	1
<b>Total</b>	<b>3,763</b>	<b>3,489</b>	<b>4,416</b>	<b>5,232</b>
<b>As % of Total Central Government Tax Revenue</b>	<b>n.a.</b>	<b>n.a.</b>	<b>9.3%</b>	<b>10.5%</b>

Source: MFAP (2008b).

<sup>a</sup> Estimated

<sup>b</sup> Projected

"n.a." indicates not available.

Portugal is also able to avail itself of intergovernmental transfers from the EU Trans-European Networks—Transport fund (TEN-T). Monies from the TEN-T program are intended for transportation projects that promote access to and interconnection and interoperability of national transportation networks throughout the EU. The program is currently targeting “30 Priority Axes” in Europe for priority funding. Three of the program’s priority projects directly impact Portugal. These include the high-speed railway axis of southwest Europe (Priority Axes 3 and 19), the multimodal axis of the Iberian Peninsula with the rest of Europe (Priority Axis 8), and the freight railway axis from Portuguese container ports to Madrid and Paris (Priority Axis 16) (European Commission, 2005).

### *Transfers to Regional Government*

The regional development commissions (*Comissões de Coordenação e Desenvolvimento Regional, CCDR*) receive a large portion of their funding through intergovernmental transfers from both central government funds and EU Structural Funds administered by central government.<sup>50</sup> Table 14 outlines intergovernmental transfers to the CCDRs for the past two annual budget cycles.

<sup>50</sup> Approximately 18% of CCDR revenue (14.4 million euros) comes from revenue the regional development commissions collect themselves.



**Table 14. Intergovernmental Transfers to Regional Development Commissions, 2007-2008**

(in millions of euros)

Regional Development Commission	2007 <sup>a</sup>			2008 <sup>a</sup>		
	Source		Total	Source		Total
	Central Gov't	EU		Central Gov't	EU	
North (CCDR Norte)	11.2	6.9	18.1	12.8	11.2	24
Central (CCDR Centro)	9	4.1	13.1	9.9	5.8	15.7
Lisbon and Rio Tejo Valley (CCDR LVT)	12.1	4.5	16.6	13.5	6	19.5
Alentejo (CCDR Alentejo)	7.5	3.6	11.1	7.3	3.3	10.6
Algarve (CCDR Algarve)	4.9	2.8	7.7	5.2	3.7	8.9
<b>Total</b>	<b>44.7</b>	<b>21.9</b>	<b>66.6</b>	<b>48.7</b>	<b>30</b>	<b>78.7</b>

Sources: MFAP (2007a, 2008b)

<sup>a</sup> Projected

### *Transfers to Municipal Government*

Municipalities in Portugal can avail themselves of a series of intergovernmental grants from central government. A municipality can opt into a revenue-sharing arrangement with central government and it may be eligible for a series of equalization grants, capital grants, or both. There is very little restriction on how a municipality spends intergovernmental transfer revenues. Apart from capital grants, which are project specific, any other revenues can be split between recurrent or capital municipal budgets with the restriction that the revenue designated to the recurrent budget cannot exceed sixty-five percent of the amount the municipality receives from the Financial Equalization Fund, a horizontal equalization grant described below (Governo da República Portuguesa, 2007a).

### *Revenue Sharing*

In 2007, central government introduced a new revenue-sharing arrangement with municipal governments intended to spur competition among municipalities (J.F. Branco, personal communication, February 4, 2008). For the first time, municipalities were given the authority to vary the rate of the personal income tax (*Imposto sobre o Rendimento de Pessoas Singulares, IRS*), a central government tax, as applied to their citizens. In the revenue-sharing arrangement, central government will forego five percent of the annual IRS revenue generated by each municipality. Municipalities are subsequently faced with the decision of either (a) taking that five percent as municipal revenue or (b) taking less than five percent and refunding the remaining revenue to their constituents, thus lowering the effective personal income tax rate. Thus, municipalities can compete with one another by offering lower personal income tax rates to current and prospective citizens (i.e. "Tiebout" sorting).

Municipalities are permitted to vary the IRS tax rate on an annual basis, although the arrangement must be decided prior to the budget cycle in which the rates take effect (Governo da República Portuguesa, 2007a). In the most recent round of decisions, forty-two municipalities, the majority of which lie outside major metropolitan areas, opted to refund a portion of the IRS to their constituents in 2009 based upon remittances in 2008

(Anibal, 2008). This represents an effort on behalf of those municipalities to compete with other regions by offering lower overall tax rates.

#### *Horizontal and Vertical Equalization Grants*

The Financial Equalization Fund (*Fundo de Equilíbrio Financeiro, FEF*) and the Municipal Social Fund (*Fundo Social Municipal, FSM*) constitute the equalization mechanisms of the Portuguese intergovernmental transfer system. A complicated set of criteria defines how each municipality interacts with either fund, whether as a recipient of monies or a donor. The principal goal of the FEF is horizontal equalization whereas the FSM is oriented toward vertical equalization. Table 15 outlines the two funds.

The FEF is composed of two separate funds, the General Municipal Fund (*Fundo Geral Municipal, FGM*) and the Municipal Cohesion Fund (*Fundo de Coesão Municipal, FCM*). The FGM is designed to provide each municipality with the capacity for basic public service provision. The FCM, on the other hand, is a convergence fund designed to equalize capacity among municipalities. The Municipal Finance Law (*Lei das Finanças Locais*) outlines the methodology for calculating FEF funds. The total amount to be disbursed under the FEF is 25.3 percent of the average of the sum of revenues generated by the personal income tax (IRS), the corporate income tax (IRC) and the value added tax (IVA) (Governo da República Portuguesa, 2007a). The amount is subsequently split equally between the FGM and the FCM. In 2008, 1.9 billion euros were dedicated to the FEF (Governo da República Portuguesa, 2007c, p. 407).<sup>51</sup>

Five percent of the FGM is distributed equally among all municipalities. The remaining ninety-five percent is disbursed based upon a weighted population criterion (65%) as well as a criterion addressing municipal lands impacted by the national land conservation and environmental protection program known as *Rede Natura 2000* (30%). Presumably, this last criterion is intended to reimburse municipalities for foregone revenue due to the inability to develop the environmentally protected land.

In contrast, the criteria that define the FCM are more complicated than those of the other equalization grants. Two components drive the fund: a national measurement of per capita remittances of municipal taxes (*capacitação média nacional, CMN*) and a national social development index (*índice nacional de desenvolvimento social, IDS*). The CMN is calculated by summing the own-source tax revenue from every municipality in the country and dividing that sum by the national population. A similar figure is calculated for each municipality (*capacitação média do município, CMMi*). If the municipal tax remittance per capita for a specific municipality, the CMMi, is less than 0.75 times the CMN, that municipality will receive cohesion funds from the FCM. If the municipal tax remittance per capita is more than 1.25 times the national figure, it will be required to contribute to the FCM.

Once the contributions and disbursements based on the CMN have been accounted for, any remaining revenue is devoted to social development. The national per capita social development index (IDS) is based upon three equally weighted criteria. They include average lifespan, education level, and a health and comfort criterion that measures household connections to electricity, water delivery, and sewerage. A municipal per capita social development index (*índice municipal de desigualdade de oportunidades, IDO*) is also calculated and

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<sup>51</sup> It is unclear why this amount, 1.9 billion euros (from Lei n.º 67-A/2007), does not reflect 25.3% of the average of revenues collected by the aforementioned taxes as outlined in the 2008 Portuguese National Budget. Using those amounts, the FEF should total 2.4 billion euros (Governo da República Portuguesa, 2007c, p. 407; MFAP, 2008b, p. 121).

compared to the IDS. Any municipality with an IDO below the national-level IDS will receive cohesion funds from the FCM.

**Table 15. Horizontal and Vertical Equalization Grants of Portugal**

<b>Fund</b>	<b>Fixed Disbursements</b>	<b>Criteria</b>
<b>Financial Equalization Fund<sup>a</sup></b> ( <i>Fundo de Equilíbrio Financeiro, FEF</i> )	50.0%	To FGM
	50.0%	To FCM
<b>General Municipal Fund</b> ( <i>Fundo Geral Municipal, FGM</i> )	5.0%	Divided equally among all municipalities
	65.0%	Weighted measure of municipal population
	30.0%	Amount of territory affected by the national land conservation and environmental protection program, <i>Rede Natura 2000</i>
<b>Municipal Cohesion Fund</b> ( <i>Fundo de Coesão Municipal, FCM</i> )	-	Per capita remittances of municipal taxes; municipal versus national average
	Remainder	Social development index; municipal versus national average
<b>Municipal Social Fund<sup>b</sup></b> ( <i>Fundo Social Municipal, FSM</i> )	35.0%	Number of school children ages 15 or younger
	32.5%	Number of registered members in the municipal health network
	32.5%	Number of residents using municipal daycare centers, rest homes and drug abuse programs

Source: Governo da República Portuguesa (2007a).

<sup>a</sup> 25.3% of (IRS+IRC+IVA)/3.

<sup>b</sup> Fund amount determined by central government.

As the primary vertical equalization tool, the Municipal Social Fund (FSM) supports expenditures that were formerly the responsibility of central government, but have since been transferred to municipal control. These include public education, healthcare and community services such as daycare, rest homes for the elderly, and drug abuse programs. Unlike the FEF, funds for the FSM are not a function of tax revenue. Instead, central government sets the amount to distribute within each budget cycle. Municipalities receive funds based upon the number of school children aged 15 or younger in the municipal education system, the number of members in the municipal healthcare system and the number of individuals who utilize the aforementioned community services. In 2008, 151 million euros were allocated to the FSM (Governo da República Portuguesa, 2007c, p. 407). In contrast, the FEF budget (1.9 billion euros) is over twelve times the size of the FSM budget.

Table 16 outlines intergovernmental transfer revenues from central government to the municipalities of Lisbon, Porto, and Coimbra for the 2008 budget cycle. The table also expresses transfer revenues as a percentage of overall municipal revenue.

**Table 16. Projected Municipal Intergovernmental Transfer Revenues, 2008: Lisbon, Porto, and Coimbra**

(in thousands of euros)

Municipality	Intergovernmental Transfers				Total Revenue	Transfers as % of Total Revenue
	IRS <sup>a</sup>	FEF	FSM	Total		
Lisbon	60.7	1.8	0.1	62.6	546.0	11%
Porto	19.0	4.0	3.3	26.3	212.6	12%
Coimbra	10.3	6.0	1.5	17.7	128.7	14%

Source: Governo da República Portuguesa (2007c).

<sup>a</sup> All municipalities choose to take the full 5% of IRS revenue.

### Capital Grants

In addition to the revenue sharing and equalization grants, central government also issues grants to Portuguese municipalities for capital projects. The primary mechanism for capital grants is the national investment program known as the Central Administration Program for Development Investments and Expenses (*Programa de Investimentos e Despesas de Desenvolvimento da Administração Central, PIDDAC*). The PIDDAC combines national revenue with EU Structural Funds to channel investment to forty separate government programs intended to promote economic growth and sustainable development in Portugal. Unlike EU Structural Funds, however, PIDDAC funds are disbursed to all municipalities regardless of NUTS II eligibility. Table 17 highlights the five programs allocated the largest share of PIDDAC revenue in 2008. PIDDAC funds are transferred directly to the administrator of the capital project, whether it is a ministry within central government, a municipality, or a state-owned enterprise.

**Table 17. Program Priorities for Portuguese National Investment Program (PIDDAC), 2008**

(in millions of euros)

Program (Program Budget Number)	Revenue Source		Total	%
	National	EU		
Competitiveness for Rural Development and Fisheries (PO30)	144	356	500	13.9%
Transportation (PO24)	313	119	433	12.0%
Agriculture and Rural Development (PO22)	138	241	380	10.6%
Scientific and Technological Research and Innovation (PO02)	253	99	352	9.8%
Continental Rural Development (PO44)	26	209	234	6.5%
All Other	903	789	1,692	47.1%
<b>Total</b>	<b>1,778</b>	<b>1,813</b>	<b>3,591</b>	

Source: MFAP (2008b, p. 103).

In the municipal case, PIDDAC grants may provide the full budget for municipal infrastructure projects or they may be central government's portion of a co-financing agreement between central government and one or more municipalities. Under co-financing municipalities are asked to provide a portion of the project budget with own-source revenue before PIDDAC funds are released (J.C. Mourão, personal communication, February 8, 2008).

### *Transfers to Parish Councils*

Parish councils receive intergovernmental transfers from both central and municipal government. Central government has a formalized system, the Parish Council Financing Fund (*Fundo de Financiamento das Freguesias, FFF*), which draws revenue from 2.5 percent of the average of the sum of the IRS, IRC, and IVA taxes. Parish councils receive funds based upon the predominant land use typology within their boundaries (urban, medium urban, and rural), their population, and area. Five percent of the fund is disbursed equally among all parish councils. In 2008, central government anticipated disbursing approximately 198 million euros from the FFF (Governo da República Portuguesa, 2007c, p. 452).

Municipal governments also transfer funds to their parish councils. This size of the municipal transfers depends on the deconcentration of municipal government activity to the parish council. Apart from administrative funds, parish councils may receive additional monies to cover expenditures associated with operating daycare centers or maintaining public restrooms. Table 18 highlights the expected intergovernmental transfers for parish councils in the municipalities of Lisbon, Porto, and Coimbra.

**Table 18. Parish Council Intergovernmental Transfer Revenues, 2008: Lisbon, Porto, and Coimbra**

(in millions of euros)

Municipality	Intergovernmental Transfers			Number of Councils	Average per Council
	FFF	Municipal	Total		
Lisbon	5.8	22.5	28.3	53	0.5
Porto	2.6	4.6	7.2	15	0.5
Coimbra	1.7	4.4	6.1	31	0.2

Sources: Câmara Municipal de Coimbra (2007a, p. 307), Câmara Municipal de Lisboa (2007, pp. 44, 46), Câmara Municipal do Porto (2007, Anexo III), Governo da República Portuguesa (2007c, pp. 421, 431, 436).

### **User Fees**

Sub-national governments—municipalities and parish councils—are allowed to create and levy user fees on a variety of goods and services as well as activities that impact the public (e.g. construction). Central government itself does not utilize user fees as a revenue generating mechanism although state-owned enterprises do. At the municipal level, user fees represent a small portion of the total revenue generated by each municipality. Table 19 shows the anticipated user fee revenues for the municipalities of Lisbon, Porto and Coimbra in the 2008 budget cycle and expresses user fee revenue as a percentage of total municipal revenue.

**Table 19. Projected Municipal User Fee Revenues, 2008: Lisbon, Porto, and Coimbra**

(in thousands of euros)

Municipality	User Fee Revenue*	Total Revenue	User Fee Revenue as % of Total Revenue
Lisbon	64.1	546.0	12%
Porto	4.6	212.6	2%
Coimbra	4.3	128.7	3%

Sources: Câmara Municipal de Coimbra (2007a), Câmara Municipal de Lisboa (2007), Câmara Municipal do Porto (2007).

\*Does not include user fees from public transportation services.

The municipality of Lisbon features the most comprehensive set of user fees. Fees are levied on construction, retail operating licenses, drivers' licenses, vehicle inspection, solid waste removal, the use of municipal cultural and recreational facilities, the rental of municipal property, and advertising in the public realm (Câmara Municipal de Lisboa, 2005a). Other municipalities levy user fees on municipal healthcare facilities where they exist. Parish councils are able to levy user fees on services that municipal government has deconcentrated to them.

### Borrowing

Municipal governments are allowed to borrow money in order to support the regular government functions, fund capital projects, or stabilize municipal finances. Municipalities can borrow from any legal entity that is allowed to issue loans. Central government places limits, however, on the cumulative amount of debt a municipality can have in any given budget cycle.

Money borrowed to support regular government operations or fund capital projects is governed by the following criteria. Short-term debt, defined as debt to be repaid in one year or less, cannot exceed ten percent of all municipal revenue (taxes, FEF, IRS revenue sharing, etc.) in a given budget cycle. Medium-term debt, to be repaid in two to ten years, and long-term debt, to be repaid in ten years or more, cannot exceed total municipal revenue in a given budget cycle. A special exception is made for debts used to finance projects that are co-financed with EU Structural Funds from the European Regional Development Fund or the Cohesion Fund. In such cases, municipal debt cannot exceed 75 percent of the budget apportioned to the national public sector (central and municipal government). Municipalities in violation of the aforementioned criteria must reduce their overall debt by ten percent each budget cycle until they are in compliance. If the reductions are not put into effect, municipalities risk sanctions by central government (Governo da República Portuguesa, 2007a).

Municipalities in financial imbalance may also borrow without limit to stabilize finances.<sup>52</sup> They are required, however, to submit either a financial health plan (*plano de saneamento financeiro*) or a financial restructuring plan (*plano de reestruturação financeira*) with central government. The latter is reserved for governments in severe fiscal crisis. Both plans must outline how the municipality will reach fiscal solvency. The Ministry of Finance and Public Administration (MFAP) monitors this process and verifies that municipalities are following their respective plans. Municipalities that violate their own financial health plans through unsustainable practices are sanctioned by central government. Sanctions include a

<sup>52</sup> Articles 40 and 41 of the Lei n.º 2/2007 place limits on loan terms, but do not mention specific borrowing limits for loans intended to rebalance municipal finances.

reduction of intergovernmental support from central government and restrictions on future borrowing.<sup>53</sup>

Parish councils are also authorized to borrow. Cumulative debt cannot exceed ten percent of the parish council's grant from central government through the Parish Council Financing Fund (*Fundo de Financiamento das Freguesias, FFF*). Debt financing cannot exceed fifty percent of council revenue in the preceding year. Parish councils in violation of these criteria must reduce their overall debt by ten percent each budget cycle until they are in compliance.

#### **4.5 Analysis of the Portuguese Public Finance System**

The Portuguese public finance system is the product of over thirty years of democratic governance combined with the influence of over twenty years of membership in the European Union. The system has effectively devolved authority and fiscal autonomy to sub-national government despite the lack of a true regional governance system and maintained a hard budget constraint with municipalities. Challenges remain, however. Although the system is still relatively young, policy makers must resolve problems associated with the fiscal equivalence condition in public transportation and municipal police services, tax administration, and significant central level public debt. This section uses the framework created in Chapter 2 to provide an analysis of the Portuguese public finance system with respect to political ideology, fiscal federalism, and revenue-generating mechanisms.

##### **Political Ideology and the Public Services Portugal Provides**

As Section 2.2 outlined, cultural values and beliefs combine to form a political ideology toward government and its role in society. In Portugal, political ideology has seen rapid change as the nation has gone from authoritarian rule to democracy and membership in the EU in a very short period of time. Citizens have begun to move from the embeddedness side of the Schwartz framework to a more autonomous cultural value dimension.<sup>54</sup> This may be partially attributed to the influence of capitalism and its focus on the individual (Vasconcellos, 2001).

While chronicling the changes in political ideology that led to the Carnation Revolution is beyond the scope of this thesis, after the revolution political ideology was still in great flux. In the initial years after the Carnation Revolution, the government nationalized much of what had been provided by the private sector under the authoritarian corporatist rule. Since 1995, it has been attempting to reverse nationalization, but with mixed results (Wiarda & Mott, 2001).

The vestiges of authoritarian rule have created a great sense of contempt for central, if not municipal, government. Yet despite this contempt there exists a pervasive belief that the Portuguese government should provide a robust set of goods and services to its citizens. Furthermore, increased integration with the EU has brought pressure on government for the provision of more goods and services. Portuguese citizens are very attuned to the quality of

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<sup>53</sup> In late 2007, support from central government to the municipality of Gaia was reduced by 106,000 euros per month as a result of excessive municipal borrowing (Marmelo, 2007).

<sup>54</sup> Interestingly, the Portuguese language features the option to pronoun drop, which Licht, et al. (2007) determined to be an indicator of embeddedness.

life in other countries in the EU and consequently demand the same goods and services from their government that other countries provide their citizens.

Apart from citizen preferences, the EU itself has also had an effect on the provision of goods and services, which, in turn, has altered political ideology. Large infrastructure projects, for example, became much more practicable with access to EU Structural Funds. Municipal governments, especially, have begun to pursue EU investments through the Portuguese central government.

Still, in contrast to many of its European neighbors, the Portuguese public sector's involvement with public service provision is rather significant. The State Enterprise Sector (*Sector Empresarial do Estado, SEE*), for example, is made up of eighty-three state-owned companies that provide goods and services ranging from transportation to healthcare to public utilities. Political ideology in Portugal has, thus far, not required that government divest itself from providing these services and turn to the private sector.

### **Fiscal Federalism: Funding and Delivering Public Services in Portugal**

The Portuguese public finance system does an adequate job of expenditure assignment at the national and sub-national levels. The country has worked to devolve the appropriate authority and fiscal autonomy to sub-national governments in the tradition of fiscal federalism, maintain a hard budget constraint with municipalities, and, with the exception of transportation infrastructure and services and municipal police expenditures, respect the fiscal equivalence condition for public goods. Still, the lack of regional government creates a vertical structure of government that poses a challenge to service provision as well as democracy.

### ***Form of Government***

As Inman (Inman, 2007) indicates, Portugal is a unitary democracy. Although municipal governments are locally elected, they have no representation at the central level of government. Regional-level electoral districts elect members of parliament, yet those individuals represent no regional government. Despite several attempts, the governance system has failed to establish adequate regional representation.

The lack of regional government means that the provision of regional public goods falls to municipalities through the formation of municipal coalitions. Central government seems to have overestimated municipal governments' interest in taking on more regional roles, however. Despite legislation to enable the creation of municipal coalitions, very few have been established apart from the few special governments previously mentioned.

The lack of regional government also impacts the national political system with respect to democracy. Because members of parliament do not represent an autonomous jurisdiction of government, they cannot be held accountable, at least in the fiscal federalist tradition, for the provision of regional public goods and services. Furthermore, although most EU Structural Funds are administered at the regional level, they are eventually distributed to either central or municipal level governments, not regions.

There is a disconnect, therefore, between the members of parliament that an individual elects and the representation that individual can expect to receive from the elected. Members of parliament act more as agents of national-level political parties than as regional representatives; they can change very little in terms of the benefits their electoral districts receive from national or supranational sources. Democracy, as far as parliament is concerned, is therefore abrogated.



### *Decentralization*

Despite the difficulties surrounding regional governance, Portugal has been fairly successful in devolving authority and fiscal autonomy to municipal government. Municipalities have not always welcomed this, of course. The historical centralization of goods and services provision has created a cycle of sub-national dependence on central level support as described in Section 2.5.

As mentioned previously, Portugal has struggled over the past decade to maintain a balanced national budget. Twice, in 2002 and again in 2005, the nation was required to enter the “excessive deficit procedure” with the European Commission after the national fiscal deficit exceeded the three percent ceiling mandated by the Maastricht Treaty (OECD, 2006). Under the excessive deficit procedure, central government was required to adopt several measures, outlined in a series of Stability and Growth Programs, which were intended to lower the deficit. In addition to the commission-mandated measures, Portugal was encouraged to cut government expenditures where possible.

In an effort to cut costs, central government announced that it would significantly reduce funds to the PIDDAC investment program in the 2008 budget cycle (MFAP, 2007a). In 2007, national contributions to the PIDDAC funds increased by almost fifteen percent over contributions the previous year. In contrast, national contributions to the PIDDAC in 2008 were cut by over forty-three percent. Hardest hit were the nation’s municipalities that, overnight, saw their PIDDAC outlays reduced by as much as eighty-five percent (A. Monteiro, 2007).

Not surprisingly, the announcement and the consequent budget cuts that followed were not well received by most municipal governments in Portugal. Although the municipalities knew cuts were forthcoming, there was no indication that central government would reduce PIDDAC funds so dramatically when the 2008 National Budget was announced in the fall of 2007. Many municipalities and their parish councils were left with budget gaps they could not close.

The situation at the end of 2007 highlighted the level of dependence sub-national government had on central government in terms of intergovernmental fiscal relations. Although central government could have pursued a more gradual approach, the overall policy to reduce capital grants to municipal governments was sound. Implicit in the move was the expectation that municipal governments would use own-source revenue to fund capital projects, effectively reducing the flypaper effect and strengthening the fiscal equivalence condition at the local level. Furthermore, central government’s commitment to a hard budget constraint with municipalities has sent the message to municipalities that central government is serious. Despite the fact that many municipalities are still demanding intergovernmental capital support from central government, most know that their ability to extract significant support is limited.

Still, political ideology is not completely in central government’s favor. Municipalities continue to assert that central government has discriminated against their citizens (Câmara Municipal de Vila Viçosa, 2007). This assertion has important political implications. Municipal government is able to cast itself as the protector of the good of the people while maligning central government. In the citizens’ eye, it is central government not municipal government that is to blame for unfulfilled promises (D.A. Pires, 2008).

### ***Fiscal Equivalence***

Central government has done a fair job of establishing the fiscal equivalence condition with respect to decentralization. Municipalities are increasingly responsible for those goods and services that have localized benefits such as public schools, municipal waste delivery, water systems, parks and recreation, health care, and fire services. The Portuguese public finance system effectively links municipal benefits with revenue-generating mechanisms in most cases. There are two significant exceptions, however, where government has not observed the fiscal equivalence condition: public transportation services and police services.

In the former case, central government, not municipal government, funds public transportation services in the metropolitan areas of Lisbon and Porto. Interestingly, the fiscal equivalence condition is preserved with public transportation services *outside* of these two metropolitan areas. This will be discussed in great detail in the following two chapters. In the latter case, central government retains significant control over policing. Although municipalities can fund their own police forces, their power is greatly limited (see Footnote 45).

### **Public Sector Revenue Generation in Portugal**

The Portuguese public finance system utilizes a fairly traditional approach to public sector revenue-generating mechanisms. User fees, taxes, and intergovernmental transfers are the standard mechanisms used by the system. Tax assignment, for example, follows the consensus view as outlined in Section 2.4. Municipalities are able to levy taxes on land, real estate transactions, and, to a small degree, business activity. Central government is responsible for taxing all other revenue sources. As previously stated, Portuguese municipalities have a great deal of autonomy as compared to other unitary democracies in setting tax rates and tax bases for the taxes they levy.

### ***Tax Administration***

The devolution of government expenditures has not been matched with an equal commitment to devolving tax administration, however. Nor has there been any effort to make the tax administration process more transparent. As previously mentioned, all national and sub-national tax remittances are administered by central government. The current arrangement prevents municipalities from verifying the accuracy of the tax revenue transfers they receive from central government each month. Monthly tax transfers offer no means of (a) ascertaining the collection period that the revenue corresponds to or (b) cross-referencing municipal tax remittances with the amount of the transfer. This lack of transparency undermines central government's effort to decentralize. As municipal responsibility grows and central government support dwindles, a system of checks and balances will be necessary if central government continues to administer all taxes.

As central government reduces intergovernmental transfers to Portuguese municipalities, it must also prepare for the eventual reduction of support from EU Structural Funds. Portugal will be eligible for fewer funds as its economy grows and new EU Member States lower economic indicators for EU convergence. The strain on public sector funds in Portugal will only increase once EU funds decline.

### ***Debt***

This last point represents, perhaps, the single most important challenge for the Portuguese public finance system. The country's prospects for growth are among the

weakest in the EU yet its commitment to stabilizing public finances has not always been steadfast. For example, the 2005 Stability and Growth Programme for Portugal (required by the European Commission when the nation's public deficit exceeded three percent of GDP) sought to reduce the deficit to 2.6 percent of GDP by 2008 (OECD, 2006). Recent forecasts, however, set the 2008 deficit at 9.2 percent of GDP, a far cry from the goal set back in 2005 (IMF, 2007). Central government has yet to bring spending under control despite pressure from the EU.

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Despite problems with fiscal equivalence and tax administration, the Portuguese public finance system has proven fairly stable. Institutions, power structures (including hard budget constraints with municipalities), and the utilization of specific finance mechanisms have seen relatively moderate change in the past few years. Stability does not equate with sustainability, however. The large public sector debt continues to place significant strain on government activity and puts in doubt the government's ability to deliver public goods and services in the future.

Nowhere is this more true than in public sector transportation services. The majority of transportation activity in Portugal is financed by the central government and state-owned transportation enterprises rely on a soft budget constraint and continue to amass increasing debt. Government's ability to maintain this fiscal relationship is questionable. In the following chapter, this thesis will analyze the Portuguese surface transportation policy and finance system as a component of the general public finance system.



## 5 Surface Transportation Policy and Finance in Portugal

The Portuguese transportation system has seen an unprecedented change over the past decade as the nation has utilized EU Structural Funds in combination with national revenues to rehabilitate and expand road, rail and public transit systems. Additional change is forthcoming as the nation continues to pursue the expansion of the national highway network, increased freight capacity on the conventional rail network, and the country's first high-speed rail connection to Western Europe. This chapter will provide an in-depth overview of the Portuguese surface transportation system. Subsections will describe the principal government organizations involved in planning and financing transportation investments, outline the characteristics of the Portuguese road, rail and public transit systems, and discuss national and sub-national approaches to transportation finance.

### 5.1 Transportation Administration

Three ministries within central government coordinate the majority of transportation planning and financing activity taking place in Portugal: the Ministry of Finance and Public Administration (*Ministerio das Finanças e da Administração Pública, MFAP*), the Ministry of Public Works, Transportation and Communications (*Ministerio de Obras Públicas, Transportes e Comunicações, MOPTC*), and the Ministry of Environment, Spatial Planning and Regional Development (*Ministério do Ambiente, do Ordenamento do Território e do Desenvolvimento Regional, MAOTDR*). Coordinating transportation planning activity was traditionally a laborious process. In an effort to streamline and overhaul some central government operations, several ministries, including those just mentioned, are involved in the Program for Restructuring Central State Administration (*Programa de Reestruturação de Administração Central do Estado, PRACE*).

At the sub-national level, individual municipalities have departments dedicated to transportation planning. This mainly impacts the local road networks for which municipalities are responsible and may include activities related to road construction, signalization, sidewalks and the adoption of specific road safety measures.

#### Central Government Ministries

The Portuguese Ministry of Finance and Public Administration (MFAP) has both an advisory and an administrative role in authorizing and subsequently disbursing recurrent or capital funds for transportation activity. One of MFAP's key responsibilities is control of the State Enterprise Sector (*Sector Empresarial do Estado, SEE*), a consolidated budget and management effort directed at the eighty-three companies, known as "state-owned enterprises," that are owned and operated by central government. The eventual goal of the SEE is to privatize or sell the state-owned enterprises. This process has been successful in some sectors, namely healthcare, but significantly less progress has been made with the ten surface transportation companies operating under control of the SEE (MFAP, 2007e).<sup>55</sup>

MFAP coordinates directly with the Ministry of Public Works, Transport and Communication (MOPTC), which is primarily responsible for planning and regulating transportation activities in Portugal. Two secretaries of state operate within the MOPTC,

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<sup>55</sup> A notable exception was the SEE's liquidation of SILOPOR, a state-owned enterprise that managed port storage facilities, in 2006 (MFAP, 2007e)

each responsible for a specific set of transportation modes. The Secretary of State for Public Works and Communication (*Secretário de Estado Adjunto das Obras Públicas e das Comunicações, SEAOPC*) is responsible for road and air transportation while the Secretary of State for Transportation (*Secretária de Estado dos Transportes, SET*) oversees rail and public transportation planning and operations as well as ports and maritime planning. The two entities operate independently from one another. The minister of MOPTC and his or her staff must coordinate any joint activity between the two secretaries of state (E.B. Pires, personal communication, August 2, 2007).

The Ministry for Environment, Spatial Planning and Regional Development (MAOTDR) is responsible for coordinating land use planning and environmental protection at all levels of government. Municipalities, for example, must submit comprehensive land use plans that follow the guidelines and goals of MAOTDR. The ministry is also responsible for the regional development commissions (CCDRs) and incorporates the intergovernmental transfers to the CCDRs as part of its annual budget.

### ***Restructuring Central Government***

In 2005, the Portuguese government passed legislation intended to eliminate overlap between existing organizations within central government as well as create new organizations to facilitate government activity (Governo da República Portuguesa, 2005). Known as the Program for Restructuring Central State Administration (*Programa de Reestruturação de Administração Central do Estado, PRACE*), the program was phased over a series of two years. Although the PRACE was officially implemented by the end of 2007 there are still many loose ends to be dealt with.

Of the ministries conducting transportation planning and financing, the MOPTC was affected the most by the PRACE. The most sweeping reform involved merging the nation's rail regulator with the surface transportation and ferries regulator and the office of licensing and traffic safety. In the summer of 2007, the National Institute of Rail Transportation (*Instituto Nacional do Transporte Ferroviário, INTF*), the Directorate General of Land and Water Transportation (*Direcção-Geral dos Transportes Terrestres e Fluviais, DGTTF*) and the Directorate General of Traffic (*Direcção-Geral do Viação, DGV*) were combined to become the Institute of Mobility and Land Transportation (*Instituto da Mobilidade e dos Transportes Terrestres, IMTT*). This large entity is responsible for regulating private and public surface transportation companies in all municipalities (subway, bus, light rail, and freight and passenger rail) and for national road safety, vehicle registration, and drivers' licenses.<sup>56</sup>

Although the aforementioned organizations have been combined on paper, they continue to maintain separate identities and have yet to integrate their staffs. While the PRACE is meant to eliminate institutional overlap, it is unclear whether the program will also eliminate the employees that produce this overlap. This represents one of the more politically challenging aspects of streamlining government activity.

In addition to the new surface transportation regulator, a new regulator for roadway concessions, the Institute of Roadway Infrastructure (*Instituto de Infra-Estruturas Rodoviárias, INIR*) was also created as a result of the PRACE. All future roadway concessions will fall under the purview of INIR, while current contracts being administered and regulated by the

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<sup>56</sup> Ferry regulation was not passed on to IMTT, but to the Institute of Ports and Maritime Transportation (*Instituto Portuário e dos Transportes Marítimos, IPTM*).

national highway authority, *Estradas de Portugal* (EP), will be transferred to INIR at some unknown date in the future.

## 5.2 Surface Transportation in Portugal

The following sections outline the primary characteristics of the road, rail, and public transportation systems in Portugal. The country has leveraged the private sector to undertake a large expansion and modernization of the national road network. It also plans to use private sector investment to construct and operate the nation's new high-speed rail system, which is currently in the planning stages. Despite policies that have promoted comprehensive road planning since the mid 20<sup>th</sup> Century, government decision makers have seen no need to conduct comprehensive rail (conventional plus high speed) rail or public transportation planning.

The majority of surface transportation investments are coordinated by central government through the ten surface transportation companies that are operated through the State Enterprise Sector (*Sector Empresarial do Estado, SEE*) as state-owned enterprises. Municipal-level transportation investment is limited to locally managed road systems and municipally owned public transportation systems where they exist.

### The Portuguese Road System

Portugal has a road network of approximately 16,000 kilometers of freeway and regional highways which is complemented by an additional 90,000 kilometers of municipal roadway (EP, 2007c). Portuguese roadways are classified into six distinct categories: Principal Routes (*Itinerários Principais, IP*), Complementary Routes (*Itinerários Complementares, IC*), National Roadways (*Estradas Nacionais, EN*), Regional Roadways (*Estradas Regionais, ER*), municipal routes, and declassified routes. The final category represents roadways that are in the process of being turned over from central government to municipal control.<sup>57</sup>

The IPs “connect...major cities, the ports between them, and the most important borderlands...[they] are complemented by a secondary network of links to the interior and to medium and small cities: ICs and ENs” (Fernandes & Viegas, 1999, p. 23). IPs and ICs make up the most important segments of the Portuguese road network and represent what would most likely be characterized as freeways and major highways. ENs and ERs are much less important links in the system.

As in other countries, roadways in Portugal are assigned particular numbers for identification purposes. In addition to being designated an IP or IC, a Portuguese freeway is also assigned an “A” designation (the “A” standing for “*Auto-Estrada*”). A particular freeway can therefore be made up of various segments of IPs and ICs or vice versa. The IP1, for example, forms part of the A1, A2, A3 and A22 freeways.

### Operation and Maintenance

As indicated in Table 20, the majority of the Portuguese road network is operated and maintained by either municipal governments (85%) or the national road authority, *Estradas*

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<sup>57</sup> Before agreeing to take control of any declassified routes, some municipalities request that *Estradas de Portugal* (EP) make improvements to the declassified roadways and fund future maintenance. In most cases, EP is not in a position to comply, leaving the majority of declassified routes in a political limbo (R.N. Dinis, personal communication, August 1, 2007).

de Portugal (EP), a state-owned SEE company (13%). Twelve private concessionaires under contract with EP manage the remaining two percent of the road network, which accounts for almost three-quarters of the principal road network in Portugal (IPs and ICs) (EP, 2007a). A common tolling system, *Via Verde*, is used on all directly tolled facilities (roads and bridges) in the country. The *Via Verde* system can also be used to pay parking fees and purchase gasoline from affiliated garages and gas stations. Figure 3 offers a map of the Portuguese road network, highlighting the principal network of IPs and ICs.

**Table 20. Portuguese Road Network, 2007**

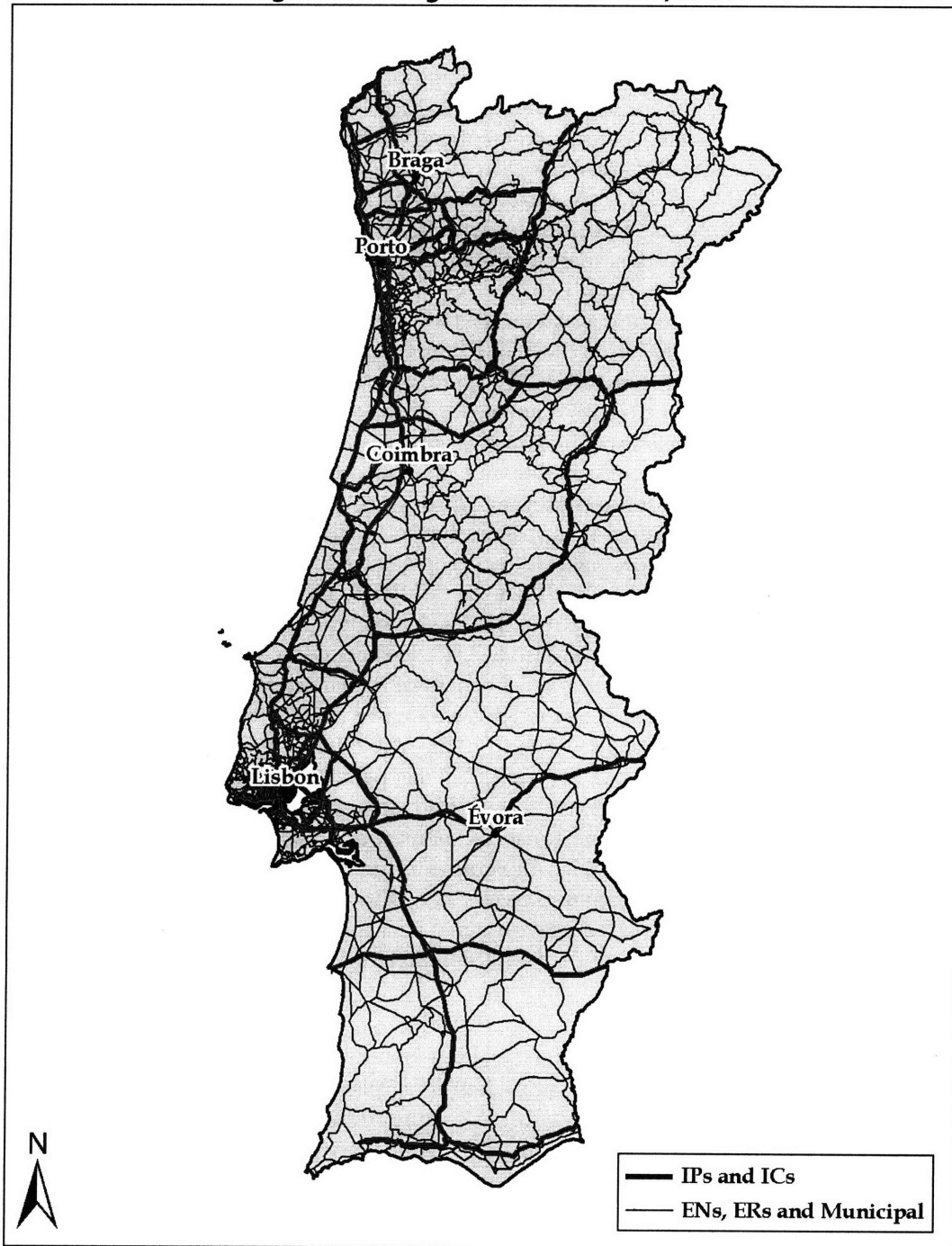
Designation	Managing Entity	Kilometers	% of Total Network
<b>National Network</b>			
IP	EP	497	
	Concessionaires	1,664	
	<i>IP Subtotal</i>	2,161	2%
IC	EP	520	
	Concessionaires	865	
	<i>IC Subtotal</i>	1,385	1%
EN	EP	4,910	
ER	EP	4,500	
Declassified	EP	3,233	
<i>EP Subtotal</i>		13,660	13%
<i>Concessioned Subtotal</i>		2,529	2%
<b>National Subtotal</b>		<b>16,189</b>	<b>15%</b>
<b>Municipal Network</b>			
Municipal	Municipalities	90,000	85%
<b>Total Network</b>		<b>106,189</b>	

Source: Adapted from EP (2007c).

Since the first road concession was tendered in 1997, Portugal has seen its share of successes and failures in public private partnerships for roadways. Road infrastructure concessioned under the “real toll” revenue generation model—where drivers are directly charged a user fee to use the road—has been widely regarded as a successful approach to fast and efficient road infrastructure development (Monteiro, 2005). However, roads operated under “shadow toll” concessions have failed to provide their intended benefit. Use of the model, which requires the government, not individual drivers, to pay the concessionaire for road use, has placed a significant and unexpected financial burden upon central government.



**Figure 3. Portuguese Road Network, 2007**



### ***Shadow Tolls***

Seven of the twelve private road concessions (approximately 35% or 910 km of the concessioned network) are operated under shadow toll concessions, which were tendered as early as 1999 (MOPTC, 2006a). Travel demand on the shadow tolled roads (known by their Portuguese acronym as SCUTs, *sem custo para o utilizador* or “without cost for the user”) was much higher than projected, consequently forcing the government to pay concessionaires much larger sums than forecasted (J. Portela, personal communication, July 31, 2007). Between 2008 and 2015, central government is expected to pay over 6 billion euros to SCUT concessionaires. In contrast, payments to real toll concessionaires will total just over 550 million euros for the same period. Shadow toll costs will therefore be over ten times real toll costs (MFAP, 2008b, p. 170).

By 2004, central government realized the severity of the shadow toll situation and created a new finance model to lessen the SCUT burden on central government (R.N. Dinis, personal communication, August 1, 2007). This, too, proved unsustainable, and in 2005 central government initiated the complex and costly process of converting four of the seven existing SCUTs to real toll facilities (Anonymous,<sup>58</sup> personal communication, February 7, 2008). No roadways have been converted to date, therefore it remains to be seen whether the SCUT facilities will garner sufficient revenue through real tolls to make them sustainable endeavors. In the meantime, rather than rule out future applications of the shadow toll model, MOPTC developed a more rigorous methodology for identifying appropriate economic situations for future SCUTs in Portugal (MOPTC, 2006a).

In addition to underestimating the true cost of shadow toll concessions, there is evidence that central government authorized SCUTs detrimental to other road concessionaires, thus undermining the overall benefit of public private partnerships. In at least two cases, SCUTs have been constructed as alternatives to real toll facilities, which, in turn, has had the effect of diverting revenue from the real toll facility to the shadow toll facility.<sup>59</sup> The A17 freeway, for example, is a SCUT that parallels approximately 140 km of the A1 freeway, a real toll facility. The A28 also offers drivers a free alternative to the real tolls of the A3 freeway (R.N. Dinis, personal communication, August 1, 2007; J. Portela, personal communication, July 31, 2007). Government officials defend the practice, arguing that non-toll options must be offered to travelers along those specific stretches. Private concessionaires disagree, however, and have entered into litigation with EP in order to recoup the revenue lost as a result of the SCUT competition.

### ***Regulation***

Estradas de Portugal (EP), the national highway administrator, currently regulates roadway concessions. All future concessions, however, will be the purview of the new regulatory body, the Institute of Roadway Infrastructure (*Instituto das Infra-Estruturas Rodoviárias, INIR*), which was created in mid-2007 by the PRACE. As previously mentioned, there is an interest within central government to consolidate all existing concessions under INIR as well. This would be a very difficult undertaking, however. It is anticipated that many current concessionaires would call for renegotiated contracts or simply block the transfer of any concessions to the new regulatory body (R.N. Dinis, personal

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<sup>58</sup> Some transportation officials and public administrators would only agree to speak on condition of anonymity.

<sup>59</sup> Drivers see very little difference between levels of service on real toll facilities and SCUT facilities. More often they opt to drive for free on the SCUT rather than pay a toll.

communication, August 1, 2007). The plausible future, therefore, foresees EP and INIR regulating independent subsets of national roadway concessions until the former's share of concessions expires.

In addition to the organizational changes related to the PRACE, central government recently authorized EP to become a quasi-private organization (Governo da República Portuguesa, 2007d). This enables the national road administrator to bid for and be awarded roadway concessions. The proposal envisions central government "tendering" a large long-term concession to EP to operate approximately seventy to eighty percent of the current road network (with the exception of existing concessions and municipal roads). EP would have the option of managing the network itself or subcontracting specific roadways out to other concessionaires (R.N. Dinis, personal communication, August 1, 2007).

The proposal is largely viewed as a tactic to privatize public debt and therefore lessen the burden road construction places on the national deficit. The privatization of EP also raises two key conflicts of interest. First, private concessionaires could conceivably become major shareholders and control part of EP. If the government cannot transfer existing roadway concessions to INIR, however, EP would remain the regulator of those concessions, plausibly freeing the majority shareholders to regulate their own concessions. Second, with EP as a quasi-private concessionaire, there would be little recourse for central government if it were to contend or revoke the large long-term concession with EP. Because EP would not be entirely private, if central government were to sanction the authority it would be essentially sanctioning itself (J. Portela, personal communication, July 31, 2007; J.M. Viegas, personal communication, July 13, 2007).

### ***Planning***

The National Roadway Plan (*Plano Rodoviário Nacional, PRN*) guides all new road infrastructure planning in Portugal. The current iteration of the plan, the *PRN 2000*, follows two previous national roadway plans, the *PRN 1945* and the *PRN 1985*. Development of the plan lies principally with MOPTC, which coordinates with EP. Each year the two work together to review the plan and prioritize projects for the following budget cycle. As of 2007, approximately sixty percent of the projects identified in the *PRN 2000* had been completed (R.N. Dinis, personal communication, August 1, 2007).

While MOPTC prioritizes the planning and construction of new road infrastructure, EP is solely responsible for existing infrastructure. The authority is currently developing a mid-range plan, which identifies roadway safety, rehabilitation, and maintenance projects to be completed over the next five years. EP plans to release the plan in mid-2008 (Anonymous, personal communication, February 7, 2008).

### **The Portuguese Rail System**

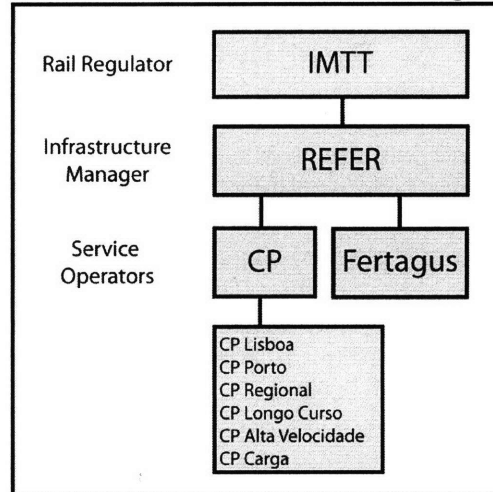
The Portuguese rail network serves over 650 station stops and extends approximately 2,800 kilometers, 1,400 of which are electrified (INE, 2006). While the conventional Portuguese network shares a common gauge with Spain (a distance between the rails of 1,668 mm, known as Iberian gauge), locomotives and rolling stock from Spain and Portugal are not interchangeable with the rest of Europe, which operates standard gauge rail networks (1,435 mm).

Demand for passenger rail service in Portugal has been steadily declining since at least 1990. Nationwide, passenger kilometers decreased by 36.6 percent between 1990 and 2003 although ridership growth was seen in some rail markets between 2004 and 2005. Freight

rail operations in Portugal are extremely limited. Between 1995 and 2003 freight rail accounted for no more than 2 percent of total freight transportation in the country. Despite the low mode share for freight, growth in ton kilometers increased 11 percent between 2000 and 2005 (MOPTC, 2006b). The potential future growth for freight rail has spurred both the EU and Portugal to increase rail freight capacity by constructing new rail lines to Portugal's largest container port, the Port of Sines, and several intermodal freight facilities near the Spanish border (European Commission, 2005; RAVE, 2007). No private rail operators have entered the Portuguese rail freight market to date.

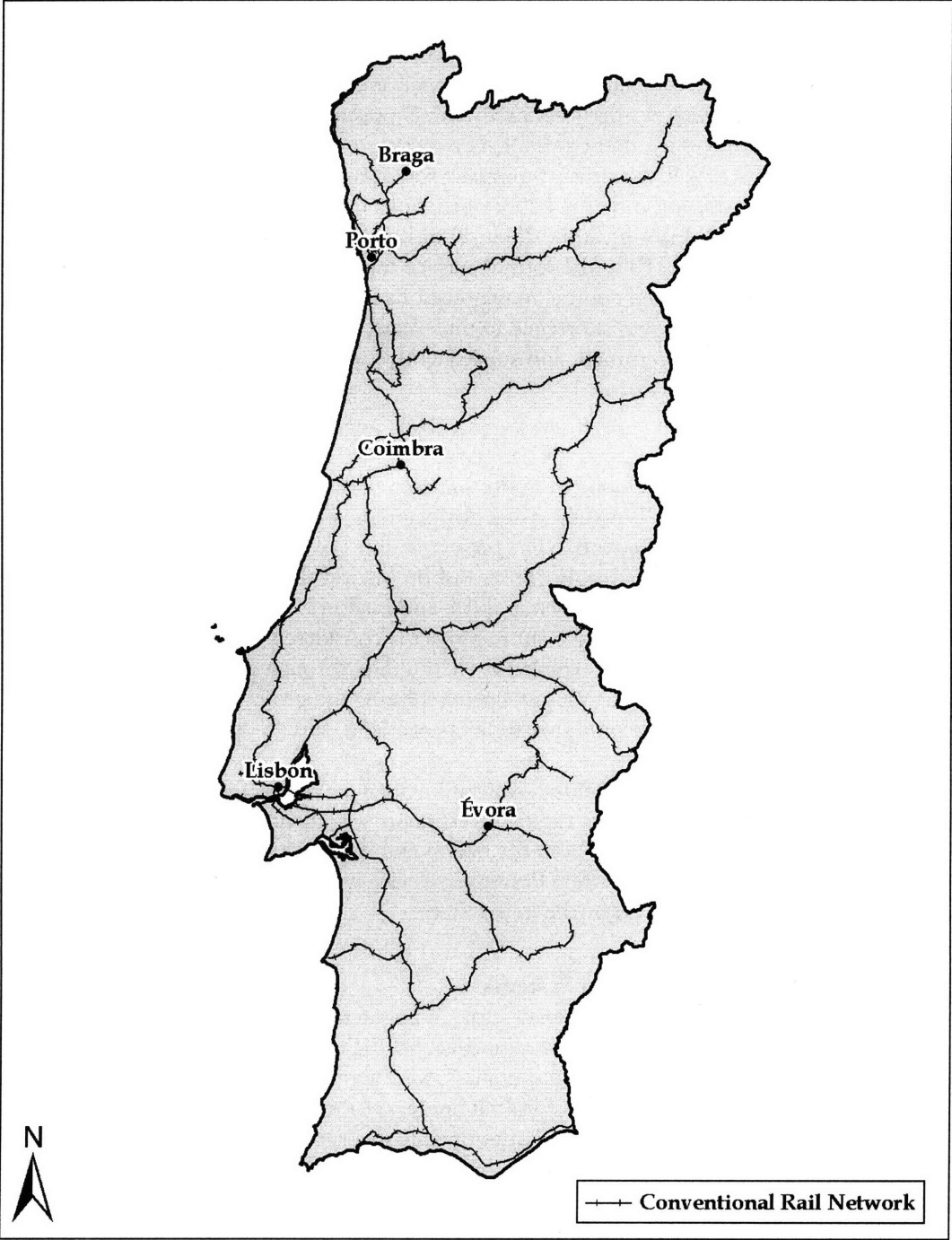
Rail transportation in Portugal has undergone major regulatory changes over the past several years as the country has taken steps to liberalize the sector in response to European Commission legislation.<sup>60</sup> Regulation of the Portuguese rail sector is the responsibility of the newly created Institute of Mobility and Land Transportation (*Instituto da Mobilidade e dos Transportes Terrestres, IMTT*) while National Rail Network (*Rede Ferroviária Nacional, REFER*) owns, maintains and schedules use of the nation's rail infrastructure. The primary freight and passenger rail operator is *Comboios de Portugal (CP)*. Originally a private company dating from the late 1800s, CP was nationalized in 1975 as a state-owned enterprise and the sole operator of rail service in the country. Portugal continued with this model until 1997 when EU rail liberalization efforts required that CP shed its ownership and control of rail infrastructure to the newly created REFER (Steer Davies Gleave, 2003). Portugal has seen little private interest in launching rail service in the country with the exception of the Fertagus commuter rail line that operates in metropolitan Lisbon. Figure 4 provides an overview of the Portuguese rail sector's institutional architecture.

**Figure 4. Institutional Architecture of the Portuguese Rail Sector**



<sup>60</sup> Rail liberalization under EU regulations requires the separation of rail infrastructure—track, signals, station facilities, and so forth—from rail operations. In the case of nationalized rail systems, the national rail operator must divest itself of all rail infrastructure and turn the assets over to a new infrastructure management company. Once rail infrastructure has been divested, entry into the national rail market is opened up to private operators as well as the incumbent national operator. Any operator wishing to use the rail infrastructure, namely tracks, must request an operating slot from the infrastructure manager, pay the associated access fees, and use its own equipment—locomotives and rolling stock—to transport goods or passengers. All of this activity is coordinated by a national rail regulator, an independent body which certifies operators for safety, sets access fees, and ensures competitive and fair access to the rail market.

Figure 5. Portuguese Conventional Rail Network, 2006



### **Operators**

As previously mentioned, CP handles the majority of rail activity in Portugal. On the passenger rail side, CP segments its operation into several divisions as indicated in Figure 4. The rail company operates commuter rail service in the Lisbon and Porto metropolitan areas (*CP Lisboa, CP Porto*) as well as nationwide regional and long distance intercity service (*CP Regional, CP Longo Curso*). The two remaining divisions within the company, *CP Carga* and *CP Alta Velocidade*, operate the railroad's freight service and coordinate high speed rail planning with *Rede Ferroviária de Alta Velocidade (RAVE)*, respectively.

Apart from CP, only one other operator, Fertagus, provides passenger rail service in Portugal as of 2008. In 1999, the private company was awarded a 30-year concession to operate the *Eixo Norte Sul* commuter rail line, which links the municipalities on the southern bank of the Rio Tejo with Lisbon via the 25 de Abril Bridge. In light of unrealized demand projections, Fertagus and DGTTF (the former surface transportation regulator that has since been replaced by IMTT) entered contract renegotiations in 2005. As a result of renegotiation, the concession was shortened to nine years, and Fertagus was allowed to sell its rolling stock to central government and subsequently lease it back (G. Freitas, personal communication, August 3, 2007).

### **High Speed Rail**

The most noteworthy development in Portuguese rail transportation is the nation's high-speed rail initiative. RAVE is responsible for planning and tendering the construction and operation of this new rail network. The project features over 550 kilometers of high speed rail lines divided into three priority links: Lisbon Madrid (Lisbon to the border with Spain) and Porto Vigo, scheduled to open in 2013; and Lisbon Porto, scheduled to open in 2015. Budgeted at 7.1 billion euros, the entire project is considered one of the EU's priority transportation axes and is therefore eligible for EU funding through the TEN-T program (European Commission, 2005). RAVE anticipates splitting the project into five construction concessions, a signaling and telecommunications concession, and an operating concession (RAVE, 2007).<sup>61</sup>

Portugal will continue to maintain its conventional rail network (see Figure 5) once the high-speed rail system opens. Future capital investments will channel additional freight traffic to the conventional system as both the nation and the EU look to reduce the adverse impacts of ever-increasing truck traffic. Passenger service will also continue to operate in those areas that will not be served by the new system.

### **Portuguese Public Transportation Systems**

MFAP, MOPTC, and IMTT each play a role in public transportation service provision in Portugal. MFAP coordinates financial assistance, MOPTC coordinates planning, and IMTT regulates all public transportation providers, whether they are state-owned enterprises or private companies. IMTT sets fares for each mode, certifies companies for operation in Portugal, and grants each company the right to operate in a service area defined by the regulator.

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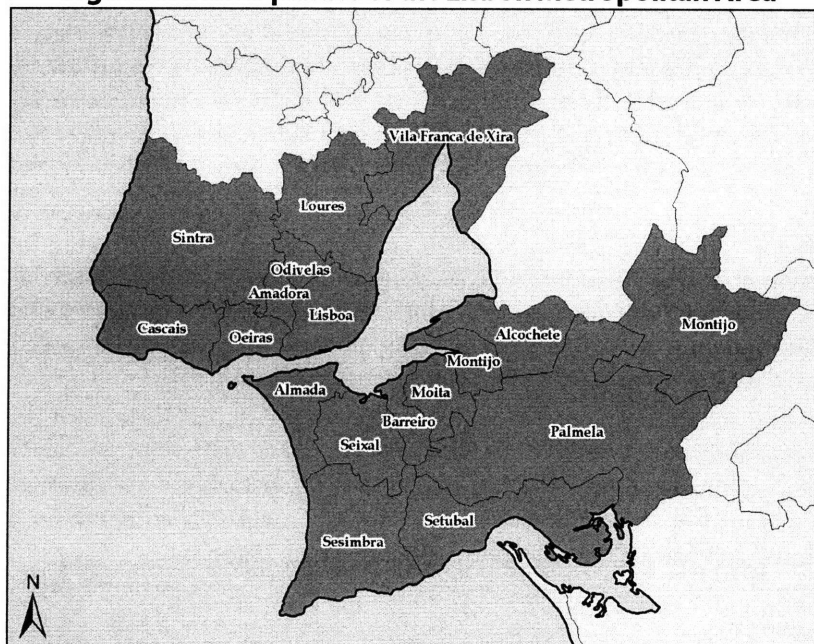
<sup>61</sup> RAVE plans to build the Porto-Vigo line in Iberian gauge and operate it as a conventional system until demand warrants high speed service. Once that happens, the line will be shut down, converted to standard gauge operation and reopened as an integrated link in the Portuguese high speed rail network. This cost is not incorporated into the 7.1 billion euro project budget (G. Freitas, personal communication, August 3, 2007).

The provision and financing of local-level public transportation services in Portugal varies widely throughout the nation. State-owned enterprises under the SEE, which receive exclusive funding from central government, provide public transit service to the country's largest metropolitan areas. Other municipalities outside these metropolitan areas must finance their own transit systems either through a municipally owned company or service, or an operating contract with a private company. The following subsections will highlight public transportation in the nation's metropolitan areas as well as a few smaller cities of note.

### *Lisbon Metropolitan Area*

The Lisbon metropolitan area features an extensive public transit network of bus, subway, tram and light rail services, the majority of which are operated by state-owned SEE enterprises. The SEE companies have an exclusive monopoly within their service areas. Outside of those service areas, however, a burgeoning number of private operators provide supplementary bus services. Most operations focus on facilitating trips in and out of the Lisbon central business district, although housing and employment trends have spurred the growth of public transit systems in areas such as the south bank of the Rio Tejo. Figure 6 provides a map of the Lisbon metropolitan area.

**Figure 6. Municipalities of the Lisbon Metropolitan Area**



As of early 2008, there were 408 different ticket combinations sold by public transportation companies in the Lisbon metropolitan area (C.S. Bentes, personal communication, February 8, 2008). The process of integrating fares among the individual public transit companies has been difficult. The principal bus company and subway operator offer an integrated monthly pass, the *Lisboa Viva* card, but this does not extend to single trips. The subway operator also sells a joint pass with the main ferry company. Still, each public transit operator continues to develop exclusive fare media and fare collection plans.

Apart from the role that IMTT plays in defining service areas, very little regular and coordinated planning is conducted among Lisbon's public transit operators. Planning is therefore coordinated on an "as needed" basis. The most notable recent effort is an extensive, multi-year service change, known as *Rede 7*, which MOPTC has coordinated with Lisbon's principal bus operator. The project is intended to integrate bus service with the existing subway system.

#### *Bus Operations*

The largest public transit company in Lisbon is the *Companhia Carris de Ferros de Lisboa*, referred to as *Carris*. Originally founded in 1872 as a private company, Carris is now a state-owned SEE enterprise. In 1973, the company was granted a fifty-year "right to operate" in the municipality of Lisbon (C.S. Bentes, personal communication, February 8, 2008). That right is currently administered by IMTT.

Carris operates a 660-kilometer bus network as well as a 48-kilometer tram network. Most of the company's operations are concentrated within the municipality of Lisbon, although the company does operate some peripheral services to neighboring municipalities that are part of the metropolitan area. With over 750 buses dispatched out of three bus barns and an additional tram barn dispatching 58 vintage and modern trams, Carris provides the lion's share of public transportation for the citizens of Lisbon. A single fare on either network is 1.35 euros (Carris, 2008).

In 2006, the company launched the first phase of the *Rede 7* service change, altering forty percent of its routes (Boaventura, 2006). The second phase was launched in January 2008. Carris also began a full modernization of its fleet in 2006. The modernization project is scheduled to continue for several years and will eventually lower the average fleet age to between five and six years (C.S. Bentes, personal communication, February 8, 2008).

#### *Subway Operations*

*Metropolitano de Lisboa* (ML) operates the Lisbon subway system, which serves the municipalities of Lisbon, Odivelas, and Amadora. Like Carris, ML is a state-owned SEE enterprise. The system has 46 stations along a 38-kilometer network and uses 338 heavy rail vehicles (ML, 2008a). A single fare begins at 0.75 euros (ML, 2008b).

#### *Commuter Rail Operations*

CP Lisboa operates commuter rail service in the greater Lisbon area. Service originates from Lisbon's four main train stations—Cais do Sodré, Estação Oriente, Rossio, and Santa Apolónia—to the suburbs of Cascais, Sintra, Azambuja and Sado.

#### *Ferry Operations*

*Transportes Tejo* and *Soflusa*, known collectively as *Transtejo*, operate five ferry routes across the Rio Tejo, linking the municipalities of Almada, Seixal and Barreiro with Lisbon. Transtejo is also a state-owned company operated through the SEE. The company operates thirty-eight passenger and car ferries from nine separate terminals, offering single fares that range from 0.77 to 2.25 euros depending upon the route (Transtejo, 2007, 2008).



### *Light Rail Operations*

The *Metro Sul do Tejo* (MST) is the most recent addition to the Lisbon metropolitan area. The company initiated service on April 30, 2007. Envisioned as a 28-kilometer, 37-station light rail system that connects the municipalities of Almada, Seixal and Barreiro on the south bank of the Rio Tejo, it has been plagued by political infighting since construction began in 2005. Prior to December 2007, only four kilometers of the system were operable due to construction delays caused by the municipality of Almada. The municipality held up the project in an effort to secure amenities—park and ride facilities, pre-emptive traffic signals, and public parks—that were not a part of the original proposal.

The MST is not a state-owned enterprise. In 2002, a private consortium was awarded a thirty-year concession to design, build and operate the MST project (D. Neves, personal communication, February 12, 2008). Demand on the MST system has thus far been extremely low. Local media outlets and public officials question whether the system will garner the ridership projected in the initial proposal. In September 2007, *Diário de Notícias*, one of Lisbon's principal periodicals, reported that the MST was carrying an average load of four passengers per vehicle trip at a cost to the government of fifteen thousand euros a day (C. R. Monteiro, 2007). It is unclear, however, exactly how the concession is structured in terms of revenue shortfalls. In January 2008, the consortium was no longer providing ridership numbers to the public (Gouveia, 2008). A single fare on the MST is 0.85 euros (Metro Transportes do Sul, 2008).

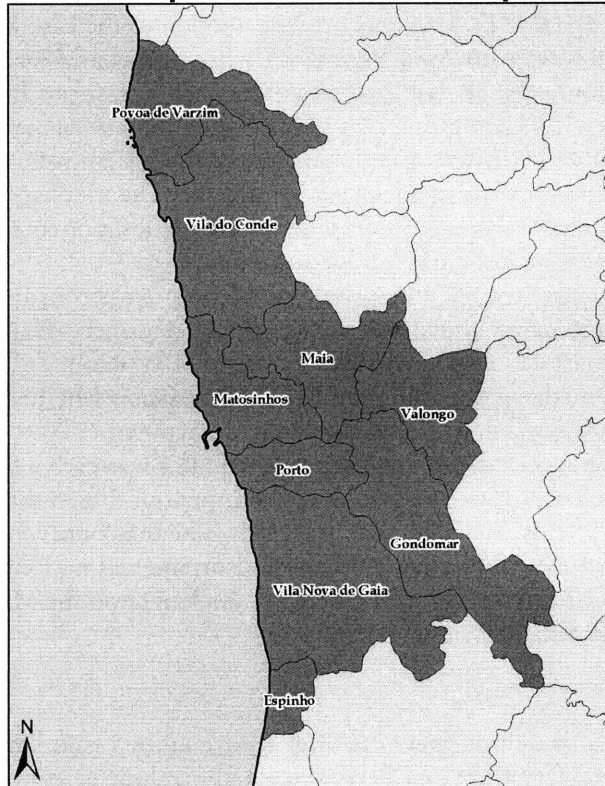
### *Private Operators*

At least fourteen private bus operators offer service in the Lisbon metropolitan area. These companies are regulated by IMTT, receiving authorization from the agency to operate in specific areas of the municipalities that make up the metropolitan area. Private operators primarily supplement service provided by Carris; they are not allowed to directly compete against the state-owned enterprise. As recently as 2005, private operators were subjected to fare freezes ordered by central government via IMTT. A special subsidy from MFAP compensates private operators for cost increases in light of fare regulation (R. Macário, personal communication, August 2, 2007).

### *Porto Metropolitan Area*

Although smaller than the capital of Portugal, Porto still offers a large array of bus and light rail public transportation services. Porto is similar to Lisbon in that the majority of its transportation services are operated by state-owned SEE enterprises, however, it has been more successful than Lisbon in integrating fares among its different operators. In 2003, transportation operators in the metropolitan area joined with one another to form Intermodal Transportation of Porto (*Transportes Intermodais do Porto, TIP*) with the intention of designing and launching an integrated fare card. Two years later TIP unveiled the *Andante* integrated fare card, a contactless card that is accepted by the main bus and metro operators in Porto, the commuter rail service operated by CP and five additional private bus operators (TIP, 2008). Figure 7 provides a map of the Porto metropolitan area.

**Figure 7. Municipalities of the Porto Metropolitan Area**



#### *Bus Operations*

The *Sociedade de Transportes Colectivos do Porto* (STCP), a SEE enterprise, uses 500 buses to operate 81 routes over a network of nearly 500 kilometers. In addition to bus service STCP operates a five-line tram network with eight trams (STCP, 2007). A single fare on the system (sold in roundtrip increments only) is 1.65 euros (STCP, 2008b).

#### *Light Rail Operations*

Construction on the *Metro do Porto* (MP) system began in 2003 with the last phase of the fifty-eight kilometer light rail network being completed in the spring of 2006. The system serves 69 stations in the municipalities of Porto, Vila Nova de Gaia, Matosinhos and Maia (MP, 2008b). A single, one-zone fare on the system is 0.90 euros (MP, 2008c). The *Metro do Porto* is a state-owned SEE enterprise.

#### *Commuter Rail Operations*

CP Porto operates commuter rail service in the greater Porto area. Service originates in Porto's two main train stations—São Bento and Campanhã—and extends to the surrounding municipalities of Aveiro, Braga, Marco and Guimarães.

#### *Private Operators*

Over thirty private bus operators provide service in the Porto metropolitan area. Just as service providers in Lisbon, the Porto bus operators must be certified through IMTT and

are subsequently authorized to operate in specific service areas. They are not allowed to compete directly with STCP, the principal bus provider in Porto and a state-owned SEE enterprise.

### ***Coimbra***

A municipally operated bus service makes up the bulk of the public transit services in the municipality of Coimbra (population 142,400). Regional rail service offered by CP provides additional links between outlying municipalities and the Coimbra central business district. A proposal to build a new regional tram-train operation with a terminus in Coimbra may see the central government focus investment funds for public transportation into the area for the first time.

#### ***Bus Operations***

*Serviços Municipalizados de Transportes Urbanos de Coimbra* (SMTUC) is a municipally operated public transportation service (*serviço municipal*) that operates a fleet of 120 buses over a network of 495 kilometers. SMTUC is not a state-owned enterprise and receives all funding from the municipality of Coimbra.

#### ***Tram-Train Operations***

The *Metro Mondego* (MM) in Coimbra is the only new urban rail project proposed outside of the Lisbon and Porto metropolitan areas in recent years. Although it is still under development, the project proposes the conversion and extension of an existing CP commuter rail service into a 40-kilometer tram-train operation that connects the municipality of Coimbra with several surrounding municipalities. The project was proposed in 2003, but political infighting prevented it from moving forward at that time. The proposal was revived in 2006 when Metro Mondego was officially made a state-owned enterprise and responsibility for the project was transferred from the Secretary of State for Transportation to REFER and CP (A. Seco, personal communication, February 1, 2008).

The Metro Mondego project is currently being planned in two phases. The first phase will rehabilitate CP's existing 27-kilometer right-of-way, which currently links all of the municipalities to be served by the new system. The second more intensive phase will construct thirteen kilometers of new right-of-way in downtown Coimbra. Phase One is to be completed in 2010; Phase Two is still in the planning stages.

Traditional funding sources (central government and EU Structural Funds) will be used to finance the project, although budget outlays have yet to be defined. The first five to six years of operation will be the responsibility of CP. After this initial period, the plan is for an operating concession to be tendered to the private sector (A. Seco, personal communication, February 1, 2008).

#### ***Other Municipalities***

With the exception of the Metro Mondego project in Coimbra, central government has no formal mechanism to support public transportation services outside of the metropolitan areas of Lisbon and Porto. Other municipalities must therefore finance public transportation services themselves. Most municipalities opt for bus services by either entering into operating agreements with private bus companies or opting to create and fund a municipally owned system.

The municipalities of Faro and Lagos, for example, are mid-sized coastal communities (population 58,000 and 27,000, respectively) in southern Portugal that have contracted with a private company, Eva Transportes, to provide urban fixed-route bus service (five and six routes, respectively). The company is a long-distance intercity bus operator, which has a division devoted to urban routes (Eva Transportes, 2007). In contrast, the municipality of Braga, a large community in northern Portugal with a population of over 170,000, has operated its own public transit system, *Transportes Urbanos de Braga*, for twenty-six years. The system comprises 78 routes and 113 buses operated over a network of 230 kilometers (Transportes Urbanos de Braga (TUB), 2007).

In summary, the majority of transportation activity in Portugal is conducted through the State Enterprise Sector (*Sector Empresarial do Estado, SEE*) and the ten surface transportation companies it manages: Estradas de Portugal; REFER; CP; RAVE; Carris, Metropolitano de Lisboa, and Transtejo in Lisbon; STCP and Metro do Porto in Porto; and Metro Mondego in Coimbra (MFAP, 2007e). Municipal activity is limited to road infrastructure investments and investments in and operation of municipal bus services.

### 5.3 Transportation Finance

Revenues used to finance transportation expenditures in Portugal primarily originate with central government. Central government uses an extremely limited stream of dedicated revenue for transportation-related investments, funding the majority of transportation expenditures through general revenue. Municipalities do not utilize any form of dedicated revenue for government expenditures, transportation-related or otherwise.

Since 2005, the Portuguese national budget has authorized a stream of dedicated tax revenue<sup>62</sup> for the national highway authority, Estradas de Portugal (EP). Beyond this, no additional dedicated revenue sources exist. All other government expenditures, including transportation investments outside of road planning and construction, draw funding from general tax revenue. The national budgeting cycle therefore features an extensive process of expenditure authorizations, as the various ministries of central government compete with one another for funds (Anonymous, personal communication, February 12, 2008). Municipal governments do not utilize dedicated revenues to fund government activities, which includes transportation investments.

On the expenditures side, the largest share of public sector transportation funding comes from central government. Funding is offered in the form of (a) operating subsidies (*indemnizações compensatorias*) disbursed directly to state-owned SEE enterprises, and (b) capital project grants transferred to SEE enterprises and municipal governments, and (c) EU Structural Funds earmarked for specific projects but administered by central government. Municipal governments provide operating and capital funds for municipal transportation departments and in-house public transit systems where they exist.

#### Revenue

Beginning in 2005, EP received a dedicated portion of the revenue generated by the Circulation and Haulage Tax (*Imposto de Circulação e Camoínagem, ICI, ICA*). This arrangement continued until the tax was abolished in 2007. A new dedicated revenue source was

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<sup>62</sup> “Dedicated revenues” are revenue sources tied to specific revenue generating mechanisms (taxes, user fees, etc.) and reserved for specific government expenditures.

subsequently authorized as part of the 2008 tax reform. This reauthorization dedicated a portion of the national Fuel Tax (*Imposto sobre os Produtos Petrolíferos, ISP*) revenue to EP, underlining that the funds could not be channeled to any other recipient sector (Governo da República Portuguesa, 2007b). Table 21 outlines the overall ISP tax rate as well as the rates apportioned to both central government and EP. Tax rates did not increase as a result of the tax reform.

The new arrangement provides EP a substantial increase in dedicated revenue. ICI and ICA tax revenues disbursed to EP in 2007 totaled 55.2 million euros (EP, 2007b). In contrast, the ISP tax revenue to be dedicated to EP in 2008 is estimated at 600 million euros (MFAP, 2008b). This revenue can be diverted to either operating or capital costs; however, according to the Portuguese 2008 National Budget, the increase in revenue will be offset by an equal decrease of capital funds traditionally directed to EP.

**Table 21. Portuguese Tax Rates on Fuel (ISP)**

(in euros)

Fuel Type	Tax Rate (per liter)	to Central Gov't		to EP	
		Rate	%	Rate	%
Petroleum	0.580	0.516	89%	0.064	11%
Diesel	0.360	0.274	76%	0.086	24%

Sources: Governo da República Portuguesa (2007b), OECD & European Environment Agency (2008).

As previously stated, most Portuguese municipalities do not provide dedicated revenue sources for any government transportation expenditures. Although municipalities generate revenue by levying taxes and user fees on a variety of transportation activities (automobile sales, drivers' licenses, vehicle registration), there is no equal link on the expenditure side. All expenditures are funded through the general pool of own-source revenue and intergovernmental transfers.

As an exception, however, there are limited cases where municipal governments link fare and parking fee revenues with public transportation expenditures. This only occurs in municipalities where the city funds its own public transportation systems and, in the case of parking fee revenues, not always. Aveiro, Coimbra, and Évora, for example, have created this dedicated revenue stream for public transportation.

### Expenditures

Transportation-related expenditures in Portugal take the form of operating subsidies and capital grants. Capital grant funds are project-based revenues distributed through the national capital investments program. This program combines national revenues with intergovernmental transfers from EU Structural Funds and disburses the revenue as outlined in the QREN, the National Strategic Reference Framework (*Quadro de Referência Estratégico Nacional*). Subsidies are exclusively distributed to state-owned enterprises while capital grants may be distributed to municipalities as well as state-owned enterprises.

### Operations

All transportation-related operations expenditures disbursed by central government are subsidies directed to the state-owned transportation companies managed by the State Enterprise Sector (*Sector Empresarial do Estado, SEE*) under MFAP. In 2006, the last year for

which data are available, the central government disbursed over 210 million euros to eight of the ten transportation companies as outlined in Table 22. This represents almost a four percent increase over subsidies in the previous year. Municipally owned transportation services and companies are not eligible for central government subsidies.

**Table 22. Operating Subsidies to SEE Surface Transportation Companies, 2005-2006**  
(in thousands of euros)

Company <sup>a</sup>	2005	2006	Variation	
				%
Estradas de Portugal (EP) <sup>b</sup>	62.6	61.7	-0.9	-1.4%
Carris	41.5	45.4	1.9	4.6%
Comboios de Portugal (CP)	25.5	27.1	1.6	6.3%
REFER	27.1	29.0	1.9	6.9%
Metropolitano de Lisboa (ML)	20.3	21.6	1.3	6.4%
STCP	15.4	16.4	1.1	6.9%
Transtejo	8.7	9.1	0.4	5.1%
Metro do Porto (MP)	2.2	2.4	0.2	7.0%
<b>Total</b>	<b>203.4</b>	<b>210.9</b>	<b>7.5</b>	<b>3.7%</b>

Sources: MFAP (2007b, 2007e).

<sup>a</sup>RAVE and Metro Mondego (MM) did not receive operating subsidies in 2005 and 2006.

<sup>b</sup> According to EP's *Esforço Financeiro Público*, the authority did not receive operating subsidies in 2005 and 2006. This contradicts the SEE's own *Relatório 2007*, however, which describes the above figures as operating subsidies to EP.

### *Project Finance*

Over the past several years, the transportation program (*Programa Orçamental PO24*) has received the largest share of PIDDAC funds. This changed, however, in 2008 when, among other reductions, the PIDDAC funds apportioned to EP were reduced as a result of the new dedicated revenue arrangement from the ISP tax. As Table 17 in the previous discussion of PIDDAC funds illustrates, the transportation program has only slipped to second place among the top five priorities for capital investment. The program is budgeted to receive twelve percent or 433 million euros of PIDDAC funds in 2008 (MFAP, 2008b). In contrast, the budget for the preceding year was over 2.5 billion euros, which represented more than half of all PIDDAC funds disbursed in that year (MFAP, 2007a). This drastic reduction is the result of both central government's policy to reduce government expenditures and its reduction of support to EP as a part of the reauthorized dedicated revenue stream. Both municipalities and SEE companies are eligible to receive PIDDAC funds.<sup>63</sup>

## **5.4 Analysis of the Portuguese Surface Transportation Policy and Finance System**

Portugal has not established an explicit surface transportation policy and finance system. No overarching policy coordinates transportation activity and, apart from the

<sup>63</sup> Disbursements to private companies are not common. However, the private commuter rail operator, Fertagus, received an undisclosed amount of PIDDAC support in 1999 (Ministério do Planeamento, 2001, p. 70).

revenue dedicated to road infrastructure, there is no explicitly defined transportation finance system. Regardless, government investments in transportation infrastructure and operations have led to the emergence of an implicit system.

This implicit system funds transportation investment with general government revenues in a political process that does not require little in the way of project evaluation, cannot ensure the stability of future transportation investments, and promotes wide-ranging public sector participation in transportation. The following section provides an analysis of the implicit Portuguese public transportation policy and finance system with respect to the criteria introduced at the end of Chapter 3—fiscal equivalence, externalities, and equity—as well as a stability criterion. On the whole, the system struggles in each area. It violates the fiscal equivalence condition in public transportation infrastructure and services, largely ignores transportation externalities, and disregards equity issues associated with accessibility.

### **Fiscal Equivalence**

The fiscal equivalence condition is applied unevenly by the Portuguese surface transportation policy and finance system. It is somewhat adhered to in the road and rail sectors. It is often violated, however, in the public transportation sector with respect to both operations and project finance.

Portugal only partially matches national and sub-national benefits with national and sub-national expenditures in the road and rail sectors. Both the national road and rail networks, for example, provide national benefits in terms of interconnectivity, economic development, and network effects. Improvements in these sectors therefore appropriately draw from central government revenues. Yet, the system fails to recognize the localized benefits that such improvements bring and does not require municipal governments to pay for the benefits they receive. Therefore all of the localized benefits go “unpaid.”

The opposite is true for municipal road network improvements. While municipal roads primarily provide more localized benefits, network effects also bring benefit to the national road network. Yet, central government rarely offers support for improvements of municipal road infrastructure. Furthermore, municipal governments see none of the revenue dedicated to road development through the Fuel Tax. The exclusive beneficiary of the dedicated revenue is EP, the national road operator, who has no plans to share the revenues with municipal governments.

There is one large exception in the road sector with respect to fiscal equivalence: the private concessionaires. Private involvement in the roads sector does provide an example of strict adherence to the fiscal equivalence condition. Direct tolls ensure that users pay for the benefits they receive, namely access to road infrastructure.

In contrast, fiscal equivalence is pursued in an uneven manner by the Portuguese public transportation sector. On the operations side, state-owned companies that provide local public transportation services do not abide by it, while municipal companies are forced to. On the project finance side, municipal support for public transportation infrastructure projects is minimal, creating a mismatch between benefits and expenditures.

Despite the fact that public transportation services provide more localized benefits, central government, not municipal government, provides municipal level public transportation services in the metropolitan areas of Lisbon and Porto. The main public transportation service providers in these metropolitan areas—Carris, Metropolitano de Lisboa, Transtejo, STCP, and Metro do Porto—are state-owned enterprises that draw all operational (and capital) funds from central government revenues. Although the

municipalities themselves receive the direct benefit of these transportation services, municipal government provides no financial support. Central government taxes are used to support a sub-national good (with local and regional benefits), thus creating a mismatch between benefits and expenditures.

A different standard applies, however, when municipalities outside of the Lisbon and Porto metropolitan areas opt to provide their *own* public transportation services. Unlike the state-owned public transportation companies, municipally funded public transportation operations are ineligible for central government support. They must be funded with own-source revenue, a requirement that preserves the fiscal equivalence condition.

This uneven approach is not limited to public transportation operations. Public transportation project finance can also violate the fiscal equivalence condition. While EU Structural Funds are often leveraged for co-financing, the Portuguese central government is the only governmental body that funds capital costs for public transportation projects. Municipalities rarely fund any portion of capital costs for projects from which they will directly benefit (nor are they required to fund any future operating costs). This is also true for projects that do not involve state-owned enterprises.

The lack of fiscal equivalence in public transportation operations and infrastructure in Portugal creates an inefficient provision of public transportation services. Many citizens are paying for transportation improvements that bring them no benefits and, on the other hand, other citizens are not paying the true costs of the transportation benefits they receive. The problems of public transportation operations and project finance will be discussed further in the following chapter.

### **Transportation Externalities**

The Portuguese transportation finance system inadequately treats the existence of transportation externalities. Apart from a single tax mechanism targeting motor vehicle emissions, no other finance mechanisms are used to internalize either positive or negative externalities generated by transportation activity.

The Single Circulation Tax (IUC) acts as a proxy for a pollution tax on motor vehicles. It is a recurrent tax levied on motor vehicles. The IUC tax rate increases as vehicle age, the vehicle's polluting capability, and the power of the engine increase.

There is no indication that road tolls are being used to internalize transportation externalities. Private road concessionaires set tolls within the limits outlined by central government, but prices are based upon their revenue-generating capabilities with respect to demand. Although concessionaires are responsible for safety measures on the road segments they own and manage, there is no evidence that other marginal costs are being incorporated into tolls. Furthermore, government does not collect a portion of toll revenue to redirect toward the mitigation of transportation related externalities.

### **Equity**

Project planning and finance in Portugal is biased toward road infrastructure, which creates equity concerns with respect to other transportation modes. Road planning is guided by a national road plan and road finance benefits from a dedicated revenue stream. Rail and public transportation planning and finance, however, do not have equal plans or dedicated revenues. Equity concerns are further exacerbated by the lack of project evaluation requirements for public transportation projects, which makes the process vulnerable to political influence at the expense of user benefits. Furthermore, citizen access to efficient



public transportation services is hindered by the administrative and financial relationship between central government and the state-owned public transportation companies. This relationship promotes a soft budget constraint and allows companies to provide service with little consideration for the user.

The Portuguese surface transportation policy and finance system is promoting mobility over accessibility. Government policies toward road infrastructure planning and finance have created a much more stable environment for auto-oriented projects, while policy toward public transportation investments promotes spending over efficiency and user benefits. An efficient road network is not accessible by all citizens.

### ***Road Infrastructure Privilege***

Portuguese transportation policy dictates that road infrastructure planning and implementation be conducted in a comprehensive, rational manner, guided by a national road plan and a dedicated revenue stream. Policy does not dictate the same, however, for rail and public transportation sectors. This discrepancy creates a bias in the Portuguese surface transportation system that privileges road infrastructure over other transportation investments.

Road infrastructure planning in Portugal is guided by the *Plan Rodoviário Nacional (PRN)*, which has been in existence since the mid 1940s. The PRN provides the basis from which EP and MOPTC identify and prioritize future infrastructure investments, lending stability to the road planning process. No similar national plan exists for rail or public transportation investments despite significant central government participation in both sectors. While the rail sector is currently guided by a “strategic orientations” plan developed by the Secretary of State for Transportation in 2006, the plan is not comprehensive. It devotes significant attention to the conventional rail network, while relegating the national high speed rail plan to a handful of pages (MOPTC, 2006b). Similarly, the public transportation sector has never had a comprehensive national plan.

Obviously, the mere existence of a plan does not guarantee government action or adherence. However, the potential power of a national plan is evidenced by the PRN. The plan has been legitimized as an appropriate planning tool and the roads sector has certainly benefited from its existence. It streamlines the political process for project prioritization and approval while simultaneously ensuring stability in road infrastructure planning and implementation by creating the existence of “future plans.” The lack of such plans for the rail and public transportation sectors sets the stage for ad hoc, uncoordinated planning.

The road sector also benefits from a dedicated revenue stream from the Fuel Tax (ISP). Although the revenue is not sufficient to cover all expenditures related to road infrastructure planning, construction and operations, its existence lends a degree of stability to the Portuguese roads sector. No similar source of dedicated revenue exists for other transportation expenditures, however. The rail and public transportation sectors must seek funds from general government revenue alongside funding requests from the public education, defense, and healthcare sectors, for example.

This discrepancy represents a bias toward the roads sector, which benefits from a depoliticized store of hundreds of millions of euros each budget cycle. Dedicated revenue streams are generally considered beneficial for transportation investments, yet a more balanced, intermodal approach would be appropriate in the Portuguese case. Despite the failings of the state-owned enterprises, injecting some stability in all transportation sectors would be a legitimate government interest.

### ***Public Transportation Infrastructure Projects***

Public transportation infrastructure projects are not required to undergo project evaluation as a stipulation for central government funding. Cost benefit analyses or alternatives analyses are therefore very uncommon for public transportation projects. However, this lack of project evaluation likely makes the process even more vulnerable to political influence. Projects need not display any technical or social merit to be approved.

The absence of project evaluation represents an equity issue with respect to public transportation investments. Recent public transportation projects have implemented technologically advanced systems in areas that have little demand for such systems. The Metro Sul do Tejo project and the 2004 extensions of the Metropolitano de Lisboa stand out as two examples. Both extended light rail and heavy rail systems, respectively, to communities in the metropolitan Lisbon area that did not warrant such capital intensive systems. Overall costs for these projects were high, yet ridership has failed to materialize. Both projects were valued for their political merit rather than any social benefit.

Central government must establish criteria for evaluating public transportation infrastructure projects as elements of the larger transportation system. It must also begin to consider the relationship between costs and benefits in an effort to better match investments with demand. Without these measures, the equity issues with public transportation infrastructure projects will remain. Government will continue to spend large sums of money on political projects as opposed to bringing efficient public transportation infrastructure to the people of Portugal.

### ***State-Owned Public Transportation Enterprises***

State-owned public transportation enterprises receive operating and capital support from central government regardless of performance criteria with respect to users. The administrative and fiscal relationship between central government and the state-owned companies prizes service *provision* over everything else. Whether that service offers a benefit to the municipalities where it is operated appears to be of peripheral consideration.

Thus, policies toward public transportation service provision orient state-owned companies toward mobility (merely providing service) instead of accessibility (providing service for the benefit of users). This represents yet another equity impact on users who are already adversely impacted by a policy bias toward road infrastructure planning and a highly politicized public transportation infrastructure implementation process. The equity impact is further exacerbated, however, by the existence of a soft budget constraint between central government and the state-owned public transportation enterprises. As previously mentioned, these companies carry significant debt. Regardless of their actions, however, these companies will continue to receive central government support.

New incentives must be adopted to orient public transportation services to users and encourage state-owned companies to reduce debt. This represents one of the most significant challenges to the Portuguese transportation policy and finance system. It will be discussed in detail in the following chapter.

### **Stability**

Although implicitly acknowledged as a criterion for good general public finance, stability plays an important role in transportation policy and finance as well. The Portuguese transportation and policy finance system suffers from a lack of stability, most notably in

budgeting processes. The lack of earmarking, an inability to guarantee multi-year financing commitments, and a short time horizon adversely impact long-term transportation planning. Under the central government budgeting process, each ministry is required to submit a budget request as an aggregate sum. Ministries are not asked to provide any detail behind their budget requests and little debate occurs over the projects or programs that the aggregate budgets would support (J.P. Henriques, personal communication, February 12, 2008). Instead, debate is centered upon each ministry receiving its “fair share,” which is nothing more than a political construct. Earmarking does not exist; therefore ministries wait to commit to projects or programs until they know how much their lump sum from central government will be.

The budgeting process promises no certainties. Multi-year commitments for funding are therefore uncommon. Furthermore, the final budget is most often approved one day before the new budget cycle is to begin, providing little incentive for preliminary planning. The situation makes it difficult for transportation projects, which often represent large, long-term investments, to compete fairly against other government expenditures under such an unstable system. This is especially true for transportation expenditures in the rail and public transportation sectors, which do not benefit from a dedicated revenue source. Long-term transportation planning will only be possible through significant reform of central government budgeting processes.

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The Portuguese transportation policy and finance system leverages the public sector to provide a significant amount of transportation services. The private sector is leveraged for road infrastructure construction and maintenance, but its involvement in rail and public transportation has been largely limited. The existence of state-owned transportation enterprises has created serious problems with respect to fiscal equivalence, equity, and soft budget constraints. Furthermore, government policies have created a more stable environment for road infrastructure planning, further exacerbating equity issues.

The following chapter will discuss three sets of case studies that represent significant challenges to the provision of transportation services in Portugal. The first set considers the problems surrounding state-owned transportation companies. The second set concerns government provision of public transportation services while the third looks at project finance.



## 6 Case Studies in Transportation Policy and Finance in Portugal

The structure of the Portuguese public finance and transportation finance systems combined with the overarching government policy toward transportation has created a complex landscape with respect to transportation activity and investments. Building from the theoretical frameworks for both general public finance and transportation policy and finance, this chapter examines three case studies as elements within the Portuguese surface transportation policy and finance system: state-owned surface transportation companies, public transportation provision, and transportation project finance. This chapter will analyze each case study with a focus on how they impact fiscal equivalence, externalities, and equity. It will conclude with an overarching analysis of policy with respect to both operations and project finance.

### 6.1 State-Owned Surface Transportation Enterprises

The Portuguese government's major involvement in transportation infrastructure and services provision means that little transportation planning can be conducted without the influence of a state-owned transportation company. There is obviously a legitimate government interest in providing accessibility to its citizens. Yet, the fiscal and administrative relationship between central government and its transportation companies limits central government's ability to influence public goods provision through the state-owned companies. This has an adverse impact on government transportation policy and finance, most notably in the rail and public transportation sectors.

#### Background

As previously mentioned, ten state-owned enterprises provide the bulk of road, rail and public transportation services in Portugal. Each company is an autonomous entity governed by its own board of directors, however, all have an administrative and fiscal relationship with the State Enterprise Sector (*Sector Empresarial do Estado, SEE*) under the Ministry of Finance and Public Administration (MFAP) as well as the Ministry of Public Works, Transportation and Communications (MOPTC). Table 23 outlines the ten SEE companies and their respective sectors.

**Table 23. State-Owned Surface Transportation Enterprises in Portugal**

Public Transportation	Rail	Road
Carris	Comboios de Portugal (CP)	Estradas de Portugal (EP)
Metro do Porto (MP)	Rede Ferroviária de Alta Velocidade (RAVE)	
Metro Mondego (MM)	Rede Ferroviária Nacional (REFER)	
Metropolitano de Lisboa (ML)		
Sociedade de Transportes Colectivos do Porto (STCP)		
Transtejo <sup>a</sup>		

Source: MFAP (2007e).

<sup>a</sup> Provides ferry service, but included under public transportation.

These ten companies were incorporated into the SEE under very different circumstances. Some companies have long histories in providing transportation services. Carris, for example, began as a private company in 1872 and was eventually nationalized by the Portuguese communist party after the Carnation Revolution in 1974. CP also has antecedents as a private company, *Companhia dos Caminhos de Ferro Portugueses*, which began rail operations in Portugal in 1856. It, too, was nationalized after the revolution. Still, other SEE companies are quite young. The four youngest transportation companies were created between 1997 and 2001 (MFAP, 2002).<sup>64</sup>

Certainly new SEE companies are created for specific development initiatives. *Parque Expo '98*, for example, was created to redevelop an unused industrial site to host the Expo '98 World's Fair. Once their tasks are complete, however, these companies are dissolved. The same cannot be said for transportation operations that have the potential to continue indefinitely.

One of the major goals of the SEE is to bring state-owned enterprises to a state of operation such that they can be privatized or liquidated. The agency has been moderately successful in the privatization of hospital services, for example. However, with the exception of the high-speed rail authority, RAVE,<sup>65</sup> the recent incorporation of these new transportation companies seem to run counter to these goals; it further burdens the state with the provision of transportation services.

### Analysis

A public goods perspective of transportation activity focuses on accessibility. Government has a legitimate interest in dedicating policy and financial resources toward the provision of accessibility. The question surrounding the state-owned surface transportation companies is whether they provide accessibility and, if not, whether they can be encouraged to do so.

The previous chapter indicated that state-owned public transportation companies were oriented toward providing service as opposed to accessibility. The same could be said for

<sup>64</sup> REFER in 1997, Metro do Porto in 1999, RAVE in 2000, and Metro Mondego in 2001.

<sup>65</sup> Which will presumably be dissolved once the high-speed rail system is constructed and operating.

the rail sector. Companies exist simply to provide service. Little relationship seems to exist between ridership levels on the rail and public transportation systems and support from central government. Clearly, at least some portion of Portuguese society benefits from rail and public transportation services. Still, that benefit appears secondary to the state-owned surface transportation companies' activities.

Political ideology may deem central government to be the right provider for transportation services, but the current administrative and financial environment limits the government's ability to influence the provision of accessibility. A soft budget constraint and protection from competition mean that state-owned companies receive support regardless of whether they provide accessibility.

Herein lies the main problem with regards to equity in transportation services. Taxpayers are financing a system in which the performance outcome (i.e., accessibility) does not seem to be the highest priority. This is most egregious when considering those individuals who cannot or do not access the only viable alternative—the road system. The following sections highlight the degree to which the soft budget constraint and protectionist policies influence the state-owned transportation companies' ability to provide accessibility.

### ***Soft Budget Constraint***

The ten SEE transportation companies place a significant burden on central government finances. The current fiscal relationship between central government and the SEE companies can be characterized as a soft budget constraint. Central government not only provides each company with increasing yearly operating subsidies, it also guarantees each company's debt without imposing restrictions on borrowing.

As a result of this relationship, the ten surface transportation companies carry significant net operating losses and shoulder a large amount of debt. In 2006, for example, the companies posted a cumulative net operating loss of over 760 million euros, an almost twelve percent increase over the previous year. Over half of the operating loss can be attributed to REFER and CP alone. In the public transportation sector, *Metropolitano de Lisboa* and *Metro do Porto* posted the largest losses, representing 19 percent and 16 percent of the total loss for all transportation companies. Table 24 summarizes key figures for the state-owned surface transportation sector.

Apart from the operating losses, another significant problem is debt. Almost all SEE companies are guilty of profligate borrowing. When a company needs money, it borrows it, and, because the loans are guaranteed by central government, the banks are happy to lend it (C.S. Bentes, personal communication, February 8, 2008). The companies require no authorization from central government to seek loans. Furthermore, central government bailouts are common should debt become an issue for the company. As one transportation professional put it, "Public companies [in Portugal] don't go bankrupt; things like that don't usually happen in Portugal" (Anonymous, personal communication, February 4, 2008).

Although debt information is not available for most SEE companies, of particular note is the 2006 debt-to-income ratio for both Carris and STCP of 298% and 346%, respectively. These figures continue to grow each year as the agencies borrow money to pay off debt. It is a cycle that cannot continue indefinitely. They, and their other SEE transportation counterparts, will eventually default and central government will be forced to devote a significant amount of money to bail the companies out.

**Table 24. State-Owned Surface Transportation Enterprises in Portugal: Key Figures, 2005-2006**

(subsidy and net operating loss in millions of euros)

Company	Carris		CP		EP		MP	
	2005	2006	2005	2006	2005	2006	2005	2006
Operating Subsidy	41.5	43.4	25.5	27.1	0.0	0.0	2.2	2.4
Subsidy as % of Revenue	34%	32%	8%	8%	0%	0%	5%	5%
Net Operating Loss <sup>a</sup>	-54.5	-52.2	-196.8	-192.9	-4.3	-1.3	-71.3	-122.2
Debt-to-Income Ratio	270%	298%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Employees	2,787	2,681	4,459	n.a.	1,703	1,737	137	123

Company	ML		REFER		STCP		Transtejo	
	2005	2006	2005	2006	2005	2006	2005	2006
Operating Subsidy	20.3	21.6	27.1	29.0	15.4	16.4	8.7	9.1
Subsidy as % of Revenue	23%	25%	14%	12%	20%	22%	32%	33%
Net Operating Loss <sup>a</sup>	-162.0	-147.6	-160.4	-201.7	-17.1	-25.6	-16.3	-17.3
Debt-to-Income Ratio	n.a.	n.a.	n.a.	n.a.	295%	346%	n.a.	n.a.
Employees	2,841	2,884	4,024	n.a.	1,751	1,673	578	569

Sources: Carris (2007b), CP (2006), MFAP (2007b), MP (2008b), ML (2007), REFER (2006), STCP (2007), Transtejo (2007).

<sup>a</sup> Includes subsidy.

"n.a." indicates not available.

### **Protectionism**

In addition to providing the SEE transportation companies a fairly unconstrained supply of funds, central government is also very protective of its companies, limiting their exposure to competition from the private sector. Of course, in some cases the nature of the transportation service promotes a natural monopoly. Such is the case of the national rail infrastructure manager, *Rede Ferroviária Nacional* (REFER) and the national road authority, *Estradas de Portugal* (EP).<sup>66</sup> Still, in most sectors the government has created artificial monopolies, which bar the private sector from direct competition with SEE companies.

The monopolies are the responsibility of IMTT, the surface transportation regulator. As previously mentioned, the agency authorizes private providers of public transportation service to operate in specific areas. It also prevents those same companies from providing service where a SEE company is present. Companies such as Carris, Transtejo, and STCP, for example, are protected from competition with the private sector. In the rail market, as well, IMTT has been criticized for creating administrative barriers to market entry for the private sector (IBM Global Business Services, 2007).

This protectionism has not prevented SEE companies from competing with one another, however. This is especially true in the Lisbon and Porto metropolitan areas where SEE bus services (Carris, STCP) have been forced to compete with SEE heavy and light rail services (Metropolitano de Lisboa, Metro do Porto). Rather than competing collectively with private transportation modes to maintain or even gain market share, the companies have dug in their heels in an effort to steal mode share from one another.

<sup>66</sup> Although EP has successfully introduced competition for the market through private sector road concessions.



## Policy Implications

The Portuguese public sector has a legitimate interest in providing accessibility to its citizens through participation in transportation infrastructure and services. The soft budget constraint and protectionist policies with respect to the state-owned surface transportation companies, however, present policy implications for equity in transportation. Guaranteed money (through subsidy and unlimited borrowing) and protection (through government policy) the companies are more concerned with mobility (the efficient movement of vehicles) and only peripherally concerned with providing accessibility (increasing users' access to opportunities).

It is difficult to determine exactly who benefits from such an arrangement. Those who rely exclusively on the SEE companies for accessibility are lucky if the system serves them well. Central government benefits politically from the perception that it is providing accessibility, yet its ability to truly provide it through the state-owned transportation companies is limited. The state-owned transportation companies benefit from unconditional public sector support, but are operating on borrowed time. Central government's coffers are not bottomless.

The state-owned surface transportation companies alone represent one of the biggest transportation challenges facing central government in the next decade. Reform must orient their activity to the user, encourage companies to reduce debt to within reasonable levels,<sup>67</sup> eliminate the soft budget constraint, and expose the companies to a more competitive environment. The end result will be a more efficient and equitable transportation system.

## 6.2 Public Transportation Services

Municipal governments in Portugal are free to provide public transportation services to their citizens, yet there is no official government policy on public transportation. A de facto policy has emerged, however, though the direct involvement of the state in public transportation service provision. This policy simultaneously privileges and disadvantages the Lisbon and Porto metropolitan areas with respect to public transportation.

### Background

Portuguese law allows great flexibility for municipal provision of public transportation services. Municipalities have the option of either providing public transportation as a municipal service (*serviço municipal*) or creating a municipal company (*empresa municipal*), which, unlike a *serviço municipal*, is legally recognized as an autonomous entity that is free to create its own labor practices and borrow from the market (Governo da República Portuguesa, 2006). Of course, as a third option, municipal governments may choose to contract with the private sector for specific public transportation services.<sup>68</sup> In all cases, public transportation services remain under the regulatory control of IMTT.

A handful of Portuguese municipalities have chosen to provide public transportation services to their citizens. Barreiro, Bragança, Coimbra and Portalegre, for example, offer fixed route bus service to their communities through *serviços municipais*. The municipalities of Aveiro, Braga and Évora, on the other hand, have created *empresas municipais* to carry out

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<sup>67</sup> On par, perhaps, with similar public companies in the EU.

<sup>68</sup> In some cases, the preexistence of private transportation services obviates the need for municipal intervention.

public transportation services. All of the municipal public transportation entities in Portugal are outlined in Table 25.

**Table 25. Municipally Operated Public Transportation Systems in Portugal**

Municipality	Company	Type	Services			
			Fixed Bus	Water Taxi	Bike Sharing	Parking Facilities
Aveiro	MoveAveiro	Empresa Municipal	✓	✓	✓	✓
Barreiro	Serviços Municipalizados de Transportes Colectivos do Barreiro (TCB)	Serviço Municipal	✓			
Braga	Transportes Urbanos de Braga (TUB)	Empresa Municipal	✓			
Bragança	Serviço de Transportes Urbanos de Bragança (STUB)	Serviço Municipal	✓			
Coimbra	Serviços Municipalizados de Transportes Urbanos de Coimbra (SMTUC)	Serviço Municipal	✓			
Évora	Sistema Integrado Transportes e Estacionamento de Évora (SITEE)	Empresa Municipal	✓			✓
Portalegre	Serviços Municipalizados de Águas e Transportes Portalegre (SMAT)	Serviço Municipal	✓			✓

Sources: Câmara Municipal de Portalegre, (2007), Câmara Municipal do Barreiro (2008), MoveAveiro (2007), SITEE (2008), SMTUC (2007), STUB (2008), TUB (2007).

Several municipalities—Faro, Lagos, Guimarães, Setúbal, for example—leverage private bus companies to provide basic services for their communities. These arrangements are contracts only; municipalities do not have the authority to tender and regulate concessions with private companies. IMTT must grant each private company the right to operate in specific service areas, but it is unclear how the regulator, the municipality, and the private operator manage this process under municipally contracted service.

Regardless of the form, a municipality that opts to provide public transportation services takes on the full fiscal and administrative responsibility for doing so. Central government activity with respect to municipally provided service is limited to minimal capital support through PIDDAC funds, mainly to assist in the purchase of new buses.<sup>69</sup> Other sources of funding include one-time EU grants, which are disbursed directly to transportation companies. In 2007, for example, SMTUC in Coimbra applied for capital funds for a driving simulator under the EU CIVITAS program (Anonymous, personal communication, January 31, 2008).

Notably absent from the discussion are the metropolitan areas of Lisbon and Porto. As mentioned in the previous chapter, the bulk of public transportation services in these areas is

<sup>69</sup> New bus purchases, in this case, are often limited to one or two vehicles a year.

provided by state-owned enterprises under the State Enterprise Sector (*Sector Empresarial do Estado, SEE*). The municipal governments themselves do not directly shoulder any of the operating or capital costs associated with the services provided by these SEE companies. The funds to support bus, subway, and ferry services in Lisbon, as well as bus and light rail services in Porto come entirely from central government.<sup>70</sup> Table 26 outlines the seventeen municipalities that receive some form of public transportation service from a state-owned SEE company. The fiscal structure of public transportation provision in the Lisbon and Porto metropolitan areas represents an obvious windfall of avoided costs for these municipalities. Admittedly, each receives varying degrees of state-provided service, yet none directly finances the service they receive.

**Table 26. Portuguese Municipalities Served by State-Owned Public Transportation Companies**

Municipality	Public Transportation Services			
	Fixed Bus	Subway	Ferry	Light Rail*
<b>Lisbon Metropolitan Area</b>				
Almada	✓		✓	✓*
Amadora	✓	✓		
Barreiro			✓	
Lisbon	✓	✓	✓	✓
Loures	✓			
Montijo			✓	
Odivelas	✓	✓		
Oeiras	✓			✓
Seixal			✓	✓*
<b>Porto Metropolitan Area</b>				
Gondomar	✓			
Maia	✓			✓
Matosinhos	✓			✓
Porto	✓			✓
Póvoa de Varzim				✓
Valongo	✓			
Vila do Conde				✓
Vila Nova de Gaia	✓			✓

Sources: Carris (2007a), Governo da República Portuguesa (1999a), ML (2008a), MP (2008a), STCP (2008a).

\* Includes tram services.

\* State does not provide service; however, it assumes all risk of underperformance.

### Analysis

The Portuguese central government provides local (regional) public goods in the Lisbon and Porto metropolitan areas. This not only violates the fiscal equivalence condition, it also presents equity issues with respect to “metropolitan” municipalities that reap the benefit of state participation. An uneven application of budget constraints to public transportation

<sup>70</sup> Capital co-financing with the EU is possible, especially when large infrastructure projects are undertaken.

service providers further exacerbates equity issues. Municipal companies are required to follow a hard budget constraint while the state-owned transportation companies, as previously mentioned, are not.

While the Lisbon and Porto metropolitan areas reap the fiscal benefits of state participation, they are simultaneously disadvantaged because they have little administrative control over the services they receive. This is a manifestation of the equity problems mentioned in the previous section's analysis of general transportation state-owned enterprises. The companies are oriented toward mobility as opposed to accessibility.

### ***Violation of Fiscal Equivalence***

Because each state-owned enterprise draws its funding from general revenues collected by central government, all taxpayers in Portugal finance the provision of public transportation service in the Lisbon and Porto metropolitan areas. The majority of the benefits of public transportation services accrue locally, however.<sup>71</sup> This mismatch of costs and benefits, with respect to the metropolitan areas, violates the fiscal equivalence condition.

Municipally provided services, on the other hand, maintain the fiscal equivalence condition. Own-source revenue—taxes and user fees—is utilized for financing expenditures. Thus, localized benefits are paired with local revenue-generating mechanisms (ignoring the appropriateness of those specific mechanisms for financing the services).<sup>72</sup> Put simply, a citizen of Coimbra pays national taxes, a portion of which is used to support bus, subway, light rail and ferry services in Lisbon and Porto, *in addition to* municipal taxes that support the SMTUC bus service in Coimbra. Meanwhile, a citizen of Lisbon does not pay the true costs for the benefits received by the SEE companies and, furthermore, pays nothing to support municipally operated systems in other parts of the country. The Coimbra citizen pays more than their share while the Lisbon citizens pay too little.

### ***Budget Constraints and Efficiency***

As previously mentioned, all SEE companies operate under a soft budget constraint. They borrow money from the private market without limit, knowing that central government will bail them out when the debt becomes a problem. Municipal transportation companies and services, on the other hand, are subject to hard budget constraints by law. Their debt is included as municipal debt and therefore falls under the restrictions of the Municipal Finance Law.

The state-owned enterprise soft budget constraint further aggravates the fiscal equivalence condition with respect to bailouts. When a public transportation SEE company becomes so insolvent that central government must step in with a large infusion of cash—in addition to the regular operating subsidy—the fiscal equivalence condition is further violated. The entire country is required to pay for the bailout.

A comparison of municipal transportation services and companies with their SEE counterparts reveals the impacts of budget constraints. Table 27 provides some key figures

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<sup>71</sup> And, arguably, regionally. The point here is that primary beneficiary of public transportation is not the nation.

<sup>72</sup> Certainly intergovernmental transfers from the FEF or FSM could be put toward municipal public transportation expenses, but even in this case, the fiscal equivalence condition is not necessarily violated. The intent of the horizontal and vertical equalization grants is to give municipalities the discretion to spend the grants as they see fit. There is no direct link between transfer eligibility (as a function of municipal tax remittances, population, land area, social development, etc.) and the provision of public transportation.

for comparing Carris and STCP, state-owned bus companies, with select municipal companies. Although figures are not available for all municipally provided transportation services, in the case of SMTUC, the hard budget constraint means less debt than the SEE counterparts. Of particular note is the debt-to-income ratio of the two SEE companies as compared to SMTUC's debt-to-income ratio.

**Table 27. Public Sector Urban Bus Services in Portugal: Key Figures, 2005-2006**  
(subsidy and net operating loss in millions of euros)

Company <sup>a</sup> (City)	Carris <sup>*</sup> (Lisbon)		STCP <sup>*</sup> (Porto)		SMTUC <sup>†</sup> (Coimbra)		TUB <sup>‡</sup> (Braga)		MoveAveiro <sup>‡</sup> (Aveiro)	
	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Operating Subsidy	41.5	43.4	15.4	16.4	3.6	4.1	2.9	3.6	0.9	1.2
Subsidy as % of Revenue	34%	32%	20%	22%	27%	30%	31%	37%	45%	44%
Net Operating Loss <sup>b</sup>	-54.5	-52.2	-17.1	-25.6	-0.8	-0.3	-1.0	-0.5	-1.1	-1.3
Debt-to-Income Ratio	270%	298%	295%	346%	56%	59%	n.a.	n.a.	n.a.	n.a.
Employees	2,787	2,681	1,751	1,673	481	480	332	322	129	119

Sources: Carris (2007b), MFAP (2007c, 2007d), MoveAveiro (2006, 2007), SMTUC (2007), STCP (2006, 2007), TUB (2007).

<sup>a</sup> Reports from SITEE, SMAT, STUB, and TCB unavailable.

<sup>b</sup> Includes subsidy.

<sup>\*</sup> State-owned enterprise, SEE (*Sector Empresarial do Estado*).

<sup>†</sup> Municipal service (*serviço municipal*).

<sup>‡</sup> Municipal company (*empresa municipal*).

"n.a." indicates not available.

### *Preferences Mismatch*

The third and final public finance concern deals with public preference and the ability of national government to provide local public goods. As discussed in Chapter 2, it is widely acknowledged that local and not national government should provide local public goods. This does not happen with state-owned SEE companies that provide public transportation services.

Exacerbating the problem is the fact that the SEE companies are not accountable to the customers and the municipalities they serve. Each company is an autonomous entity that can tailor its service to specific demographics; however, under the current system there is little incentive to do so. Two points illustrate this fact. First, recourse through the traditional company-client relationship is muted by the soft budget constraint. A customer that is dissatisfied with a SEE company such as Carris can either complain or refuse to ride the system, essentially taking their business elsewhere. The number of complaints and the loss of ridership, however, have little impact on the SEE companies in terms of their overall budget.<sup>73</sup> The soft budget constraint means they can continue to borrow without actually accounting for the dissatisfaction or loss of business, which are legitimate manifestations of public preference.

Second, recourse through democratic means is very difficult. Public preferences for local public goods logically manifest themselves at the municipal level in Portugal. A Portuguese citizen unhappy with their municipal government's provision of public services, for example, can vote a new administration into power. Yet, a citizen in Lisbon seeking to change public transportation provision through a newly elected administration will be sorely

<sup>73</sup> MFAP does not disclose an official methodology for calculating subsidies for state-owned transportation companies. Customer satisfaction, travel time, and other indicators of accessibility are not reported to MFAP on a regular basis, however. It is assumed, therefore, that MFAP calculates subsidies using other criteria.

disappointed by the municipality's inability to create change. State-owned companies are not beholden to the municipalities they serve; they answer only to central government. Municipally elected governments therefore hold little sway, with little practical ability to influence the actions of SEE companies.

If municipal government is inadequate, a second-best approach might consider the members of parliament elected by the public. This raises the question of whether these elected officials can be held accountable for the actions of SEE companies. The answer is a qualified no. Members of parliament have little say as to how a specific ministry spends its budget once all ministries have been allotted their lump sum (J.P. Henriques, personal communication, February 12, 2008). Furthermore, because the SEE enterprises are autonomous companies, a board of trustees guides each. Members of parliament have little control over leadership and day-to-day operations.

### **Policy Implications**

Although central government has no official policy toward the provision of local public transportation, the current situation in Portugal has created a de facto policy that simultaneously privileges and disadvantages the metropolitan areas of Lisbon and Porto. The privilege is that the municipalities and citizens in these areas do not pay the full costs of the benefits they receive. The disadvantage is that the services they do receive are provided by insolvent agencies, and there is no recourse when services do not reflect public preferences.

The de facto national public transportation policy has recently grabbed the attention of the municipal companies and services. In 2006, the municipality of Coimbra launched a public awareness campaign drawing attention to the subsidies that Carris and STCP have received from central government and the fact that SMTUC has received nothing (Câmara Municipal de Coimbra, 2007b). By 2007 dissatisfaction had spread to all of the nation's *empresas* and *serviços municipais* who demanded an audience with the national Secretary of Transportation to discuss the subsidy question ("Coimbra quer ser tratada como Lisboa e Porto [Coimbra wants to be treated like Lisbon and Porto]", 2007). Their core argument is that they, too, deserve central government subsidy just like the state-owned enterprises.<sup>74</sup>

The municipal desire to receive intergovernmental support for municipal transportation services is misguided. Were they to receive the subsidies they demand, the fiscal equivalence condition would still be violated in areas that the subsidies do not reach. Citizens in rural Portugal, for example, would be paying taxes to support public transportation services in not only Lisbon and Porto, but also in other urban areas such as Aveiro, Braga, Bragança, and so on. Also, the employment of subsidies would further entrench national government in the provision of local public goods, a role it should not assume. Despite the political necessity of confronting central government and demanding what they "rightfully deserve," contemporary Portuguese municipalities in this case must understand that the lack of central government operating support is as it should be, in a strictly theoretical sense.

Short of completely divesting itself of the state-owned public transportation companies, the challenge for central government is to create a more equitable and uniform policy toward public transportation finance. Reform would give the metropolitan areas of Lisbon and Porto more fiscal and administrative responsibility over the public transportation services

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<sup>74</sup> There is no evidence that their demands were met in the 2008 budget cycle, yet pressure continues to mount on central government.

provided in their respective jurisdictions. This would mirror the manner in which public transportation service is provided in other municipalities such as Coimbra and Braga.

The proposed Metropolitan Transportation Authorities (*Autoridades Municipais de Transportes, AMT*) provide the framework for such a reform, yet their political feasibility remains to be seen. The metropolitan areas are not clamoring for the AMTs to be implemented. Maintaining the status quo means they can avoid financing public transportation despite the equity problems associated with administrative authority.

### **6.3 Transportation Project Finance**

While the two previous sections have dealt with transportation operations in Portugal, this section addresses transportation project finance. Two current transportation infrastructure projects—the Metro Sul do Tejo and the Metro Mondego—demonstrate that transportation project finance in Portugal is, foremost, an exercise in politics. Projects are selected based on political merit rather than any technical or social benefit. This exacts a high price, however, from central government in terms of finance and, ultimately, creates equity issues that impact the Portuguese public at large.

#### **Background**

##### ***Metro Sul do Tejo***

The Metro Sul do Tejo had its origins as a proposal by municipal government to promote mobility on the southern bank of the Rio Tejo in the Lisbon metropolitan area. As of mid-2008, six years after the concession contract to build the project was signed, the system remains only partially complete. The project is 70 million euros over budget and even the private concessionaire has begun to admit that the promised ridership is not likely to materialize.

##### ***Protests***

In 1966 the 25 de Abril Bridge (then known as the Salazar Bridge, but renamed after the Carnation Revolution in 1974) was constructed across the Rio Tejo to link the growing communities on the south bank of the river with the municipality of Lisbon. The road link was seen as a vital component of regional connectivity and became increasingly important as the motorization rate in Portugal rose. A toll was charged on northbound trips (heading into Lisbon) and motor vehicle traffic on the bridge grew steadily.

In 1991, as Lisbon prepared for the Expo '98 World's Fair, the decision was made to construct a second bridge across the Rio Tejo. A public private partnership was proposed for the project. The bridge, known as the Ponte Vasco da Gama, would be designed, financed, constructed, operated and maintained by a private company awarded that right through a competitive bid process. Lusoponte, a consortium of Portuguese, French and British companies, was awarded the bid in 1994 and construction began in 1995. The new bridge opened to traffic on March 29, 1998 (Lusoponte, 2008).

The Vasco da Gama Bridge concession also included an operating concession for the 25 de Abril Bridge, granting Lusoponte full control over the two major metropolitan bridges. In an effort to harmonize the toll structures of both bridges (and thus remove the price advantage the 25 de Abril Bridge had over the newer, more expensive Vasco da Gama Bridge), Lusoponte proposed a fifty percent toll increase for the older bridge. The proposal

ignited a public backlash, however, especially among the communities on the south bank of the Rio Tejo who felt they were being unfairly targeted. The discontent culminated in the largest public protest in the nation's history on June 24, 1994, which shut down traffic over the bridge. The government responded by freezing tolls and compensating the concessionaire for the cumulative revenue that the toll increase would have raised on the 25 de Abril Bridge (Alemão, 1999; Neves, 2005). While political ideology supported the use of tolls on the two bridges, it did not support what was perceived as unnecessary government interference with an individual's right to accessibility.

### *The Proposal*

The 1994 protest brought mobility to the forefront of discussions among the communities of the south bank. Most had seen significant growth in the late 1980s and early 1990s and were feeling the pressure that such growth brought to bear on the transportation system. By the end of the year, the municipalities of Almada, Seixal, Barreiro and Moita had formed a coalition to investigate mobility solutions. The Instituto Superior Técnico (IST) in Lisbon and the Ecole Polytechnique Fédérale de Luusanne (EPFL) in Switzerland were contracted to conduct studies on the viability of a light rail system in the area. Based on these studies, the municipal coalition created an initial proposal for over 100 kilometers of light rail to link the four communities. The proposal sought to connect the communities with the new *Eixo Norte Sul* commuter rail line which would enter the south bank via a retrofitted 25 de Abril Bridge.

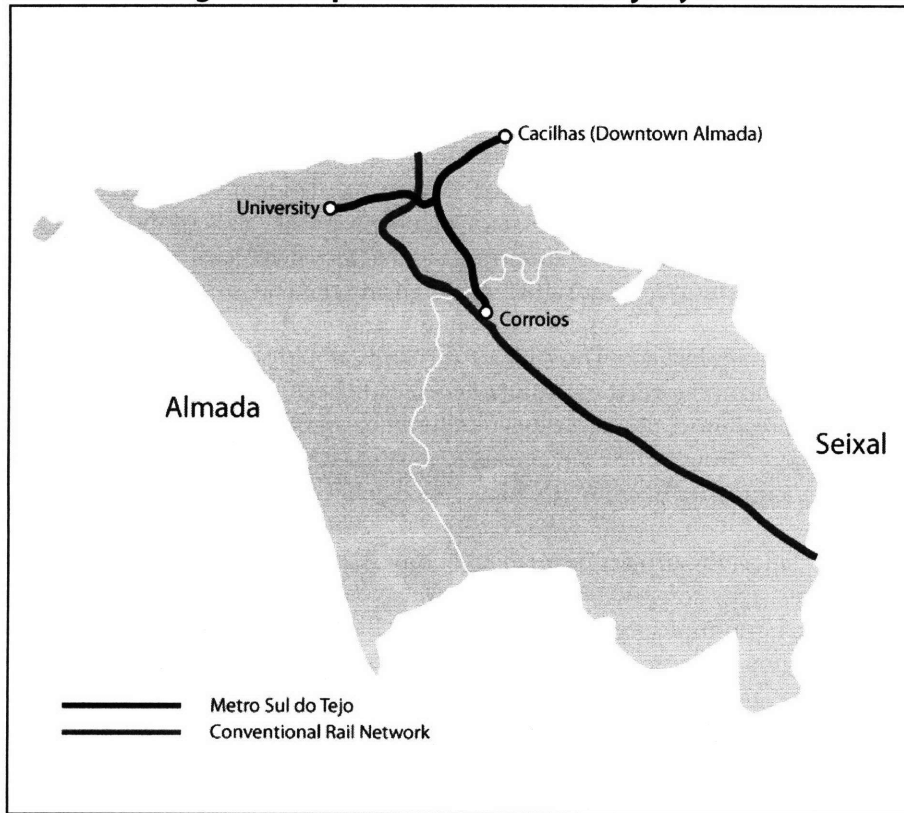
The initial proposal was taken to central government and by 1995 an agreement was signed between central government and the municipalities: the project would move forward with central government assuming eighty percent of the capital costs and the municipalities the remaining twenty percent (Câmara Municipal de Almada, 2008). For the next several years, however, the project languished as central government attempted to scale it back.

In 1999, four years after the original proposal was made, central government approved a 28-kilometer system—much smaller than the coalition's original proposal—divided into three project phases that, once complete, would connect the four municipalities (Governo da República Portuguesa, 1999a). Also, sometime during this year, central government entered a new agreement with the municipalities that replaced the 1995 agreement and absolved the municipalities of their twenty percent share of capital costs (Câmara Municipal de Almada, 2008). Thus, central government would assume the full costs of the project.

Implementation of the first phase was to begin immediately while the other two were postponed indefinitely. Phase One featured a network of 13.5 kilometers of light rail in the municipalities of Almada and Seixal. Radiating outward from a central junction, three lines would extend (a) four kilometers southward to Seixal, (b) four kilometers to the School of Science and Technology at the Universidade Nova de Lisboa in western Almada, and (c) 5.5 kilometers northeast to downtown Almada. Figure 8 displays the alignment for the Metro Sul do Tejo system.



**Figure 8. Map of the Metro Sul do Tejo System**



In April of the same year, central government resolved that the project, to be called the Metro Sul do Tejo, would be a public private partnership. A 30-year concession was tendered under the DBOT model (design, build, operate, transfer), which also included a small finance component for the private partner (Governo da República Portuguesa, 1999a). Under the arrangement, central government would seek co-financing with EU Structural Funds for all capital costs except rolling stock and ticketing systems. The private partner would finance the rolling stock and ticketing equipment, as well as construct, operate and maintain the system.

Similar to most DBOT concessions, the Metro Sul do Tejo concession guaranteed the private partner a minimum amount of fare revenue regardless of ridership. Thus, if ridership failed to reach projected levels, central government would be required to pay the concessionaire the difference between actual revenue and the guaranteed minimum. The risk of underperformance was therefore shouldered by central government. If ridership, and consequently revenue, exceeded the minimum, the concessionaire would be required to share a portion of the revenue gain with central government.

In 2002, the concession was awarded to a consortium comprised of Siemens, three large Portuguese construction companies (Teixeira Duarte, Mota-Engil, and Sopol), and a private Portuguese bus and rail operator (Grupo Barraqueiro). The project was scheduled for completion in December 2005 with a capital budget of 323 million euros, 55 million of which represented the concessionaire's investment in rolling stock and ticketing systems. Of the remaining 268 million, roughly seventy percent was to come from central government,

thirty percent from the EU. The government created an administrative board, the *Gabinete Metro Sul do Tejo*, to coordinate the project (Governo da República Portuguesa, 2002a, 2002b).

### *Municipal Demands*

Immediately after the concession contract was awarded, the mayor of Almada stepped forth with a series of objections to the project. She demanded that several elements be added to the project that were not part of the original proposal. This included signal pre-emption on rights-of-way shared by automobiles and light rail vehicles, nine new park and ride lots, and new mitigation measures that would ensure the construction of public parks and gardens in Almada (D. Neves, personal communication, February 12, 2008).

Central government balked. The Almada demands would significantly increase the cost of the project and, furthermore, the contract had already been signed with the concessionaire. In response, the municipality refused to grant the right-of-way necessary to construct the project through the municipality's downtown and at the key junction which joined the system's three radial spurs (D. Neves, personal communication, February 12, 2008).<sup>75</sup>

As a consequence, the project came to an abrupt halt. Central government scrambled to rearrange the project's construction schedule and avoid excessive delays. Eventually, the project was divided into three segments, the first of which would avoid the contested right-of-way and allow time for negotiations with the municipality. Segment One was comprised of the first two lines to the university and Seixal, Segment Two would connect the two at the junction (presumably after resolution with Almada), and Segment Three would build the third and final line into downtown Almada.

Construction on Segment One commenced immediately and by May 2007 the system opened to the public. Although construction was complete on both the university and Seixal lines, they were not connected to one another. Operations were therefore restricted to the four-kilometer Seixal line.

It is unclear what transpired between Almada and central government leading up to the opening of Segment One, but the municipality eventually allowed construction to commence on Segments Two and Three in 2007. The municipality's primary demands were never met, although central government did make some small changes to the original proposal to suit the municipality (D. Neves, personal communication, May 2, 2008). By December 2007 the first two lines were connected to one another and operations extended to the university. The line to downtown Almada is scheduled for completion at the end of 2008.

### *Project Indicators*

Table 28 outlines the final Metro Sul do Tejo project budget, which ballooned to over 393 million euros. Cost overruns reached approximately 70 million euros, a twenty-six percent increase of the public sector portion of the total budget, all of which was assumed by central government. Authorities attributed the entire overage to the three-year delay caused by Almada.

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<sup>75</sup> Portuguese law states that municipalities have full and legal ownership of the land they govern. Municipal land is, therefore, ceded to third parties (central government or otherwise) at will.

**Table 28. Metro Sul do Tejo Capital Budget**

(in millions of euros)

Source	Amount	% of Public Sector	% of Total
<b>Public Sector</b>			
Central Government	248	73.4%	63.1%
EU	75	22.2%	19.1%
Municipalities	15	4.4%	3.8%
<i>Public Sector Subtotal</i>	338		86.0%
<b>Private Sector</b>			
Concessionaire	55	-	14.0%
<b>Total Capital Budget</b>	<b>393</b>		

Sources: Gouveia (2007), Lino (2007).

Ridership on Phase One of the Metro Sul do Tejo was projected to be 28 million passengers per year, an average of almost 77 thousand passengers per day (Lino, 2007).<sup>76</sup> However, neither the concessionaire nor central government has released official ridership figures since operations began in May 2007 (Gouveia, 2008). The press and the public are left to conjecture over actual numbers, but, from all accounts, ridership on the system has been extremely low.

Project directors attribute the low ridership to the fact that Phase One is not complete. Critics assert that ridership projections were always overly optimistic and that the high numbers will never be realized. In an interesting twist, the concessionaire itself has begun to suggest that ridership will be less than anticipated. It attributes the low ridership to stagnant population growth in the two municipalities (Gouveia, 2007).

Also unknown is the total amount central government is paying the concessionaire for operations in light of the unrealized travel demand. As mentioned in the previous chapter, the reputed Portuguese daily *Diário de Notícias* reported that as of September 2007 (when only Segment One was in operation) the government was paying the concessionaire fifteen thousand euros a day (C. R. Monteiro, 2007).

### *Metro Mondego*

Just as the Metro Sul do Tejo project, the Metro Mondego began as a proposal by a municipal coalition. The project has been on the drawing board since 2001 and has weathered political infighting and one attempt to start construction that was eventually terminated. As of 2008, Metro Mondego remains in the planning stages, but has begun to resemble the Metro Sul do Tejo project in several ways.

### *The Proposal*

Since the early 20<sup>th</sup> Century, rail service has linked the municipalities of Coimbra, Miranda do Corvo, and Lousã. The 37-kilometer Lousã line, as it is known, has a physical connection with the national rail network in Coimbra, however, the current service operated by Comboios de Portugal (CP) stops approximately one kilometer short of that connection (J. R. Silva & Ribeiro, 2007). CP carries approximately two to three thousand passengers a day on eighteen daily roundtrips between Coimbra and Serpins, a town in the municipality of Lousã (A. Seco, personal communication, February 1, 2008).

<sup>76</sup> It is unclear if these numbers came from the IST and EPFL studies.

In the mid 1990s, the three municipalities served by the Lousã line created a proposal for a modern tram-train operation, which has since developed into the current Metro Mondego project. As conceived, the Metro Mondego would replace and shorten the existing CP service and include approximately thirteen kilometers of new rail infrastructure built on the streets of Coimbra. The project also includes plans for large park and ride facilities in the outlying municipalities of Miranda do Corvo and Lousã.

#### *First Attempt*

After the initial proposal in the mid-90s, the project languished for several years. A state-owned SEE company, Metro Mondego, was created in 2001, but another two years would pass before the project gained momentum. Finally, in 2003, central government, then under the Social Democratic Party (*Partido Social Democrata*, PSD), offered to push the plan forward. Central government stipulated that all three municipalities must be in agreement with the proposal before a concession contract would be tendered.

Concerned about low ridership figures on the Lousã line's extremity, planners shortened the Metro Mondego project by seven kilometers, cutting the municipality of Lousã out of the project as a consequence. In response, the municipality attempted to stop the concession process, but because the Socialist Party (*Partido Socialista*, PS) governed the municipality, the PSD government turned a blind eye, forgetting its stipulation that all the municipalities must agree. The tendering process moved forward.

Before the concession could be awarded, however, the PS took power over central government in 2005. Lousã suddenly had the sympathetic ear it needed and central government invoked the forgotten stipulation for municipal agreement. The municipality refused to accept the project, which was enough for central government to terminate the tendering process (A. Seco, personal communication, February 1, 2008).

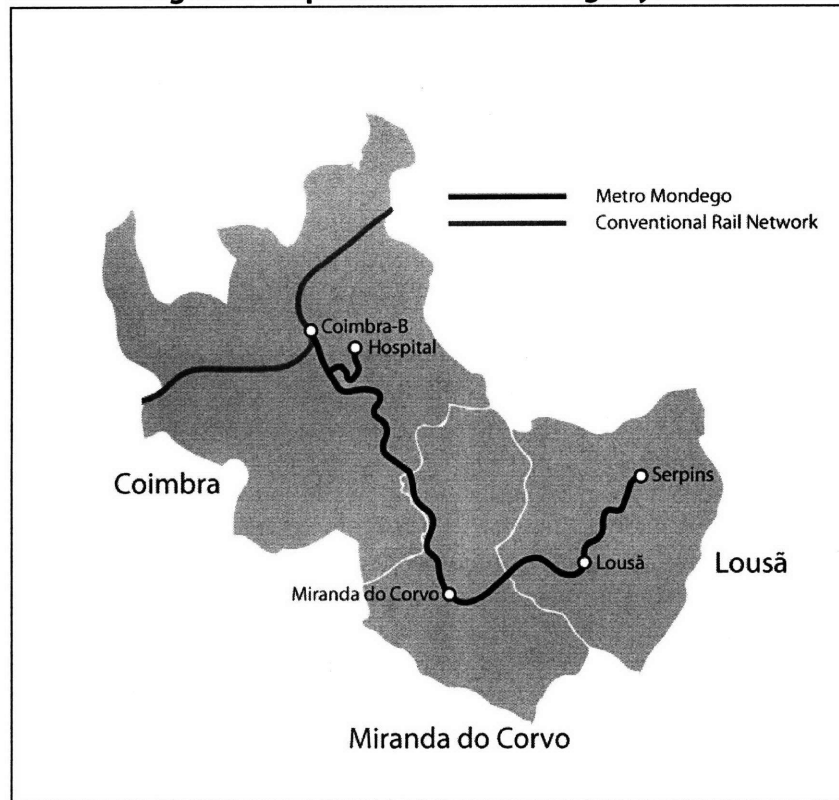
#### *Second Attempt*

A year after the first concession process ended, a new Metro Mondego proposal surfaced. Not surprisingly, the proposal restored service to the municipality of Lousã. In an attempt to speed up implementation, the project was placed under the control of REFER and CP,<sup>77</sup> but progress remains slow. In mid-2008 only the first phase of the project (the rehabilitation of the existing CP right-of-way) had been designed. The remainder of the project, the 13 kilometers of shared right-of-way in downtown Coimbra, has yet to be planned (Lopes, 2008). Figure 9 shows the project as it is currently envisioned.

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<sup>77</sup> The Metro Mondego SEE retains administrative authority.

**Figure 9. Map of the Metro Mondego System**



Project planners anticipate the total cost of the Metro Mondego to be 300 million euros. Financing has not yet been finalized, although it is assumed that some EU Structural Funds will supplement a much larger portion from central government. The original 2003 concession followed the DBOT model similar to the Metro Sul do Tejo project. The current proposal, however, leverages the private sector for construction only. REFER will own the infrastructure while CP will operate the Metro Mondego for a five to six year preliminary period. After the preliminary period project planners say an operating contract will be tendered to the private sector (A. Seco, personal communication, February 1, 2008).

### **Analysis**

Both the Metro Sul do Tejo and Metro Mondego projects raise several questions with respect to equity and fiscal equivalence. As mentioned in the analysis at the end of Chapter 5, recent public transportation infrastructure projects seem to value politics over social equity concerns. Instead of providing transportation services to improve accessibility in a community that warranted investment, the projects implemented capital-intensive services in areas where demand did not warrant them. Furthermore, the municipalities in which the projects were constructed were never asked to provide any capital support for the projects. The project finance process makes no effort to match benefits (no matter how insignificant) with expenditures.

On its surface, the Metro Sul do Tejo appears to have been a political victory for both the municipalities and central government, but also appears to be an inefficient use of public

sector money, which lacked both technical and social merit. Although the Metro Mondego project is only in the preliminary planning phases, it has begun to exhibit characteristics similar to the Metro Sul do Tejo project. Even more troublesome, however, is the project's potential to damage existing public transportation services through uncoordinated competition with Coimbra's municipal bus service, SMTUC.

### ***Project Evaluation***

Although the collective memory of Portuguese transportation professionals claims that "studies were done" for the Metro Sul do Tejo project, there is no evidence to suggest that a proper alternatives analysis was conducted to determine (a) the need for transportation improvements on the south bank of the Rio Tejo and (b) the superiority of light rail over other forms of public transportation, such as bus networks. They may be referring to the studies conducted by IST and EPFL, but, by all appearances, those studies were feasibility studies and not alternatives analyses (Câmara Municipal de Almada, 2008; Governo da República Portuguesa, 2000).

The same criticism can be levied against the Metro Mondego project. There is no evidence that an adequate alternatives analysis was done to establish the tram-train operation as the preferred alternative. Neither the municipalities nor central government have considered options that may improve the existing service or even discontinue and replace it with other public transportation alternatives, such as bus service.

The fact is that central government never required an alternatives analysis to justify the sizeable investments for these projects. In the Metro Sul do Tejo case, debate did not center on the technical or social merits of the proposal, but rather around financing and timing (Governo da República Portuguesa, 1996, 2000). Included in the debate was political rhetoric which affirmed how much the communities of the south bank of the Rio Tejo "deserved" the investment. The same air of deserving surrounds the Metro Mondego project.

A final issue rests with the public record. Very little documentation regarding either project is available to the public. This includes the original proposals as well as approved projects, ridership figures, methodologies, and assumptions.

### ***Fiscal Equivalence***

The final budget for the Metro Sul do Tejo project indicates that the municipalities of Almada and Seixal contributed approximately 15 million euros for mitigation costs associated with the project. This amount represents 4.4 percent of the public sector portion of the project budget (5.6 percent without cost overruns), a significantly smaller level of participation than the twenty percent agreed to in 1995. It is unclear why the municipalities were absolved of this responsibility.

The fiscal equivalence condition, a tenet of efficient public goods provision discussed in Chapter 2, indicates that the beneficiaries of public expenditures should be the ones to fund the expenditures. This is not the case in either the Metro Sul do Tejo or Metro Mondego projects. The direct beneficiaries of the light rail and tram-train systems are the citizens and the economies of the municipalities of Almada, Seixal, Coimbra, Miranda do Corvo, and Lousã. Arguably, central government sees some aggregate economic and social

benefit, yet, the benefits of such systems—congestion relief, travel time savings, emissions reductions, higher mobility or accessibility—are largely felt at the local level.<sup>78</sup>

As it now stands, the municipalities of Almada and Seixal have provided 4.4 percent of the capital costs of the Metro Sul do Tejo project and provide nothing for operating expenses, yet they reap nearly all of the benefit (however small that may be). Although financing arrangements have yet to be finalized, it appears that the municipalities of the Metro Mondego project will not contribute anything toward the project itself. Instead, central government and the EU will foot the bill. Project backers hint that the three municipalities may have to share a “small portion” of the project cost, yet such an arrangement is doubtful considering the current battle Coimbra has with central government over subsidies for its bus service.

This raises the question: if a higher level of municipal participation—in terms of both capital and operating expenses—were required, would either project have moved forward in its present form? Presumably, the municipalities would have been much more deliberate and, perhaps, conservative in their proposal if they knew that, should the project move forward, they would be responsible for a larger portion of capital costs and also exposed to some of the operating risk. While this is not to say that the municipalities should have been entirely responsible for financing the respective projects, the low level of municipal participation has undoubtedly influenced their willingness to pursue specific infrastructure projects.

In the current finance framework, success or failure of the project means very little in terms of municipal finances. Furthermore, it enables the “blame culture” described by Weingast (2006, p. 23). Should either the Metro Sul do Tejo or Metro Mondego projects be ultimately deemed a failure, the municipalities can throw their arms up in desperation and blame central government for its incompetence, using their lack of financial participation as “proof” that they were not responsible.

### **Policy Implications**

The absence of a requisite alternatives analysis and a project evaluation period for transportation improvements enables a costly and highly politicized power play over transportation investments. Current transportation policy in Portugal appears to value transportation improvements for their political value first; their merits second. Thus, the average citizen (and, arguably, the average EU citizen whose tax contributions reach Portugal through Structural Funds) is forced to finance projects that (a) are not vetted through any comprehensive analysis and (b) do not always bring them any benefit.

A culture of sub-national dependence and a level of deep distrust between national and sub-national governments reduce policy making to a series of exchanges, which take on the characteristics of a public performance for power (J.M. Viegas, personal communication, July 13, 2007). The Metro Sul do Tejo exchanges unfolded in the following manner:

- Municipalities band together and make an outrageous demand of central government, unsure of what they’ll get in the end, but sure that they will get something. *The 100-kilometer light rail proposal.*

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<sup>78</sup> There are likely some spillover effects for neighboring communities, however, the systems were built to serve the citizens of the municipalities they serve. The citizens from other municipalities were a secondary consideration.

- Central government cannot afford the political backlash were it to refuse the municipal proposal outright (especially if both levels of government are of the same political affiliation), yet it likely cannot afford the financial outlay the project requires. Instead, it scales back the municipal proposal. *The 28-kilometer proposal that is eventually broken into three phases, effectively reducing it to 13.5 kilometers.*
- Municipalities emerge victorious, having won something from central government. Yet they continue to characterize central government as a source of mistrust. *The Almada demands.*
- Central government, on the other hand, emerges victorious because (a) political fallout was mitigated and (b) it did not give the municipalities everything. *Almada's demands are refused and Phases Two and Three are indefinitely postponed.*

In the end, however, the Portuguese public is saddled with an expense that is of more political value than social or economic value. In the case of the Metro Sul do Tejo, that equates with a cumulative expense of 248 million euros for a project that, by all accounts, is a boondoggle. As one transportation professional close to the project concluded, “Altogether, I think everybody lost: the [central] government, the CMA [Municipality of Almada], the passengers...” (D. Neves, personal communication, May 2, 2008).

While the Metro Mondego project is still unfolding, the political power play has created a conflict of interest for Coimbra. As the municipality scrambles to have the tram-train system built, it has not considered the effects the project may have on its own municipal public transportation service, SMTUC. Officials from SMTUC anticipate that the new tram-train operation will siphon riders from its most profitable routes, yet as of January 2008, there had been no dialogue between the municipality, SMTUC and Metro Mondego regarding integrating service. Without a regional transportation plan that takes the Metro Mondego into account, the municipally operated bus service will face stiff competition from CP.

If central government plans to continue its support of public transportation infrastructure projects, it must tackle the equity and fiscal equivalence problems that current practices create. Policy makers must establish (a) a uniform methodology by which projects and appropriate alternatives are evaluated, (b) policies that direct support to projects with social and technical merit, and (c) requirements that make municipalities partially finance transportation infrastructure projects in their respective jurisdictions. While politics will always play a role in project finance, depoliticizing the process as much as possible will create a more stable and equitable system.

#### **6.4 Transportation Operations Finance versus Transportation Project Finance**

The preceding three sections provided two sets of case studies dealing with transportation operations finance and a final set addressing transportation project finance. Returning to the framework of analysis for transportation policy and finance systems, Portugal's practices for operations and project finance are similar with respect to equity and stability. They are different, however, with respect to the fiscal equivalence condition.



### **Similarities: Equity and Stability**

Portuguese finance practices for transportation operations and infrastructure projects are similar on equity and stability. Both promote mobility over accessibility, offer support with apparently little regard for operational or project criteria, and promote an unstable finance environment for transportation activity.

As previously mentioned, the administrative and fiscal relationship between central government and the state-owned transportation companies promotes the provision of service over the provision of accessibility. The same holds true for project finance. Transportation operations and projects are considered successful merely because they exist. The benefits they provide to society appear to be of secondary practical concern. Carris is championed for the *Rede7* service change, its first in thirty years, while the Metro Sul do Tejo is celebrated for bringing light rail to the south bank of the Rio Tejo (Lino, 2007; Vitorino, 2006). Yet, what does this mean for users? Investigating beyond the press releases reveals that Carris' primary motivation for the service change was not the potential for increased user benefits, but, rather, the fact that MOPTC was forcing the change. As far as the south bank of the Rio Tejo is concerned, is it enough to just bring light rail to Almada and Seixal? Why not prudent transportation investments that target travel demand where it exists?

Operations and project finance are also similar in that support is offered to transportation companies and infrastructure projects regardless of any overarching criteria. State-owned transportation companies receive subsidies and the guarantee of loans from central government without any sort of benchmarking or performance measurement. Similarly, the lack of a project evaluation requirement means that transportation projects need not meet any basic criteria for social benefit or cost effectiveness.

Finally, practices regarding operation and project finance create an unstable environment for transportation services and infrastructure. Central government may be unexpectedly called upon to bail out a state-owned transportation company, an unplanned designation of funds that has the potential to destabilize the entire transportation policy and finance system. Likewise, project finance is done on an ad hoc basis. There is no formal process for evaluating transportation projects and subsequently awarding central government support for multiple budget cycles.

### **Differences: Fiscal Equivalence**

Transportation operations and project finance differ under the fiscal equivalence condition. While both largely violate the condition, the policies that guide funding municipally provided transportation services (a subset of public transportation activity in Portugal) actually preserve fiscal equivalence. Public transportation infrastructure projects, which bring localized benefits, do not adhere to fiscal equivalence, however.

The laws that govern municipal public transportation companies and services prevent them from receiving operating subsidies from central government. Instead, own-source revenue must be utilized in the event that municipally operated systems require subsidy. The general public finance system also works to reinforce fiscal equivalence. Hard budget constraints prevent municipalities from pressuring central government for larger intergovernmental transfers to support municipal activity (including municipal transportation services).

No similar policies establish fiscal equivalence for transportation project finance, however. As evidenced by the Metro Sul do Tejo and Metro Mondego projects,

municipalities reap the benefits (regardless of how small) of infrastructure projects without providing any capital support.

## 6.5 The Path Forward

The Portuguese transportation policy and finance system places a significant burden on the general public finance system, unfairly privileges the Lisbon and Porto metropolitan areas, and enables a costly and highly politicized tug-of-war between central government and sub-national governments with respect to public transportation investments. If Portugal is to create a more equitable and efficient transportation policy and finance system, it must focus its efforts on reforming two principal areas: public transportation operations and project finance. The central government must move toward divesting itself of municipal-level public transportation services operation and it must establish a formal process for transportation infrastructure project finance. Such reform would move toward resolution of the fiscal equivalence and equity issues identified in this chapter.

Municipal-level public transportation services should be operated and supported by municipalities. As a first measure, the State Enterprise Sector must stop accepting new state-owned public transportation enterprises. This is a “low hanging fruit” that would prevent the commitment of even more resources in the forthcoming destatization of public transportation services. The second, and more difficult, measure requires central government to divest itself of the existing state-owned public transportation companies: Carris, Metropolitano de Lisboa, Transtejo, STCP, Metro do Porto and Metro Mondego. Logic suggests that control of the companies and their services be devolved to the municipalities they currently serve.

Fiscal federalism requires authority *and* revenue, however. Therefore, the devolution of public transportation services must be accompanied by efforts to create explicit municipal transportation finance systems. This should be applied evenly to all municipalities regardless of whether public transportation service is drawn from state-owned companies or from municipal companies. All municipalities must have the power to create and levy new taxes, user fees, or other appropriate instruments for the purposes of financing transportation expenditures.

The second area of reform concerns project finance. Central government must create a more equitable and efficient approach to financing transportation infrastructure by establishing a formal project finance process. The process requires dedicated revenue sources for infrastructure provision as well as an established set of criteria for evaluating project proposals. A formal process would allow central government to solicit project proposals for each budget cycle, evaluate the proposals in a uniform manner, and eventually award funds to projects that meet the criteria. Dedicated revenues lend stability to project finance, while criteria can be geared toward projects that display social and technical merit.

A secondary concern of project finance reform deals with fiscal equivalence. The current project finance process allows municipalities to demand infrastructure without committing any support. Co-financing requirements for municipalities and central government have the potential to encourage municipalities to more carefully consider those demands. While it is unlikely that municipalities would bear the full cost of public transportation infrastructure investments in their jurisdictions, central government has a legitimate interest in requiring some level of capital participation from the municipalities that benefit from specific transportation infrastructure projects.

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Reform of the Portuguese transportation policy and finance system is not a question of if, but rather when. Slow growth is predicted for the Portuguese economy over the next few years. Government must therefore work to minimize inefficiencies in public finance where they exist. The transportation sector will undoubtedly be targeted as the nation works to minimize public debt with respect to GDP as part of the Maastricht Treaty. Portugal must seize the opportunity to not only reduce inefficiency in the transportation policy and finance system, but also to imbue it with a more equitable orientation.



## 7 Conclusions

The Portuguese transportation policy and finance system exhibits problems with respect to fiscal equivalence, equity, and transportation externalities. These problems are not unique to Portugal, however. The transportation policy and finance systems of many nations face similar problems and inconsistencies. In light of this, what lessons can be drawn from the Portuguese approach?

### 7.1 Lessons from Portugal

The Portuguese case raises two important points. First, transportation infrastructure and service planning is difficult without an explicit transportation finance system. Second, governments that choose to become involved in the transportation sector through state-owned enterprises must be aware of the challenges such enterprises present. These points stand out as particularly salient lessons for other nations.

#### **The Need For An Explicit Transportation Finance System**

As previously stated, because they are large and often require resources from multiple budget cycles, transportation investments benefit from a stable policy and finance environment. Despite the many political and administrative challenges behind creating an explicit transportation finance system, the Portuguese case shows that, without one, long-term transportation planning is difficult. Furthermore, it demonstrates the bias that can be created when specific transportation activity is privileged over other activity. This is the case with road infrastructure planning and construction in Portugal.

The challenge is therefore to (a) create an explicit transportation finance system—aiming to fulfill the requirements implied by fiscal equivalence, externalities, and equity—and (b) apply that system equally to all forms of transportation. An explicit system implies dedicated revenues that capture externalities and an institutionalized method for applying those revenues to transportation expenditures. This may be through a formal project finance program that solicits project proposals, evaluates them with a uniform set of criteria, and eventually awards funds to projects. An even application of such a system requires similar project finance programs for road, rail, public transportation and non-motorized transportation sectors.

#### **The Challenges of Managing State-Owned Transportation Enterprises**

Government has a legitimate interest in becoming involved in the transportation sector and, as this thesis has demonstrated, involvement can occur to vary degrees. Should government decide to create state-owned enterprises to actually provide transportation services, it must be aware of the challenges it will face in (a) maintaining budget constraints and (b) enacting policy through the state-owned enterprises.

The Portuguese case demonstrates that, once established, state-owned transportation companies are difficult to control. Soft budget constraints sap central government of revenue and the existence of unconditional subsidies means central government has little opportunity to effect change in the companies. Furthermore, reform is much more difficult than simply imposing a hard budget constraint and making subsidies contingent upon

specific performance measures. The state-owned enterprises have become ensconced elements within the Portuguese governance system.

It may seem that the time of the state-owned transportation enterprise has long past in other parts of the world. This is untrue, however. Amtrak is the state-owned rail passenger provider in the United States; China utilizes state-owned shipping, rail and aviation companies to deliver transportation services; and New Zealand is in the process of creating a new state-owned rail enterprise after attempts to privatize rail service failed. Portugal, too, has opted to create new state-owned transportation enterprises. It is likely that other developed and developing nations will also seek to establish similar stakes in transportation activity within their respective economies.

On the surface, the existence of state-owned transportation enterprises does not equate with bad transportation policy and finance. It is important, however, that governments consider the challenges they will face once these enterprises become established. These challenges often influence government's ability to place good transportation policy and finance practices into practice.

## **7.2 The Future of Transportation Finance Mechanisms**

In an ideal world, transportation finance mechanisms would effectively capture all of the benefits associated with transportation activity. Such a scenario would generate sufficient funds to improve transportation systems and mitigate transportation's negative externalities. As the Portuguese case and others show, however, reality is far from the ideal.

Many of the current transportation finance mechanisms—excise fees, recurrent taxes, and user fees—only partially capture the true cost of transportation activity. As governments find it more difficult to secure the revenue necessary to fund transportation improvements, however, they will move toward other mechanisms that are better at capturing more of that cost. Thus, land value capture, congestion pricing, and emissions taxes will emerge alongside existing fuel taxes and tolls as principal mechanisms for financing transportation investments. A government's ability to employ these emergent mechanisms will be a function of political plausibility, administrative capacity, and transaction costs.

In addition to employing finance mechanisms that more closely capture the true cost of transportation activity, it is also likely that government will continue to leverage the private sector to provide transportation infrastructure and services. Well-formulated public private partnerships allow the government to reduce public sector expenditures through the efficiencies of the private sector. Still, the Portuguese case demonstrates that, while public private partnerships can bring significant benefits, they can also go wrong. Government must develop the capacity to identify appropriate private sector partners and establish and administer effective public private partnerships.

Transportation finance systems all across the globe find themselves running out of options in their efforts to secure transportation revenue. It is only a matter of time before the political and administrative barriers to reform are surmounted.

## **7.3 Directions for Further Research**

The analysis of the Portuguese case has established criteria for evaluating transportation finance systems, developed an understanding of the relationship between transportation finance and the larger public finance system, and provided some lessons for developing

sound transportation finance systems. Still, avenues for future research remain with regards to both the Portuguese case, specifically, and transportation finance more generally.

As mentioned in the introduction, there is a need for additional policy-oriented transportation in Portugal. With respect to transportation finance, specifically, additional research is necessary in quantifying some of the problems addressed in this thesis. What is the actual economic effect of the fiscal equivalence problem in public transportation service provision, for example? Furthermore, research must develop specific solutions for the Portuguese case. What would a politically and administratively feasible short-term solution to the fiscal equivalence problem look like? What are best practices for transferring state-owned enterprises to the private sector or to municipal government? This research is vital for defining a direction forward for Portugal in terms of transportation.

Additional research regarding transportation finance is also needed. Public finance systems are often analyzed and compared to one another, but specific mentioned of transportation finance is limited. A comparison of several national transportation policy and finance systems would shed insight into the myriad ways governments can become involved in the transportation sector. How are most systems alike, how do they differ and what policy and finance innovations are being pursued?

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Transportation infrastructure and services are vital elements of economic and social activity regardless of a nation's particular governance system or political ideology. A government's involvement in the transportation sector will depend upon its recognition of transportation externalities and its use of transportation infrastructure and services to accomplish specific goals. However, as the Portuguese case has shown, establishing a sound transportation policy and finance system is difficult. It is a challenge to develop systems that strive to establish fiscal equivalence, internalize transportation-related externalities, and promote transportation equity. Yet the challenge must be met. Economic and social stability on both the national and global scales depend upon human beings and their need to move.





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## Lists of Acronyms

### Tax Acronyms

CA	Contribuição Autárquica <i>Autarchic Contribution</i>
CPRU	Contribuição Predial Rústica e Urbana <i>Contribution for Historic and Urban Buildings</i>
IABA	Imposto sobre o Álcool e as Bebidas Alcoólicas <i>Alcohol and Alcoholic Beverages Tax</i>
ICA	Imposto de Camoinagem <i>Haulage Tax</i>
ICI	Imposto de Circulação <i>Circulation Tax</i>
IJ	Imposto de Jogo <i>Gambling Tax</i>
IMI	Imposto Municipal sobre Imóveis <i>Property Tax</i>
IMS	Imposto Municipal de Sisa <i>Municipal Transfer Tax</i>
IMT	Imposto Municipal sobre Transmissões Onerosas de Imóveis <i>Real Estate Transaction Tax</i>
IMV	Imposto Municipal de Veículos <i>Municipal Vehicle Tax</i>
IRC	Imposto sobre o Rendimento de Pessoas Colectivas <i>Corporate Income Tax</i>
IRS	Imposto sobre o Rendimento de Pessoas Singlares <i>Individual Income Tax</i>
IS	Imposto do Selo <i>Stamp Duty</i>
ISD	Imposto sobre as Sucessões e Doações <i>Inheritance and Gift Tax</i>
ISP	Imposto sobre os Produtos Petrolíferos <i>Fuel Tax</i>
ISV	Imposto sobre Veículos <i>Automobile Tax</i>
IT	Imposto sobre o Tabaco <i>Tobacco Tax</i>
IUC	Imposto Único de Circulação <i>Single Circulation Tax</i>
IVA	Imposto sobre o Valor Acrescentado <i>Value Added Tax</i>
SS	Contribuição Segurança Social <i>Social Security</i>

## Intergovernmental Transfer Acronyms

CMMi	Capacitação Média do Município <i>Average Municipal Capacity</i>
CMN	Capacitação Média Nacional <i>Average National Capacity</i>
EAFRD	European Agricultural Fund for Rural Development
EAGGF	European Agricultural Guidance and Guarantee Fund
EFRD	European Fund for Regional Development
ESF	European Social Fund
FCM	Fundo de Coesão Municipal <i>Municipal Cohesion Fund</i>
FEF	Fundo de Equilíbrio Financeiro <i>Financial Equalization Fund</i>
FEP	Fish Ecosystems Plan
FFF	Fundo de Financiamento das Freguesias <i>Parish Council Financing Fund</i>
FGM	Fundo Geral Municipal <i>General Municipal Fund</i>
FIFG	Financial Instrument for Fisheries Guidance
FSM	Fundo Social Municipal <i>Municipal Social Fund</i>
IDO	Índice Municipal de Desigualdade de Oportunidades <i>Municipal Index of Opportunity Inequality</i>
IDS	Índice Nacional de Desenvolvimento Social <i>National Social Development Index</i>

## All Other Acronyms

AMT	Autoridade Metropolitana de Transportes <i>Metropolitan Transportation Authority</i>
CCDR	Comissão de Coordenação e Desenvolvimento Regional <i>Coordination and Regional Development Commission</i>
CI	Comunidades Intermunicipais <i>Intermunicipal Communities</i>
CP	Comboios de Portugal <i>Portuguese Trains</i>
CU	Comunidades Urbanas <i>Urban Communities</i>
DBOT	Design, Build, Operate, Transfer
DGI	Direcção-Geral dos Impostos <i>Tax Directorate-General</i>
DGTF	Direcção-Geral dos Transportes Terrestres e Fluviais <i>Director General of Land and Water Transportation</i>
DGV	Direcção-Geral do Viação <i>Director General of Traffic</i>
EN	Estradas Nacionais <i>National Routes</i>
EP	Estradas de Portugal <i>Highways of Portugal</i>
EPFL	Ecole Polytechnique Fédérale de Luusanne <i>Federal Polytechnic School of Luusanne</i>
ER	Estradas Regionais <i>Regional Routes</i>
EU	European Union
GAM	Grandes Áreas Metropolitanas <i>Large Metropolitan Areas</i>
GDP	Gross Domestic Product
IC	Itinerários Complementares <i>Complementary Routes</i>
IMF	International Monetary Fund
IMTT	Instituto da Mobilidade e dos Transportes Terrestres <i>Institute of Mobility and Land Transportation</i>
INE	Instituto Nacional de Estatística <i>National Statistics Institute</i>
INIR	Instituto das Infra-Estruturas Rodoviárias <i>Institute of Roadway Infrastructure</i>
INTF	Instituto Nacional do Transporte Ferroviário <i>National Institute of Rail Transportation</i>
IP	Itinerários Principais <i>Principle Routes</i>
IST	Instituto Superior Técnico <i>Superior Technical Institute</i>
MAOTDR	Ministério do Ambiente, do Ordenamento do Território e do Desenvolvimento Regional <i>Ministry for Environment, Spatial Planning and Regional Development</i>
MFAP	Ministério das Finanças e da Administração Pública <i>Ministry of Finance and Public Administration</i>
ML	Metropolitano de Lisboa <i>Lisbon Metro</i>

MM	Metro Mondego <i>Mondego Metro</i>
MOPTC	Ministério de Obras Públicas, Transportes e Comunicações <i>Ministry of Public Works, Transport and Communication</i>
MP	Metropolitano do Porto <i>Porto Metro</i>
MST	Metro Sul do Tejo <i>South Tejo Metro</i>
NUTS	Nomenclature of Territorial Units for Statistics
PIDDAC	Programa de Investimentos e Despesas de Desenvolvimento da Administração Central <i>Program for Investments and Development Expenses of Central Administration</i>
PRACE	Programa de Reestruturação de Administração Central do Estado <i>Restructuring Program for the State's Central Administration</i>
PRN	Plano Rodoviário Nacional <i>National Roadway Plan</i>
PS	Partido Socialista <i>Socialist Party</i>
PSD	Partido Social Democrata <i>Social Democrat Party</i>
QREN	Quadro de Referência Estratégico Nacional <i>National Strategic Reference Framework</i>
RAVE	Rede Ferroviária de Alta Velocidade <i>High Speed Rail Network</i>
REFER	Rede Ferroviária Nacional <i>National Rail Network</i>
SCUT	Sem Custo para o Utilizador (Portagem Virtual) <i>Without Cost for the User (Virtual or Shadow Toll)</i>
SEAOPC	Secretário do Estado Adjunto das Obras Públicas e das Comunicações <i>Secretary of State for Public Works and Communication</i>
SEE	Sector Empresarial do Estado <i>State Enterprise Sector</i>
SET	Secretária de Estados do Transportes <i>Secretary of State for Transportation</i>
SITEE	Sistema Integrado Transportes e Estacionamento de Évora <i>Integrated Transportation and Parking System of Évora</i>
SMAT	Serviços Municipalizados de Águas e Transportes Portalegre <i>Municipalized Water and Transportation Services Portalegre</i>
SMTUC	Serviços Municipalizados de Transportes Urbanos de Coimbra <i>Municipalized Urban Transportation Services of Coimbra</i>
STCP	Sociedade de Transportes Colectivos do Porto <i>Society for Collective Transport of Porto</i>
STUB	Serviço de Transportes Urbanos de Bragança <i>Urban Transportation Services of Bragança</i>
TCB	Serviços Municipalizados de Transportes Colectivos do Barreiro <i>Municipalized Collective Transportation Services of Barreiro</i>
TEN-T	Trans-European Networks - Transport
TIP	Transportes Intermodais do Porto <i>Intermodal Transportation of Porto</i>
TTT	Equipa de Missão da Terceira Travessia do Tejo <i>Team for the Third Rio Tejo River Crossing</i>
TUB	Transportes Urbanas de Braga <i>Braga Urban Transport</i>



## Appendix

**Table A. Interview List**

<b>Interviewee</b>	<b>Title</b>	<b>Agency</b>	<b>Date</b>
Anonymous	-	-	January 30, 2008
Anonymous	-	-	January 31, 2008
Anonymous	-	-	January 31, 2008
Anonymous	-	-	February 7, 2008
Anonymous	-	-	February 12, 2008
Anonymous	-	-	February 12, 2008
Anonymous	-	-	February 12, 2008
Carlos Sousa Bentes	Director of Finance	Carris	February 8, 2008
José Branco	Director, Municipal Directorate of Finance	Câmara Municipal do Porto	February 2, 2008
Rui Nelson Dinis	Secretary General	Estradas de Portugal (EP)	August 1, 2007
Gonçalo Freitas	Director of Finance	RAVE	August 3, 2007
José Pinheiro Henriques	Director, Cabinet of Planning, Strategy, and International Relations	Ministry of Public Works, Transportation and Communications (MOPTC)	February 12, 2008
Rosário Macário	Assistant Professor	Instituto Superior Técnico	August 3, 2007
Jorge Carvalho Mourão	Geographer, Urban Strategic Planning	Câmara Municipal de Lisboa	February 8, 2008
Pedro Nascimento	Aid	Ministry of Public Works, Transportation and Communications (MOPTC)	August 2, 2007
Daniel Neves	Director	Mobilidade	February 7, 2008
Eduardo Borges Pires	Assessor	Ministry of Public Works, Transportation and Communications (MOPTC)	August 2, 2007
João Portela	Director, Department of New Concessions	Brisa	July 31, 2007
Paulo Sá	Chief Financial Officer	Sociedade de Transportes Colectivos do Porto	February 2, 2008
Álvaro Seco	President	Metro Mondego	February 1, 2008
Jorge Silva	Board Member	Instituto da Mobilidade e dos Transportes Terrestres (IMTT)	July 25, 2007
José M. Viegas	Professor	Instituto Superior Técnico	July 13, 2007