

Why Did Mexico Not Privatisise the Electricity Sector? An Application of Prospect Theory

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ABSTRACT

Between 1982 and 2003, as part of an ambitious programme of market reforms, the total number of state-owned enterprises in Mexico was cut from 1,155 to 210. Despite this, the country's energy sector, including the electricity industry, has largely remained in state hands. Presidents Ernesto Zedillo and Vicente Fox presented their projects to privatise the Mexican electricity industry (MEI). However, they were unable to reach agreements with key political players to carry out this strategy. This thesis explores the underlying reasons for this "non-privatisation" by applying the most important behavioural theory of choice under risk, Prospect Theory (PT).

The thesis hypothesises that privatisation of the Mexican electricity industry was not implemented because there were specific conditions that led decision-makers to behave in a risk-averse way. For instance, the privatisation of the MEI is more likely to occur in conditions of a severe crisis in that sector, and that these conditions have yet to occur. This hypothesis draws on psychological arguments derived from PT, which explore behaviour in terms of risk aversion in the domain of gains and risk-seeking in the domain of losses. According to PT, people tend to opt for risky choices when they are experiencing losses. On the other hand, people behave in a very cautious way when they see themselves in the domain of gains. The research offers evidence that the decision-makers involved in the debate of the electricity privatisation projects were in the domain of gains and therefore they did not implement the privatisation.

In this way, the thesis offers a new perspective for understanding the political dynamics of the privatisation proposals. The thesis also makes important contribution to empirical knowledge, offering original insights that cannot be provided by other theoretical frameworks such as rational choice theories. Moreover, the thesis offers an interesting analysis of different economic, social and political factors. This provides key information that is used in a context that supports our PT application. For instance, we study the partial participation of the private sector in the MEI and reviewed historical events that strongly influenced the country's economic and social development.

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CHAPTER 1: INTRODUCTION

Why were the privatisation projects for the Mexican electricity industry (MEI) not implemented? What were the factors that influenced politicians' decision-making processes when defining whether to privatise this industry or not? This thesis explores the underlying reasons for this "non-privatisation" by using the most influential behavioural theory of choice, Prospect Theory (PT). The thesis demonstrates that PT provides an alternative perspective, offering original insights that cannot be provided by other theoretical frameworks. In particular, we analyse how Mexico's main political actors behaved during the debates about the MEI's privatisation proposals. The study also makes an important contribution to empirical knowledge by setting PT alongside more traditional theories of choice applied to political science.

This study seeks an explanation for the incomprehensible behaviour of decision-makers. The Institutional Revolutionary Party (PRI) and the National Action Party (PAN) have supported each other's economic policies many times. Moreover, they share the same economic platform, so privatisations are part of their economic agenda. However, these political parties were unable to reach agreement to implement this economic measure. Privatisations are policies that involve risky situations, and therefore politicians have to make the right decision. In other words, governments have to adequately analyse whether to privatise or not. A wrong decision could generate very high costs for the economy. In this way, we consider that PT can be a very useful methodology to explore the decision-making processes of this political phenomenon. PT provides a descriptive, empirical and systematic way to both explain and predict political decisions made under uncertain situations.

The logic of our theory of choice is straightforward. PT predicts that people tend to make cautious decisions when they are in positive conditions (gains), whereas tend to make risky decisions when they are in bad positions (losses). To determine this risk propensity, we have to know how people frame their choices. In particular, PT requires information related to people's behaviour. This information can be obtained from archival material, newspaper articles, etc. Interviews, speeches or words offer the best evidence to define individuals' risk tendency. Psychological models do not require political researchers to pretend that individuals will or should behave in a specific way that is counterintuitive. Psychological models are based on empirical testing of how people really make decisions in any situation.

Behavioural economics has been accepted in economic science and it has been recently used to design public policies. For instance, the Obama administration's White

House Office of Information and Regulatory Affairs carries out research based on psychological insights. Similarly, the governments of Denmark, France and the United Kingdom have started using behavioural economics to design their public policies. The Cameron administration established the Behavioural Insights Team, nicknamed the Nudge Unit, which applies this sub-branch of economics to public policy. This unit has designed policies that prevent public sector fraud, error and debt cost (Cabinet Office 2012).

However, the application of behavioural economics to political science is very limited. During the 1997 American Political Science Association meeting, Elinor Ostrom (2009 Nobel Prize Laureate in Economics) stated that traditional political economy models have failed to incorporate the important findings of human behaviour. Consequently, they generate “out-of-equilibrium predictions” (Ostrom 1998). She recommended that economists use such findings to improve the theoretical models. Although Ostrom recognised that these models have important limitations, she indicated that they are valuable and offer important insight. It is considered that the reason behind the lack of interest in PT is related to researchers’ opposition to using theories based on psychology. There are no theoretical and technical reasons why the theory cannot be used beyond the prediction of economic phenomena.

Before we apply PT, the thesis offers a review and analysis of the important key political, economic and social events of Mexico. This provides key information that is used in a context that supports our PT application. For instance, we reviewed historical events that strongly influenced the country’s economic and social development. In particular, the thesis discusses how the energy policy became an important factor for the political regime to start the industrialisation process. Moreover, we selected two of the most important privatisation cases to show that that they were not adequately implemented. In terms of the electricity sector, the thesis analyses the partial participation of private investors in electricity generation. The role of the political regime and its structure is also analysed.

The research project is divided into seven chapters. Chapter 2 offers a discussion of the theoretical perspectives on privatisation. It analyses the advantages and disadvantages of public and private ownership. Chapter 2 shows the factors that trigger privatisations, such as weak public finances, and the British privatisation case. Moreover, it examines the important role of regulation in the privatisation process. Chapter 3 provides a review of PT, which starts with an analysis of the inconsistencies of expected utility theory (EUT). We analyse how PT is structured by paying special

attention to its principles: editing, the value function and the weighting function. We then discuss the key characteristics of PT and the solutions to the problems of PT argued by its critics. More specifically, the chapter discusses the empirical application problem and the aggregation problem. A discussion of different applications of PT to political science follows.

Chapter 4 offers a discussion of the different reasons that led developing and developed economies to carry out the liberalisation and privatisation of their electricity sectors. More specifically, we review the cases of the United Kingdom (England and Wales), Norway, the European Union, the United States, Argentina, Brazil, Chile and Colombia. Moreover, the chapter reviews the key characteristics of the electricity models implemented by these countries. We then discuss the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act – and the two electricity privatisation projects proposed by the Mexican government.

Chapter 5 presents a review of the privatisation agenda in Mexico. The chapter starts by discussing key historical events that influenced the country's economic development. In particular, we discuss the different economic measures carried out under President Cárdenas' administration in the energy industry. The chapter discusses the development of the hegemonic political structure of the Institutional Revolutionary Party (PRI). We analyse two privatisation cases, in the telecommunications and banking sectors. We then explore the participation of the independent power producers (IPPs) in the MEI.

Chapter 6 offers our PT application to understand why the two privatisation proposals presented by Presidents Ernesto Zedillo and Vicente Fox were not implemented. The chapter develops two PT models that determine how the decision-makers from the country's three main political parties saw themselves in the domain of gains of PT's value function. Our research focuses mainly on analysing the decision-making process during the debate about the privatisation project presented by President Vicente Fox. Chapter 7 analyses other alternative explanations behind the delay of the MEI's privatisation programme. Specifically, these approaches offer robust reasons that contrast well with our PT model. Chapter 8 draws the conclusions of the thesis. Moreover, it offers an analysis of the possible factors that can lead to a change in the MEI's SQ and a discussion of the application of prospect theory to group behaviour.

CHAPTER 2: THEORETICAL PERSPECTIVES ON PRIVATISATION

2.1. INTRODUCTION

Privatisation can be defined as the transfer of ownership rights of State Owned Enterprises (SOEs) to private investors. This policy has been on the economic agendas of all countries since the late 1970s. According to the OECD (2002), from 1990 to 2001, the average annual value of divested assets in the world reached a sum of US\$ 54 billion, and from 1999 to 2001 the amount generated from the sales of SOEs in accession countries reached \$60 billion.

What are the theoretical bases that support public and private ownership? What motivates governments to divest ownership and how is it implemented? Can privatisation only be studied under economic criteria? What does the political economy establish about privatisation? What is the future of privatisation? In this chapter, we offer a conceptual framework that attempts to answer these questions, drawing on literature from important scholars. Essentially, it provides a theoretical background of privatisation for our main analyses in the following chapters.

This chapter is divided into four main sections. Section 2.2 provides a discussion of the main theoretical elements that sustain public and private ownership. It indicates that a structure of public ownership promotes social welfare, as it regulates market failures, avoids incomplete contracts and prevents worker exploitation. Furthermore, this section describes government failures in terms of private ownership. For instance, it specifies that public enterprises are more prone to X-inefficiency. We find that the theoretical bases developed to sustain the two kinds of ownership do not provide enough evidence to establish which form represents the best organisational structure.

Section 2.3 offers an analysis of the main variables that have triggered privatisations around the world. In particular, it describes that indebted economies tend to privatise SOEs, since the resources from the sales can be used to square their public finances. In this sense, the British case illustrates that SOE inefficiency and adverse economic conditions can be very good reasons for divesting ownership. Here, special attention is given to the way in which the programme was implemented and its mechanisms, such as the RPI-X regulatory control for pricing. The last part of this section describes the stages and methods for conducting the reform. Then, it discusses the regulation's key role in guaranteeing the benefits of privatisation.

Section 2.4 presents the political economy of privatisation. It is the critical part of the chapter and is organised in the same way as section 2.2. It discusses that under purely economic grounds it is difficult to decide which of the two kinds of ownership is the most adequate to run SOEs. Moreover, this section discusses the fact that existing economic theories do not provide enough arguments to solve this dichotomy.

It then presents different positions about the circumstances that have pushed governments to divest their assets, such as the analysis by the 2001 Nobel Prize-winner in economics Joseph Stiglitz. Finally, this section discusses the lessons from privatisation and the agenda for the next 20 years, during which Megginson (2005) anticipates that there will be three mega-trends: 1) oil-producing countries, mainly OPEC economies, will privatise; 2) the economic boost of Arab countries in the Middle East will lead to the reform of Arab SOEs; and 3) countries will increase their privatisation programmes in the public transport sector.

2.2. THEORETICAL BASES OF PUBLIC AND PRIVATE OWNERSHIP

2.2.1. Introduction

What are the main theoretical bases that sustain the two kinds of organisation? In this section we present different arguments that provide the framework for the theoretical analysis of privatisation.

Public and private ownership have different objectives. In the case of public firms, one of the main goals is to maximise social welfare and promote economic growth. For instance, a state-owned enterprise can be used to generate employment and yield high output at lower prices in order to achieve macroeconomic targets such as low inflation. However, SOEs are increasingly considered to be inefficient due to government failures; thus, private ownership is conceived as an optimal solution to this problem (Che 2003, Shleifer 1998, and World Bank 1995).

This section is divided into two parts. Section 2.2.2 discusses the theoretical elements of public ownership. It pays special attention to the benefits of public ownership, such as lower prices, monopolistic control and the prevention of incomplete contracts. Section 2.2.3 discusses the problems facing SOEs. Particularly, it illustrates how these organisations are an obstacle for the countries' public finances and how they carry out non-economic objectives.

2.2.2. Public Ownership

(i) Public enterprises are structures that promote social welfare

SOEs are considered to be important for various reasons. According to Conolly and Munro (1999), public ownership is preferred because it is an engine of growth and a political buffer, gives power to people and political patronage, provides equity and redistribution, and offers control over monopoly power.

Similarly, Yarrow (1986) and Vickers and Yarrow (1988) consider well-defined justifications for public ownership in democratic societies. Both studies point out that benevolent governments tend to act under an efficient democratic organisation. Particularly, Yarrow (1986) indicates that public ownership has advantages over private ownership in terms of monitoring SOEs' social targets for two main reasons: it leads to an equilibrated distribution of public goods; and it can take rapid corrective action when there are deviations between private and public returns in goods. Moreover, he states that the discontent with SOE performance is attributed to the political dynamics or "political market imperfections" instead of the public ownership's intrinsic limitations (e.g. economic constraints). Finally, he considers that the problem with SOEs is more related to the lack of competition instead of considering which of the two kinds of ownership is the most appropriate¹.

Vickers and Yarrow (1988) state that governments with efficient political markets are able to maximise social welfare. In this sense, if there is fair competition between political players, policies can be effectively implemented. Also, Shapiro and Willig (1990) reach the same opinion when they develop a public manager's utility function as a combination of private and social welfare. They conclude that when the political dynamics work under normal conditions, state managers are obligated to achieve social instead of private welfare.

(ii) Public ownership is a mechanism that regulates market failures

Another motive to maintain social ownership is to prevent monopolistic behaviour. Public firms are natural monopolies, which means that they are organisations that exhibit economies of scale. Consequently, they are the only suppliers in the market and can set prices at a social optimum level at which people are able to acquire determined commodities².

¹ For more information about this argument see Kay and Thompson (1986), Cook and Kirkpatrick (1988) and Shapiro and Willig (1990).

² Natural monopolies are mainly network industries such as telephone, water, gas and electricity.

One of the main criticisms by SOE supporters of private ownership is that its production level is less than the social optimum. If natural monopolies become private, they could be able to manipulate prices and set them at a level above the social optimum. When prices are set above the social optimum and, more specifically, at a monopolistic level, the quantity supplied by the private monopoly is less than the level offered by SOEs. Moreover, since natural monopolies produce with lower costs, they can eliminate competitors from the market and then set prices above production costs.

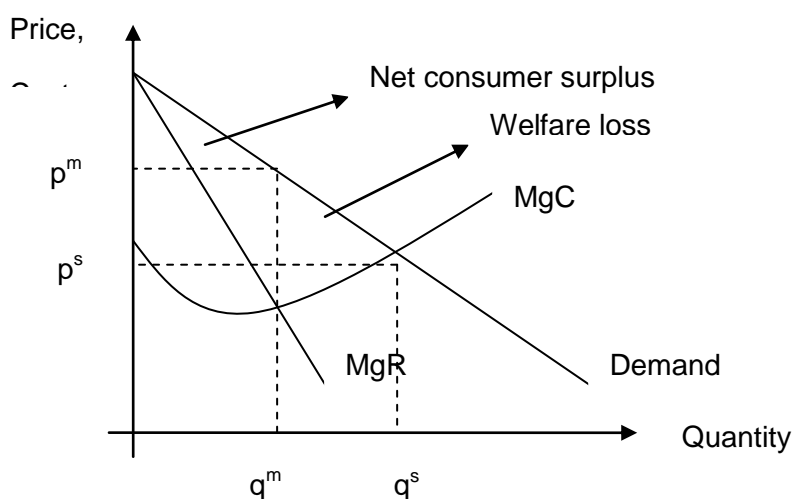


Figure 2.1: Differences in prices and quantities between public and private firms

Figure 2.1 shows the difference in prices and quantities between a natural monopoly under private and public ownership. When prices are determined at a monopolistic level, where the marginal cost (MgC) is equal to the marginal revenue (MgR), the price and quantity obtained is (p^m) and (q^m) respectively.

Conversely, when SOEs set prices at the social optimum level, at the MgC level, the price obtained is (p^s). It is evident that when the monopolistic condition ($MgR=MgC$) is satisfied, prices are higher (p^m) and output is lower (q^m), whereas public firms offer lower prices (p^s) and provide more output (e.g. water, electricity, etc.) to the economy. The quantity that the economy does not receive under private ownership is ($q^s - q^m$) at a price increase of ($p^m - p^s$).

(iii) Public ownership is a mechanism that prevents asymmetric information and problems with incomplete contracts

Problems with incomplete contracts and asymmetric information can be avoided with public ownership. Governments and firms carry out transactions under contracts in which the terms and conditions of exchange are defined. However, when contracts are incomplete (e.g. contracts to generate electricity), they can lead to opportunistic action which benefits only one party. This situation is called the *holdup problem*³.

According to Shapiro and Willig (1990), holdup problems can be effectively faced by SOEs for three reasons. Firstly, governments can interfere to correct contract irregularities. Secondly, policy makers and public managers can access privileged information from private firms (e.g. costs), whereas private enterprises tend to have difficulty obtaining it from their competitors. In other words, since SOEs are supported by state power, they can force private organisations to give them information. Finally, the organisational plans of SOE managers can be monitored by an adequate political system.

In the same way, Laffont and Tirole (1991) establish that agency problems can be avoided under social ownership. In other words, the chain of command, or the delegation process, is more effective under public ownership, because SOEs have to serve only one level of command (the government), whereas private firms have to serve two levels: investors and regulators.

(iv) Public ownership as a structure to prevent the exploitation of workers

Although there is no agreement about a Marxist theory of the state⁴, Marxist economists have considered that under a capitalist mode of production, national structures such as SOEs and state constitutions can be instruments to prevent the exploitation of workers. Marxism divides an economy into two social groups: the proletariat and the bourgeoisie or capitalists. On one hand, proletarians are considered to be the people who do not have the means of production (e.g. financial resources), or are not the owners of firms and receive remuneration for their work. On the other, the

³ For an extensive discussion about the holdup problem, see Church and Ware (2000), Cabral (2000) and Tirole (2001).

⁴ According to Barrow (2000), the Marxist theory does not explicitly present a theory of the state. However, it indicates that there are theories such as instrumentalism, structuralism, derivationism, systems analysis and organisational realism that try to discuss the role of the state under a Marxist framework.

The reason that the Marxist theory does not provide a theory of the state is because it considers that a capitalist state's main function is to assist the process of capital accumulation (Ham and Hill 1984). In other words, it considers that the state sets up the bases in which firms are able to generate profits. Some reasons that the state is considered to be a mechanism that facilitates firms' profit maximization are described in Miliband (1969).

bourgeoisie is the part of society that owns those means and pays for the work (labour-power) it receives from the proletarians.

Under this structure, the theory indicates that capitalists will always try to get the workers' *surplus-value*. In other words, capitalists are not willing to pay workers an exact amount of money according to the number of hours they work. So, capitalists keep the surplus-value and continually reinvest it in the production process⁵.

In this sense, it can be understood that under public ownership, workers are better off. It means that workers' minimum standards can be protected and therefore avoid capitalists' exploitative actions.

2.2.3. Private Ownership

(i) SOEs are more prone to X-inefficiency

X-inefficiency (X-I) is one of the main problems facing firms⁶. X-I occurs when firms have higher costs due to a weak internal structure or a lack of competition. In the case of private firms in a competitive market, firms with X-I are unprofitable and may not be able to remain in business. However, when firms are monopolies, they can remain profitably in business (Carlton and Perloff 2000)⁷.

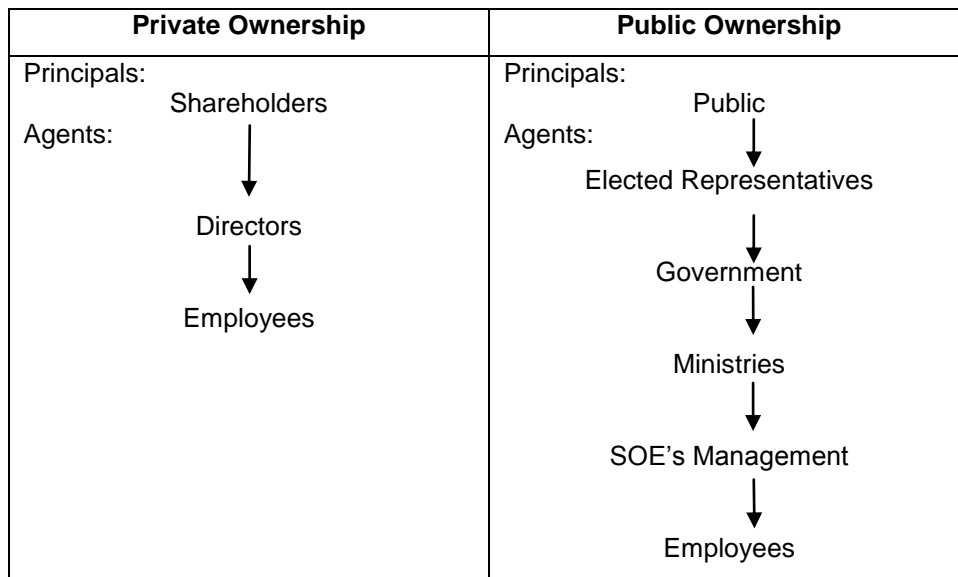
Public monopolies are more liable to X-I. This is because of agency problems, which refer to the fragile interaction between a principal and an agent. In SOEs, agency problems are more complex due to the chain of command between principals and agents (see Table 2.1). Under private ownership, the chain is shorter and therefore agency problems are easier to regulate.

⁵ See Marx (2004).

⁶ X-inefficiency theory was developed by Leibenstein (1966). Frantz (1988) gives an introduction to and a complete analysis of X-inefficiency.

⁷ In monopolistic conditions, an X-I firm without competitors will remain in the market. However, since it is the only firm, it cannot compare its economic efficiency with other firms in order to know whether it is working efficiently or not. See Carlton and Perloff (2000) for a detailed discussion.

Table 2.1: Flow of public and private information from principals to agents



Source: Conolly and Munro (1999)

Agency problems occur when principals (e.g. public managers) are not able to monitor the actions of agents (e.g. workers), leading to divergent objectives. This implies three aspects: asymmetric information, different aims, and no costless observation (Munro 2003).

Under the first aspect, it is established that agents' actions cannot be perfectly monitored due to asymmetric information. In other words, it is difficult for public managers in large organisations (e.g. SOEs) to monitor employee actions, such as employee productivity. This situation minimises the principal's objectives (e.g. cost control) and at the same time modifies a firm's economic performance. In addition, it is considered that asymmetric information protects public managers from political actions and gives them a good position in terms of key information about firms' performance (Vickers and Yarrow 1988, 1991a). For example, when managers have information about firm costs or understand how firms operate, they get a privileged position over politicians who do not know such variables. Similarly, since they have this information, they have little reason to fear punishment for inefficiency (Megginson 2005).

The second aspect states that divergent goals between principals and agents lead to higher X-I levels. Here, employee objectives contradict public manager targets. For example, an employee goal may be to gain political power within the enterprise or the union. So, workers' attention is deviated to other unproductive activities. Haskel and Sanchis (1995) proved this by modelling worker effort under a bargaining approach. On

one hand, it indicates that since the private sector is only concerned with profit, it insists on higher effort. On the other, it considers that SOEs provide lower effort because they have broader social goals in mind, including the welfare of union members. Also, Dixit (1997) points out that numerous principals lead to different objectives and low incentives for managers to promote efficiency in SOEs.

In the same way, a combination of asymmetric information and divergent goals can occur. In a model based on the incomplete contract theory, Schmidt (1996) establishes that principals that cannot perfectly observe a firm's economic performance will provide more financial resources (e.g. subsidies) so that companies produce at an efficient level. So, public managers are less interested in maximising a firm's economic performance, as there are additional economic resources available in the company's budget. Consequently, private ownership is a better option, because governments would not have to subsidise SOEs.

Finally, the third aspect implies that the cost of monitoring the agent is not viable⁸. For instance, politicians who wish to regulate manager actions will desist from doing so because the costs of reasonably improving firm performance will be higher and political compensation will be lower (Megginson and Netter 2001)

(ii) SOEs represent an obstacle to public finances

SOEs have presented an increasingly serious problem for governments to square public finances (La Porta et al. 1999). First, since SOEs are inefficient, governments have to provide subsidies and transfers, which increase the primary deficit⁹. In other words, if the primary deficit does not change or keeps increasing, the total deficit will continue to increase due to the domestic debt which the government has to employ to reduce the deficit. This means that the government could contract more debt to reduce the costs of inefficiency caused by SOEs.

Secondly, SOEs constitute a potential factor to trigger debt crisis. This situation is related to the above argument. According to Ramamurti (1992), fragile economies are more prone to debt crises due to the excessive external borrowing needed to maintain SOEs. The origin of this government failure is found in what is called the *foreign-*

⁸ Mas-Colell et al. (1995) and Varian (1992) indicate that monitoring agent behaviour is costly and almost impossible due to the involved parties' interests. In fact, they state that it is complicated for a firm to determine how productive its workers are.

⁹ The primary deficit constitutes the fiscal deficit minus interest payments. The fiscal deficit is defined as the difference between the revenue receipts and total expenditure.

exchange problem, which is caused by the banking system's willingness to provide a high quantity of financial resources and the government's irrational behaviour to obtain them.

For the banking system, lending to SOEs represents an opportunity to provide safer loans. It is understood that financial contracts with governments are guaranteed by the governments themselves. This means that banks can be sure that the capital will be returned to them. So, they are willing to lend to governments and, at the same time, it represents a convenient financial source for SOEs.

SOEs overestimate the banking system's willingness to borrow, leading to a loss of balance in public finances. It has been established that in order to put less pressure on fiscal revenues, external financing can be adequately used. However, SOEs tend irrationally to use more than the needed funds to undertake their programmes¹⁰. In addition, the resources are not channelled to the planned activities but diverted to other causes¹¹. Consequently, the debt increases, damaging the country's public finances.

(iii) SOEs are inefficient because they are used to carry out non-economic goals

Since SOEs respond to political targets rather than the market, they are forced to carry out different objectives that make their economic structure vulnerable. Shirley and Walsh (2000) and Shleifer and Vishny (1994) note that politicians use public enterprises as a mean to obtain benefits and to modify the political market.

The first anomaly caused by the political way in which SOEs are managed is the deviation of economic resources to interest groups. According to Shirley and Walsh (2000) and Shleifer and Vishny (1994), political actors find it easier to transfer funds from SOEs to influential groups due to the non-transparent operations within these organisations. Using resources directly from the budget can constitute a risky operation for politicians¹². So, they persuade SOE managers to perform determined objectives such as providing high subsidies or concessions to well-connected groups.

In addition, the resources of SOEs can be subtracted to finance political campaigns. In return, public managers receive, among other elements, high budgets, protection and a

¹⁰ The excess of funds is used to cover the costs of SOEs' inefficiencies.

¹¹ Ibid.

¹² Although it is risky for politicians to directly employ resources from the budget, it has been proved that some governments use the fiscal policy for political purposes. See, for example, Gonzalez (2002); Looockwood et al. (2001); Cameron and Crosby (2000); Treisman and Gimpelson (1999). These studies analyse this behaviour under the political business cycle approach.

flourishing political career. Clarke and Xu (2004) establish that managers (bribe takers) are more prone to illegal actions in countries with larger constraints on utility capacity, lower competition levels in the utility sector and where utilities are state-owned. Different implications of corruption within the public sector are illustrated in Friedman et al. (2000) and Johnson et al. (2000).

A second irregularity is the use of SOEs as electoral vehicles. In other words, under public ownership, utilities are employed to attract more electorate to remain in power. For instance, *white elephants* represent projects in which SOEs over-invest to relatively increase the quality or availability of infrastructure services (Henisz and Zelner 2001). By increasing investment, it is intended to provide visible and immediate benefits, such as increased employment to determined groups of individuals who perceive this as economic improvement from the incumbent party. White elephants are built based on political rather than economic considerations. As a result, SOEs tend to operate inefficiently¹³.

Finally, it has been strongly established that public ownership leads to corrupt behaviour among SOE junior staff as well. Under the relationship principal-agent-client, corrupt deals are performed between the last two parties. On one hand, agents' financial constraints and the lack of monitoring lead agents to force customers to pay an additional amount of money for the services they require. Also, this situation is motivated when customers fail to fulfil the terms of the service's contract. On the other hand, when customers wish for special consideration of their needs, such as new electricity connections, quick attention, falsification, etc., agents accept bribes from customers (Davis 2004). As a consequence, corrupt agent behaviour affects enterprise efficiency, which is reflected in the loss of economic resources when bribes are accepted instead of charging fees.

2.2.4. Summary and Conclusions

In this section we discussed the theoretical arguments behind public and private ownership. SOEs are considered to be important because they represent an engine of growth and a political buffer, give power to people and political patronage, provide equity and redistribution, and offer control over monopoly power. Similarly, it was established that public ownership could prevent worker exploitation.

¹³ Ibid.

The main criticism of public firms is X-inefficiency. X-I occurs when firms have higher costs due to a weak internal structure or a lack of competition. Public monopolies are more liable to X-I due to agency problems. Moreover, it was illustrated that SOEs are inefficient because of the non-economic targets set up by politicians.

In conclusion, it has been shown that in terms of theoretical bases, both kinds of organisation can be located in the same position. In other words, there are enough elements that influence the choice for either public or private ownership. However, it is important to point out that in the case of the private ownership analysis presented in section 2.2.3, the attention was focused on why the state fails to allocate resources efficiently rather than focusing on the theoretical arguments that support private ownership. The reason that this happens is developed in section 2.4.

2.3. FORCES DRIVING PRIVATISATION

2.3.1. Introduction

What has motivated governments to divest ownership and how is it implemented? This section provides the main elements that have triggered the implementation of this structural reform and the different stages involved in it.

The section is divided into four parts. Section 2.3.2 explains why privatisation is recommended for public finances. Section 2.3.3 pays special attention to the UK privatisation programme as the guiding model for other governments. It illustrates its principal features, such as the methods in which British SOEs were sold. Section 2.3.4 focuses on how privatisation is conducted and the regulation's key role in guaranteeing the benefits of any divestiture programme.

2.3.2. Structural Adjustment

Although governments have had different reasons to divest SOEs, the common factor is the achievement of economic efficiencies under a policy of structural adjustment. As was shown in section 2.2, there are different elements that explain public enterprise inefficiency. In this context, privatisation emerges as the cure for such government failures.

Selling public utilities provides a means to bring balance to public finances. Firstly, when SOEs are divested, governments no longer need to invest in inefficient

organisations¹⁴. Secondly, the resources that were once used for their operations can be reallocated to other activities. For example, by selling SOEs, the reduction of outstanding public debt and determined taxes can be achieved without cutting public expenditure. Third, government's debt instruments, such as debt-equity swaps, have been admitted in payment of privatised companies, particularly in indebted economies like Mexico and the Philippines (Bortolotti et al. 2003).

In addition, privatisations have indirect effects on public finances. Divestiture programmes send positive signals to financial markets. They can lower the political risk over time leading to an increase in the economy's credibility, which is reflected in a better credit rating for government bonds. Moreover, it produces lower interest payments and easy entrance to capital markets to finance budget deficits¹⁵. Governments with financial difficulties have more reasons to privatise.

2.3.3. The British Privatisation Case

Governments have been strongly motivated to sell SOEs due to the successful and pioneering divestiture programme carried out in the UK. It started in the late 1970s during the Thatcher administration and ended in 1997. The reasons that motivated it were diverse, including ideological and political reasons, but economic efficiency seemed to be the principal motive.

The causes of this inefficiency were varied. According to Conolly and Munro (1999), during the 1960s and 1970s, SOE objectives were set under a series of White Papers which defined how these firms were to be managed. For instance, these documents originally stated that public services had to be provided at marginal cost levels, which did not allow SOEs to obtain a reasonable return on investment. Moreover, the White Papers did not establish the firms' social objectives, nor tried to limit ministerial or political interference. This situation was then modified and the White Papers incorporated financial goals and rates of return that allowed companies to obtain financial resources¹⁶.

However, the panorama did not change and other difficulties arose such as the government's incapacity to monitor, evaluate and implement those targets. In this

¹⁴ Jones et al. (1990) provides a cost-benefit methodology to analyse potential privatisations. According to the study, governments should sell SOEs when welfare under public ownership is less than that under private ownership plus a sale premium.

¹⁵ Ibid.

¹⁶ In 1967, the initial rate of return was 8% and by 1978 it was reduced to 5%.

sense, since SOEs were seen as highly ineffective institutions, privatisation was regarded as a means to break with the financial burden of loss-making activities (Arbomeit 1986).

Another variable that triggered the implementation of the divestiture programme in the United Kingdom was the economic conditions at that time. When the shift from public to private ownership was initiated, the economy was heading towards a deep recession with a high unemployment level and a tight government budget (Galal and Shirley 1994). Such depression was attributed, among other elements, to the oil price shock, the overblown public sector and, more particularly, to SOEs that were intrinsically inefficient (Sanderson 1997 and Foster 1994). For Letza et al. (2004), these elements challenged Keynesian economics and the ideology of nationalisation.

Table 2.2: Comparisons of British industries before and after the Thatcher administration

| Activities | Employment (thousands) 1978-9 | Output per Head % per annum | | Total Factor Productivity % per annum | |
|------------------|-------------------------------------|--------------------------------|---------|--|---------|
| | | 1968-78 | 1978-85 | 1968-78 | 1978-85 |
| British Rail | 243 | 0.8 | 3.9 | - | 2.8 |
| British Steel | 190 | -0.2 | 12.6 | -2.5 | 2.9 |
| Post Office | 411 | -1.3 | 2.3 | - | 1.9 |
| British Telecomm | - | 8.2 | 5.8 | 5.2 | 0.5 |
| British Coal | 300 | -0.7 | 4.4 | -1.4 | 0 |
| Electricity | 160 | 5.3 | 3.9 | 0.7 | 1.4 |
| British Gas | 102 | 8.5 | 3.8 | - | 1.2 |
| National Bus | 64 | -0.5 | 2.1 | -1.4 | 0.1 |
| British Airways | 58 | 6.4 | 6.6 | 5.5 | 4.8 |
| UK Manufacturing | - | 2.7 | 3.0 | 1.7 | - |

- Not available.

Source: Conolly and Munro (1999).

Table 2.2 shows the industries' performance before and after Thatcher's government. It can be seen that SOE productivity and output were low under public ownership. However, these variables increased in the following years after she was elected by the Conservative Party to be Prime Minister.

The structure of privatisation was considered a very ambitious and innovative strategy (Galal and Shirley 1994). First, it divested a large number of firms that employed more than one million people, accounted for 10% of gross domestic product, 17% of the industrial capital stock and 15% of gross investment (Yarrow 1993). And second, it was developed and rapidly implemented with determined obstacles (e.g. political pressure, administrative complexity, profitability and social influence) that were effectively faced

by the UK Government¹⁷. Consequently, by 1992 only three companies were still under public control (see Table 2.3).

Table 2.3: Major privatisations in the United Kingdom

| Companies | Date | Proceeds (£million) | Expenses (£million) |
|--------------------------|--------|------------------------|------------------------|
| BP | 1979 | 290 | - |
| British Aerospace | 1981 | 149 | 6 |
| Cable and Wireless | 1981 | 224 | 7 |
| Amersham International | 1982 | 63 | 3 |
| Britoil | 1982 | 548 | 17 |
| Associated British Ports | 1983 | 22 | 2 |
| BP | 1983 | 565 | - |
| Cable and Wireless | 1983 | 224 | - |
| Enterprise Oil | 1984 | 393 | 11 |
| Associated British Ports | 1984 | 52 | - |
| Jaguar | 1984 | 294 | - |
| British Telecomm | 1984 | 3,920 | 263 |
| British Aerospace | 1985 | 550 | - |
| Britoil | 1985 | 450 | - |
| Cable and Wireless | 1985 | 600 | - |
| TSB | 1986 | 1,360 | - |
| British Gas | 1986 | 5,600 | 360 |
| British Airways | 1987 | 900 | 42 |
| Rolls-Royce | 1987 | 1,360 | 29 |
| BAA | 1987 | 1,280 | 43 |
| BP | 1987 | 7,200 | - |
| British Steel | 1988 | 2,500 | 46 |
| 10 Water Authorities | 1989 | 5,400 | 131 |
| 12 Electricity Companies | 1990 | 5,180 | 191 |
| National Power/Powergen | 1991 | 2,100 | 79 |
| Scottish Power | 1991 | 2,900 | 98 |
| Trust Ports | 1992 | - | - |
| Coal Industry | 1995 | - | - |
| Railways | 1995-7 | - | - |
| Nuclear Energy | 1996 | - | - |

- Not available.

Source: Connolly and Munro (1999).

Table 2.3 shows the major privatisations in the UK. Since the divestiture programme was mainly implemented under a general flotation, the firms' shares were sold in different years¹⁸. On the other hand, the programme was innovative for determined reasons; one of these elements was a new form of arm's-length regulation based on a price cap (Galal and Shirley 1994). According to Martin and Parker (1997), this structure considered a RPI - X system, which is the retail price index (RPI), or the rate of inflation minus an *efficiency factor* "X".

¹⁷ Ibid.

¹⁸ Flotation refers to the action of selling shares in a company.

The X factor is set occasionally for each industry in order to reproduce the scope for cost savings in that industry. For example, if the X factor were set at 2%, then overall prices in the sector would be authorised to increase by the RPI - 2% each year until the next price evaluation. The purpose of the RPI - X regulatory control for pricing established in the UK was mainly to agree a reasonable profit level between the firm and the regulator. In other words, at the moment of privatisation, the X factor can guarantee an adequate flotation and can be used to regulate firms' market power post-divestiture¹⁹.

The other original characteristic of the programme is related to the financial method in which SOEs were sold. In this sense, there were three major privatisation options: general flotation, the golden share, and franchising and contracting out (Connolly and Munro 1999). The first mechanism consisted of offering bids for the number of shares under a declared price. Here, the purpose was to promote broader share ownership by giving preference to smaller bids and employees. However, since there was no previous experience of selling monopolies, it was difficult to establish share prices. Consequently, prices were underestimated, leading to controversial discussions (Jackson and Price 1994).

The second mechanism was designed to give a political or ideological base to the assets. In other words, by retaining a considerable fraction of the privatised firms' shares, the UK government could preserve part of the companies' national identity. Similarly, this policy could be used to control some agency problems or the problem of asymmetric information between the principal (shareholders) and the agent (managers). At present, the government keeps golden shares in eighteen of the privatised firms.

Finally, franchising and contracting out were instrumented to give the private sector the right to supply determined services. The former system consisted of giving the responsibility to private firms to provide services under a regulatory framework. For example, the government has been selling the rights to independent television producers to manage commercial stations. In the latter system, mainly used by local governments, services such as catering and cleaning are provided by external companies and paid for by the authorities. For example, in NHS hospitals, the areas of cleaning, security and catering are run by determined companies such as Serco, a

¹⁹ To guarantee a successful flotation, the X factor had to be set at a low level.

private company that hires and trains its own employees in partnership with Manpower. Moreover, it plans the whole organisation of such services.

2.3.4. Privatisation and Regulation

How do governments divest SOEs? Divesting public firms is considered to be a difficult task that does not have to be thought of as a single situation, the sale of an asset, but as a complete process that has to be applied for each company.

(i) Privatisation

According to Megginson (2005), the privatisation process has three main stages: preparation; method of sale and the offering price; and finally, the sale of SOEs to private buyers. The first stage involves preparation of the firm and the sequence in which companies have to be sold. Bornstein (1999) provides a good classification that illustrates how these actions can be carried out²⁰. It is based on the observable characteristics of different sectors in developing economies such as Poland, Hungary and the Czech Republic (see Table 2.4).

²⁰ According to Megginson (2005), such classification can be applied to any country that wishes to know how and in what sequence public assets can be privatised.

Table 2.4: Sector/branch characteristics affecting the scope and sequence of the divestiture of public assets

| Branch | Characteristic | | | | | |
|--------------------|------------------------|------------------------|----------------------------------|-----------------------------------|---------------------------|--|
| | Already Partly Private | Small Capital Required | Substantial Restructuring Needed | Foreign Direct Investment Crucial | Possibly Deemed Strategic | Special Regulatory Framework Essential |
| Retail trade | x | x | | | | |
| Consumer services | x | x | | | | |
| Housing | x | x | | | | |
| Agriculture | x | x | x | | | |
| Light industry | | | x | x | | |
| Heavy industry | | | x | x | x | |
| Banking | | | x | x | x | x |
| Electricity | | | x | x | x | x |
| Telecommunications | | | x | x | x | x |

Source: Bornstein (1999).

Note: an “x” means that the characteristic affects the divestiture of the SOE considerably in the branch.

Table 2.4 shows the divestiture procedure and sector characteristics. It indicates that the retail trade, consumer services and housing can be the first activities to be privatised due to their already private participation. Consequently, the programmes can be easily performed without any controversial debate. Moreover, little public capital is required to prepare and make them competitive. However, the agriculture sector will need to be capitalised if it belongs to a developing country.

The other remaining activities require special attention. For instance, light industry²¹ in developing economies is fully state-owned and consequently requires capital for infrastructure and needs an adequate restructuring programme and some foreign direct investment (FDI) to be economically attractive. In developed countries, this industry only requires a low level of restructuring and some additional investment to improve its operations. Similarly, heavy industry requires the same levels of restructuring and investment, but paying particular attention to the country’s strategic objectives. Limits to FDI can be used to maintain such strategic goals.

Finally, the banking, electricity and telecommunications industries require all the variables needed by the heavy industry plus all the elements that involve an adequate regulatory framework, such as staff, laws, etc. Regulation is needed before and after

²¹ This industry is more consumer-oriented than business-oriented. In other words, it produces goods for end users rather than intermediates for other industries.

divestiture to protect consumers and other firms from monopoly pricing and anticompetitive behaviour. In other words, these sectors will be the last activities to be privatised by governments because they are more complex. In developing countries, designing and implementing regulatory frameworks represent a big challenge due to different variables such as weak legal systems, lack of trained staff in industrial organisation issues, strong interest groups (stakeholders) and corruption (Megginson and Netter 2001).

The second stage is concerned with the best method of divesting ownership and the price at which the enterprises should be sold. Megginson (2005) establishes that there are three ways to conduct the transaction. Firstly, it is based on the sale of the companies by distributing vouchers to the public. This system allows people to make offers for the companies to be sold. Although the scheme was considered a popular measure, it proved to have failings, since it did not attract new investment or management to the privatised firms²², nor did it generate efficient ownership structures for the enterprises.

The second and third methods are related to the sale of SOEs to private investors for cash payments. The former option is based on an *asset sale* scheme, which has the following characteristics²³: a) governments can divest ownership by selling all of their holdings or the controlling stakes to single buyers; b) the buyer can be either a multinational company or a group of investors; and c) transactions are carried out under auctions in which governments obligate investors to meet determined conditions after the sale, including quality standards. This option is commonly used in the sale of smaller public firms²⁴.

The latter option is based on the sale of SOEs by using a series of public offerings well known as share issue privatisations (SIPs). SIPs are considered to be a complex and expensive mechanism, employed to divest the largest SOEs. They are carried out over several years in order to guarantee transparency and to attract more cash. Additionally, governments use SIPs to develop their domestic stock markets.

(ii) Regulation

²² Ibid.

²³ Also, an asset sale is called a trade sale or a private sale.

²⁴ Ibid.

Credible, stable regulation is required to achieve the benefits of privatisation (World Bank 2004). Regulation is defined as government intervention to modify the way in which markets behave. In other words, the objective of regulation is to protect consumers from market power (when prices are considerably higher than costs) and to protect competitors from monopolistic behaviour.

When network industries such as electricity, telecommunications, water and hydrocarbon pipelines are privatised, governments need to put in place instruments to regulate decisions about pricing, investment, advertising, product quality and the entry and exit of competitors that can affect consumers and producers (Church and Ware 2000)²⁵. According to the Littlechild Report (1983), a regulatory system must achieve the following targets: defend consumers from monopoly abuse; promote efficiency; reduce the costs of regulation; encourage competition; and maintain the integrity of the privatised enterprise. These instruments have to be established to operate before and after the divestiture.

Regulators use different instruments to control privatised industries. For example, to regulate prices, authorities use the RPI-X system, as described in section 2.3.3, to limit the market power of enterprises. Price increases are determined by the percentage rise of the RPI-X. Regulators set the “X” factor, which represents the reduction in price required for the company. In other words, X constitutes the efficiency gains related to managerial efficiency, internal efficiency and technological advances (Connolly and Munro 1999). For example, from 1997 to 2000, this scheme was RPI- 4.5% for British Telecom (BT), which means that if inflation was 7%, BT could increase prices by $7\% - 4.5\% = 2.5\%$. Conversely, if inflation was 2%, BT would have to decrease prices by $- 2.5\%$.

The price-cap system has advantages and disadvantages.

Advantages:

- a) Flexibility. If the value of X is not fixed, it can be changed in any situation. For example, by the late 1980s, the UK’s Office of Telecommunications (OFTEL) realised that it had underestimated the impact of fibre optics on the cost of telecom services. In consequence, it modified (increased) the value of X in the following revisions, changing the X factor from 4.5 in 1989 to 6.25% in 1991 and

²⁵ See section 2.2 for more information about natural monopolies.

from 6.25 to 7.5% in 1993. The purpose of this action was to guarantee that customers also benefited from these cost savings.

- b) It triggers efficiency. Since the X factor is a measure of efficiency, privatised utilities always have incentives to increase efficiency above the X factor. So, if cost savings are greater than X it means that they are making profits.

Disadvantages:

- a) Wrong X factor. Company strategies can be affected if regulators set an inaccurate X factor.
- b) Regulatory capture. This occurs when the “gamekeeper turns poacher or, at least, helps the poacher” (The Economist: Research Tools)²⁶. In other words, since the regulator works closely with the regulated firms, there is a risk that regulators will analyse things from the private firm’s perspective. It can also happen when regulators protect the companies’ illegal actions or become part of their administrative board.

As a consequence of these failures, competition has been introduced wherever possible to replace regulatory mechanisms.

If regulation is not correctly designed, privatisation can severely damage an economy. The well-known case of the California’s electricity crisis provides a good example of when regulation is not well developed (Joskow 2001). During this crisis, wholesale prices increased by 500% between the second half of 1999 and 2000. Customers were required to reduce their electricity consumption and California’s two largest electricity utilities, Pacific Gas & Electric (PG&E) and Southern California Edison (SCE), had to pay higher prices for wholesale power. By 2001, PG&E stopped paying its bills and other financial instruments, ending the crisis with a declaration of bankruptcy.

The lessons learned from California reinforced the regulation’s key role in any divestiture programme. Joskow (2001) establishes that market reform programmes should consider the following elements: effective market design requires considerable technical expertise; market institutions and regulatory instruments need to be developed to be robust; and regulators must have the capability to recognise serious market performance difficulties and to develop and apply reforms to repair them.

²⁶ Taken from The Economist: www.economist.com/research/Economics/alphabetical.cfm?LETTER=R

Setting up the basis of an efficient regulatory framework is a complex process²⁷. Under this process, each “particular” privatised industry must have a regulator and its own legal framework. For instance, a specific official body must control the activities performed by the electricity supply industry²⁸. The regulatory framework and other mechanisms developed by the specialists, such as RPI-X, have to be designed under different negotiations with public managers and the management of the newly privatised companies.

The negotiations between the authorities and the companies’ representatives have to be carried out under a bargaining process in which both parties reach determined agreements about the industry’s operations (one of the topics that both parties can discuss is the contract’s terms in order to avoid the *holdup problem*; see section 2.2). In addition to the industry-specific regulatory bodies, governments must have competition authorities which can protect the consumers’ interests and promote fair competition between companies in the whole economy²⁹.

However, in order to guarantee the efficient operation of regulatory bodies, countries must satisfy important prerequisites. These are mainly applied to developing countries. According to the World Bank (2004), these preconditions are: a) separation of powers (executive and judiciary); b) credible political and economic institutions; c) transparent administrative procedures; c) strong contract laws; and d) enough trained staff. In this sense, designing effective regulation in developing economies is a difficult task, but is important to make privatisation work.

2.3.5. Summary and Conclusions

This section illustrated the main institutional motives behind privatisation and how it is conducted. Particularly, it pointed out that governments sell public utilities because it brings balance to public finances, which is an international economic condition for countries in order to achieve stability in financial markets. Another element that has motivated governments to divest ownership of SOEs is the successful and pioneering divestiture programme carried out in the UK. Also, this section showed that

²⁷ When the divestiture of British Telecom (BT) in 1984, the main UK divestiture, was performed, the American regulation framework was the only model of utility regulation (Conolly and Munro 1999).

²⁸ In the UK, some of the industry-specific regulatory bodies are the Office of Telecommunications (OFTEL), the Office of Water Services (OFWAT) and the Office of Gas Supply (OFGAS).

²⁹ The main UK competition authorities are the Office of Fair Trading (OFT), the Department of Trade and Industry (DTI), and the Monopolies and Mergers Commission (MMC). Also, the UK is subject to European regulations represented by the European Competition Commission.

privatisation is a complex process that does not have to be thought of as a single situation but as a complete process that must be tailored to each company.

In conclusion, it has been shown that the privatisation agenda has emerged from well-determined variables. The financial burden generated from the inefficiency of SOEs seems to be the main economic trigger that has led international governments to sell their assets. Moreover, the UK case has exemplified how privatisation can be used as a cure in the presence of economic shocks, such as an oil crisis, and how the resources from the sales can be channelled to other targets, including the payment of the outstanding public debt.

Another important aspect is how this reform must be carried out. It has been established that industries such as telecommunications, electricity and banking have to be the last sectors to be divested, since they are natural monopolies. In this sense, international institutions, such as the World Bank, strongly recommend that governments set up regulatory mechanisms before and after the reform. Moreover, it states that before privatisations are performed in developing economies they must satisfy determined prerequisites, otherwise benefits cannot be guaranteed.

2.4. POLITICAL ECONOMY OF PRIVATISATION

2.4.1. Introduction

Since the debate about privatisation not only lies on purely economic grounds or a theoretical sphere, a discussion of political economy is provided in this section. This section is divided into four parts. Section 2.4.2 provides a discussion about ownership. Section 2.4.3 offers a discussion about the forces that have motivated governments to privatise under the perspective of political economy. In particular, it pays attention to reasons of political economy such as the role of international financial institutions, countries' political structures and the Washington Consensus. Section 2.4.4 presents the lessons from privatisation and its future.

2.4.2. Is Private Ownership a Better Option?

It is difficult to establish on purely economic grounds which of the two kinds of ownership is the adequate choice or to establish that private ownership constitutes the best option (Rowthorn and Chang 1993). In fact, the existing economic-based ownership theories do not provide enough arguments to give a definitive answer. This argument is supported by two facts. First, since the 1980s, economists (e.g. Milton Friedman and John Stigler) have focused their attention on why states fail to allocate

resources efficiently rather than explaining why states increase their economic involvement over time (Clarke and Pitelis 1993). This situation can be clearly seen in section 2.3.2, where the attention is centred only on government failures.

Secondly, purely rigid economic bases cannot explain this dichotomy because it is a matter of politics or political economy (Rowthorn and Chang 1993). In other words, if states are isolated from conservative or institutional pressures, the ownership problem simply disappears. For instance, the problem of *soft budget constraints* or high subsidisation can be easily fixed by limiting subsidies. This policy is more efficient than shifting to private ownership. However, it affects other interests that benefit from higher subsidies such as customers, public managers and firms that previously obtained services at subsidised prices. So, SOEs are forced to continue requesting higher subsidies, forcing policymakers to opt for privatisation.

According to Rowthorn and Chang, it is obvious that under these conditions privatisation is superior to public ownership. They state that the problem has nothing to do with the “inherent” dominance of private over social ownership; it is a matter of state intervention in a determined situation. Instruments can be designed to improve efficiency in SOEs at a higher level than in private enterprises³⁰. The difficulties arise when there are political pressures that block any attempt to improve SOEs’ efficiency or when the enterprises are captured by conservative interests that see divestiture as the best way to make them efficient³¹.

Letza et al. (2004) provide a similar perspective of the ownership problem. They establish that the traditional concept of ownership and its boundaries lies exclusively on physical assets. Since financial markets are more flexible in terms of capital provision for firms and technology is easy to obtain and makes productive processes cheaper, firms’ organisational structure can be instantly modified. So, ownership is no longer a matter for discussion.

However, the problem is that the traditional concept of ownership does not consider variables such as human capital, ideas, opinions, or control as part of the definition. In other words, there is a separation between ownership (assets) and control. The concern is not about ownership but is a problem of control or how corporate governance is carried out in the industry. If there is a division between these elements

³⁰ For more information about this, see Kaldor (1980).

³¹ Ibid.

or there are no clear definitions of the boundaries of ownership, then there is a discussion about which of the two structures is the most adequate.

2.4.3. Forces Driving Privatisation

(i) International financial institutions

The reason behind privatisation is more complex, and more political, than pure market versus planning considerations might suggest (Clarke and Pitelis 1993). First, according to Branston et al. (2001), the role of the international financial institutions (IFIs) has been considered as a key variable to accelerate the sale of public assets to private investors. They establish that the economic policies designed by the International Monetary Fund (IMF) and employed by less developed countries force them to rapidly employ structural adjustment mechanisms, giving little room to manoeuvre policy in different ways. For example, Nochteff and Abeles (2000) state that the Argentinean government was desperate to divest and deregulate, since it was looking for private investors and the confidence of financial institutions (World Bank and IMF). Similarly, Michie and Padayachee (1998) point out that a similar situation was experienced in South Africa with extra pressures from the country's influential business elite.

Stiglitz (2002) severely criticises the IFIs' role, mainly the IMF, in pressing less developed economies (LDE) to divest. He states that the IMF has designed policies or economic remedies without discussing them with the countries involved. So, countries are forced to implement these mechanisms without knowing their potential impacts. For example, he considers that the 1990s East Asian crisis was caused and worsened by IMF policies³². Similarly, Stiglitz considers that the Russian privatisation programme promoted by the IMF was badly run, affecting the already damaged economy by the crisis in the late 1990s.

The Russian programme was implemented under a situation in which corruption and the business mafia were not controlled, and the IMF knew it. Once the SOEs were sold, they were looted by their new owners; their interest was not to make them efficient. He states: "it is easy to privatise quickly if one does not pay any attention to how one privatises: essentially give away valuable state property to one's friend". Moreover, he considers that if SOEs are sold by employing cut prices, governments

³² The crisis started in Thailand in 1997. On 2nd July, the Thai baht depreciated 25% after ten years at around 25 to a dollar. The crisis spread to Malaysia, the Philippines, Indonesia and Korea. It was considered as one of the greatest economic shocks after the Great Depression.

are practically giving a gift to investors. Finally, Stiglitz states that efficiency, the well-known objective of privatisation, is not always achieved, primarily owing to a country's inadequate environment, including a lack of regulatory frameworks.³³

(ii) The Washington Consensus

Another driving force of privatisation under the political economy's perspective is what is called the Washington Consensus (W-Co). According to Basu (2003), the job of IFIs such as the IMF and the World Bank is to help nations with economic problems. So, they provide solutions under what seems to be a consensus or package³⁴. This package considers that countries must privatise, eliminate trade barriers, allow the free flow of foreign capital, cut fiscal deficit and limit subsidies.

Similarly, Stiglitz (2004) establishes that the W-Co has a determined purpose: to provide development strategies focusing on privatisation, liberalisation and macro-stability (price stability) for developing countries³⁵. In addition, he states that the reason that the IMF promotes these policies is based on ideological problems. In other words, since policymakers are highly dogmatic, they predicate such policies with strong faith³⁶. However, he recognises that the W-Co is a response to the failures of the state in attempting to fix those of the market.

It is important to emphasise that the W-Co's policies had an abrupt impact on the Latin American economies. In particular, Mexico experienced a radical change because its economy was structured under a system which depended mainly on the role of the private sector in productive activities. The import-substitution industrialisation strategy (ISI) and the stable development period triggered the development of many SOEs. Additionally, during the 1970s and early 1980s, the governments took over different private companies that were financially distressed, so the SOE sector increased impressively. When the W-Co was put into operation, it constituted a "cleaning up" programme that dramatically decreased the number of SOEs in the country (Chong

³³ Megginson and Netter (2001) provides a survey in which some evidence supports this argument.

"It would have been better," establishes Stiglitz, "to have proceeded more slowly building a regulatory framework before privatisation, and concentrating on strengthening the rule of law and on creating effective institutions, such as courts" (*The Economist* 1999a).

³⁴ The term was coined by John Williamson (1990). Also, see Williamson (1999).

According to Basu (2003), John Williamson (1990) tried to sketch what the financial institutions had been doing. "It was never meant," states Basu, "to be a complete policy manifesto for all countries, or even all developing countries."

³⁵ Stiglitz (2001) offers an extensive discussion about the international financial institutions' role in the global economy.

³⁶ *Ibid.*

and López-De-Silanes 2004). Most of the W-Co's market reforms were carried out during Carlos Salinas' administration (1988-1994).

(iii) Political objectives

Although the IFIs recommend privatisation as a precondition for economic development, governments seem to be motivated to do it for political objectives. This means that government goals can have interests other than improving economic efficiency. Börn (2004) questions why governments want to privatise if efficiency is not always achievable. He considers that government behaviour is confused because they could imitate private investors and therefore improve efficiency. Thus, Börn establishes that governments privatise since they are vote maximisers.

If politicians want to maintain power they will need to convince voters. Börn points out that incumbent governments can either opt for privatisation or restructuring to obtain political benefits. In the case of restructuring, governments can manipulate the level of employment and therefore get some political support. By doing this, people will think that the incumbent government is maximising social welfare. On the other hand, when it is decided to privatise, employment levels cannot be controlled. Under this situation, governments will divest a large number of enterprises to get a stronger effect on the economy, since they cannot influence employment. Moreover, they will divest by selling under-priced shares, which can be easily acquired by the median voter. With this strategy, politicians make the median voters averse to other parties' proposals and more prone to vote for the incumbent government. The resources from the sales and the under-priced shares help them to keep power.

Finally, countries' political structures can also determine why and how governments privatise (Bortolotti and Pinotti 2004). Particularly, Bortolotti et al. (2003) state that there are two key factors that influence the privatisation process: a) political fragmentation affects the timing and the extent of privatisation; and b) privatisation is highly affected by partisan politics. For example, right-wing governments with re-election interests attempt to spread share ownership among voters (Chapter 3 offers a more detailed analysis of this).

2.4.4. Lessons From Privatisation and What is Next?

Beware of extremes! What is required is a correct balance: between freedom and order; between improvement and continuity; and between the private and public sector (Von Weizäcker et al. 2005). Privatisations have provided different results and lessons

that need to be reconsidered in the international agenda. Von Weizäcker et al. (2005) establish that when these structural programmes work, firms can obtain more benefits, taxpayers' money can be secured and well used in public services, better quality services can be offered, innovation can be employed to increase social welfare and regulation can protect consumers and firms.

Conversely, when structural programmes are not well instrumented, or economies do not have adequate conditions to perform them, the outcomes can seriously damage countries. The following elements are normally connected with disappointing results³⁷:

- a. *Inadequate rules governing investments.* This occurs when governments do not have adequate political institutions or the experience to deal with multinational enterprises. So when authorities design legal frameworks for private investors, they can make mistakes leading to gaps that can be opportunistically used by private firms.
- b. *Inefficient competition.* It has been commonly thought that privatisation promotes competition, which in turn increases efficiency. However, this does not always happen, because an oligopoly can emerge, limiting entrance by other competitors. Consequently, it is important to set up competition and regulatory rules before the divestitures.
- c. *Marginalisation of the poor.* Privatisation might lead to a remarkable division between poor and rich people. Since people with stable income levels guarantee firms an adequate flow of economic resources, they tend to focus most of their services on them. As a result, people with lower income levels can be isolated from important services. For these cases, a poverty-oriented regulatory policy needs to be established.
- d. *Deficient contracts.* People's interests can be affected when contracts are incomplete, such as the case of California's power blackouts. Similarly, firms attempt to avoid unfavourable situations, such as environmental regulations, by using political connections to modify contracts affecting citizens' interests.
- e. *Fraudulent practices and corruption.* If there are no transparent rules, the privatisation can be affected by illicit and fraudulent behaviour.
- f. *Weakened democracy and reduced participation.* For some countries, mainly developing economies, SOEs are considered as part of their national identity, or considered as part of the country's democratic process. So people tend to

³⁷ Ibid.

fiercely protect these institutions. The problem increases when the potential owner of the utility is a multinational company.

- g. *Weak position of indebted states.* Public indebtedness has been considered to be one of the main reasons to privatise. By selling SOEs, governments try to fix this problem. However, some countries with high debt rates have had mixed results with determined reforms. For instance, Latin American economies with severe debt problems such as Mexico and Uruguay have been successful in their telecommunication sectors. In the case of Mexico, the government privatised, whereas Uruguay has had good results with this sector since it avoided privatisation. Conversely, Argentina, a country also with debt problems, privatised it but did not obtain satisfactory results³⁸.

(i) Is privatisation a panacea?

It works, but is no panacea; do not raise unrealistic expectations (Megginson 2005). Evidence around the world has shown us that there are mixed results. Indeed, privatisation can generate benefits to societies. It can be the best decision in some circumstances, but restructuring the state, instead, may be the better option in other cases (Von Weizäcker et al. 2005).

(ii) A third way?

From theoretical arguments to political economy analyses, the discussion has been focused on a dichotomy. Von Weizacker et al. (2005) and Megginson (2005) state that there is a third option that can merge the best characteristics of capitalism and socialism. Such an option reflects how difficult it is for societies to recognise that economic processes generate winners and losers.

Although hybrid options or third alternatives can be seen as a mechanism to bring balance, they are subject to the same problems as binary relationships. In other words, there can be good hybrids, bad hybrids, or mixed results. There are no bases which can tell us that they provide a general solution to the problem of balancing the social and private aspects³⁹. However, this can be an object of study in the future.

(iii) The future of privatisation

³⁸ For more details, see Sánchez and Corona (1993).

³⁹ Ibid.

According to Megginson (2005), in the next 20 years there will be three main mega-trends⁴⁰. The first and the most important is that oil-producing states will decide to privatise their national oil companies (NOCs), particularly OPEC countries. Few NOCs have performed well, so the potential revenues that can be generated from the sales are huge. Megginson estimates that the lowest amount that could be obtained from the sale of 17 NOCs is USD \$1.45 trillion and a maximum of \$3.21 trillion. These quantities do not include the value of the Iraqi National Oil Company. If the new Iraqi government decides to privatise it, the figures will increase remarkably.

The second trend is the economic boost of Arab countries in the Middle East. According to a report from the United Nations (2002), important investments will be needed to improve the adverse economic and social conditions of these economies. In particular, it will be required that Arab SOEs (not from the oil industry) be reformed to make them internationally competitive. Such SOEs are considered to be in a large number and very valuable.

The third trend is related to the privatisation of public transport. Although public transport has been partially or fully privatised in some countries, much of the public transportation networks are still in the hands of the state. So the world's seaports, airports, subways and passenger rail networks could be sold. Finally, Stiglitz (2004) proposes a different perspective: the *Post-Washington Consensus (PW-Co)*. He states that in the short run, a PW-Co must be reached which will have to consider the nature of the failures of the W-Co. Stiglitz considers that the PW-Co must recognise two main things: 1) there was excessive belief in markets; and 2) the Washington institutions have failed to promote development.

In particular, he highlights the following elements: 1) a development strategy cannot be designed by only one institution. It has to consider the opinions of developing countries; 2) an economic cure cannot be used for all countries. In other words, policies that have been successful in one country may not work in others; and 3) some areas of economic science have not yet provided enough elements that can tell what countries should do. In this sense, countries must be given the possibility to experiment, to employ their own criteria and to discover what may be the best options for them.

⁴⁰ The author points out that these predictions should be treated with a proper scepticism.

2.4.5. Summary and Conclusions

This section has presented a political economy analysis of privatisation.

1. It pointed out that it is difficult to establish on purely economic grounds which of the two kinds of ownership is the adequate choice or to establish that private ownership constitutes the best option.
2. It highlighted that the reasons behind privatisation are more complex, and more political, than pure market versus planning considerations might suggest. For example, under the political economy's perspective, it has been considered that the role of international financial institutions and the countries' political structures are the main forces behind privatisation. Also, it illustrated the possible context of this market reform for the next years.

In conclusion, it has been established that under the political economy perspective, privatisation is not only a matter of efficiency or a discussion between two kinds of organisational structures. In other words, privatisation has to be seen under a global perspective, where institutionalism and politics play a fundamental role. Another important feature is that privatisation has generated good and bad outcomes. However, people tend to pay more attention to the failures rather than in the potential benefits it can deliver. It seems that the problem is found in *how* privatisation has been carried out. In particular, failing to address the following questions: does the country really need to privatise determined sectors? If the answer is yes, has it fulfilled the basic preconditions (e.g. governance, a strong regulation framework, credible political and economic institutions, etc.)?⁴¹ Privatisation is a good instrument for improving people's welfare, but it needs to be implemented in the correct way and under adequate conditions.

2.5. CONCLUSIONS

This chapter has attempted to explore different discussions about privatisation. It demonstrated that there are theoretical arguments that sustain a binary relationship, but none is strong enough to declare a winner. It provided an analysis of political economy, which established that politics and institutions have a key role in explaining such a dual relationship.

⁴¹ See World Bank (2004).

Also, it showed the different stages, mechanisms and prerequisites that countries must fulfil before and after privatisation to guarantee its successful operation. For instance, credible and stable regulation is required to protect consumers from market power and to protect competitors from monopolistic behaviour.

The mixed outcomes from privatisation reveal that it is important to pay special attention to how it must be carried out. In particular, each industry and each country has different characteristics, so it is wrong to think that all cases will have the same results. In the following chapter we present some key approaches that explain the decision-making process behind the implementation of privatisation programmes.

CHAPTER 3: PROSPECT THEORY AND POLITICAL SCIENCE

3.1. INTRODUCTION

This chapter provides a review of prospect theory (PT), which is an alternative theory of decision-making under risk in the social sciences. Kahneman and Tversky (1979) found experimental and empirical anomalies in the expected utility theory (EUT), which led them to propose PT as a different approach to understand how people make decisions. They developed this theory by considering insights from psychology and using more realistic behavioural principles that people use in their decision-making processes. PT has been successfully employed in different research areas such as economics and finance and offers a different theoretical and methodological framework from traditional theory of choice mainly based on expected utility theory.

In political science, PT has been used to analyse events related to decisions under risk and uncertainty. For example, how political actors define their choices on important economic policies such as market reforms can be analysed using PT. It can also help to predict actors' risk tendency. Despite the advantages, the application of PT in political science is still limited except in the subfield of international relations. Critics of PT consider that there are specific theoretical problems that limit its applicability in politics. As a result, these limitations have been used as justifications for not applying PT.

In this way, the present analysis attempts to answer the following questions on the application of PT to political science: how was prospect theory developed and what are its theoretical characteristics; what are the key findings of prospect theory; what are the problems in prospect theory and can they be solved; and what are the contributions of key PT applications to political science?

The chapter is divided into three main sections. Section 3.2 provides a brief review of expected utility theory (EUT). It discusses EUT principles and the problems of such a theory. In particular, we analyse how such principles or axioms are violated by people's behaviour. Consequently, EUT fails to capture how individuals really make decisions. For instance, we discuss the Allais Paradox, the problem with the EUT maximisation principle and other inconsistencies that show how people's irrational actions do not correspond to what EUT states. These irregularities led to the development of prospect theory.

Section 3.3 studies prospect theory and its application in political science. We firstly analyse the theoretical structure of PT, which is based on two phases: 1) editing and 2) evaluation. The editing phase is about how people's choices are affected by the way such options are presented to them. The evaluation phase is very important in PT because it states that people will make risky decisions if they are in the domain of losses. On the other hand, if people are in the domain of gains, they will be risk averse. Section 3.3.2 offers an analysis of the key PT findings, which show how the theory is robust in explaining and predicting choices in political science. One of the main features of PT is the *endowment effect*, which is the tendency for people to be emotionally attached to their possessions.

Section 3.3.3 studies the problems of PT and their solutions. We analyse two situations: the empirical application of PT and the aggregation problem, or collective decision-making problem. We find that these theoretical limitations of PT are not greater than the limitations of rational choice models. As a result, PT can be applied to political phenomena without any difficulty. Finally, section 3.3.4 offers a discussion of key PT applications to political science. We selected three research studies that apply PT to different political cases, which show how our behavioural theory of decision-making is much better in capturing actors' decision-making processes than other political models. For example, Vis (2010) found that deteriorating socio-economic situations led some European countries to carry out benefit cutbacks. Similarly, Weyland (2002) reveals that declining economic conditions in some Latin American countries led political leaders to implement risky and costly structural policies. Moreover, these studies demonstrate how researchers can use different methods to determine people's domains.

3.2. EXPECTED UTILITY THEORY: A BRIEF REVIEW

3.2.1. Theoretical Foundations of Expected Utility Theory

Expected utility theory (EUT) is a decision-making theory under risk which states that "rational" individuals make decisions according to determined premises. It establishes that people expect outcomes of their behaviours depending on specific conditions. Moreover, it considers that people know the probabilities of such outcomes. After knowing the probabilities, people combine them with their utility levels, analyse each alternative and then select the option with the highest expected utility.

The above reasoning has been a strong component in models that are employed to explain decision-making processes under risk in economics and political science⁴². EUT was first proposed in 1738 by Daniel Bernoulli, who analysed how people make decisions. In particular, the EUT was developed as a solution to the problem regarding the price a rational person should be prepared to pay to enter into a gamble (Starmer 2000). By solving the St Petersburg game, he considered that people are willing to pay a small amount to enter into it.

The St Petersburg game is played by continually flipping a coin until tails first appears, ending the game. The game's structure is as follows: 1) you have to pay a fee to enter; 2) suppose you receive an initial payoff of $£ 2^n$; and 3) every time a head appears the payoff increases. "n" is the number of flips until tails comes up tails. So, if $2^2 = 4$, tails appear the second time the coin is flipped. Bernoulli's theory has important properties. It considers that people give subjective values or utilities to monetary outcomes. So the expected value of the gamble is the expectation of these utilities. In this sense, Bernoulli established that the price of a gamble to a person is not the same as its expected monetary value.

Although Bernoulli's EUT explained the St Petersburg game, it was not supported by economists until the 1950s due to the way in which the solution was illustrated. According to Starmer (2000), the problem was partially attributed to the use of a cardinal utility scale, which was not well understood during the first half of the twentieth century.

In Neumann and Morgenstern (1947), the theory was the object of study once again. They established that determined axioms on preference could lead to the EUT hypothesis. This hypothesis states that an individual's utility facing uncertainty is obtained by considering utility in every possible state and by determining a weighted average. The weights are the person's estimations of each state's probability. The axioms are the principles in which, according to EUT's perspective, people carry out their decisions. Since then, different axioms have been developed⁴³. In order for people to make decisions under an EUT framework, three main axioms must hold (Starmer 2000): 1) Ordering; 2) Continuity; and 3) Independence.

⁴² A detailed analysis of EUT can be found in Schoemaker (1982).

⁴³ Ibid.

The EUT axioms have the following notation and assumptions: the symbol \succsim means weakly preferred, the symbol \sim means indifferent, and the letter p represents probabilities (it always lies in the interval $[0, 1]$). Lower case letters in bold represent prospects (a list of consequences with associated probabilities). Assumptions: 1) the individual knows all the consequences and probabilities. Consequently, when the individual chooses among prospects she faces a risky situation (conversely, under situations of uncertainty at least some of the outcomes or probabilities are unknown).

The ordering axiom involves completeness and transitivity. Completeness requires that for all \mathbf{a}, \mathbf{b} $\mathbf{a} \succsim \mathbf{b}$, or $\mathbf{b} \succsim \mathbf{a}$, or both. Transitivity requires that for all \mathbf{a}, \mathbf{b} and \mathbf{c} , if $\mathbf{a} \succsim \mathbf{b}$ and $\mathbf{b} \succsim \mathbf{c}$, then $\mathbf{a} \succsim \mathbf{c}$. Continuity requires that for all prospects \mathbf{a}, \mathbf{b} and \mathbf{c} , where $\mathbf{a} \succ \mathbf{b}$ and $\mathbf{b} \succ \mathbf{c}$, there exists some p such that $(\mathbf{a}, p; \mathbf{c}, 1-p) \sim \mathbf{b}$. $(\mathbf{a}, p; \mathbf{c}, 1-p)$ is a compound prospect, where \mathbf{a} has a probability p and \mathbf{c} has a probability $1-p$. The independence axiom considers that for all prospects \mathbf{a}, \mathbf{b} and \mathbf{c} , if $\mathbf{a} \succ \mathbf{b}$ then $(\mathbf{a}, p; \mathbf{c}, 1-p) \succ (\mathbf{b}, p; \mathbf{c}, 1-p)$ for all p . These axioms represent the basic structure of any rational decision-making model.

3.2.2. Problems of Expected Utility Theory

Although the expected utility theory has given good results in explaining how people define their choices, strong empirical evidence has shown inconsistencies in such theory. One of the main discontents about EUT is related to the distinction between uncertainty and risk (McCarty and Meirowitz 2007). In particular, EUT focuses its attention on risk rather than uncertainty (Knight 1921). Knight considers that uncertainty exists when people do not have enough statistical information to define the probabilities of the outcomes. In other words, subjects do not know the true set of lotteries (\mathbf{L}) in a game.

Savage (1954) considers that, contrary to what EUT considers, people form a “subjective belief” about \mathbf{L} which can be employed to determine probability distribution over outcomes. For instance, consider Ellsberg’s (1961) experiment in which he asked individuals to choose between two urns containing red and black balls. The first urn contained 100 balls of both kinds, but the proportion of each was unknown. The second urn contained 50 red balls and 50 black balls randomly mixed. Individuals were asked to choose an urn and a ball. Subjects then had to draw a ball from the chosen urn. If they got the ball they wanted, they got a prize.

The experiment strongly showed that people preferred to draw red and black balls from the second urn. These results violate the EUT's axioms. According to EUT, if a decision-maker prefers to draw a black ball from the second urn rather than from the first urn, this means that the subjective probability of drawing a black ball from the first urn is less than 0.5. But it also means that the subjective probability of drawing a red ball from the first urn is greater than 0.5 and the subject should therefore prefer to draw a black ball from the second urn, which has 0.5 probability of winning. According to Ellsberg's analysis, people tend to maximise expected utility in situations involving risk (second urn), whereas they tend to maximise minimum utility in cases involving uncertainty (first urn). For that reason, EUT focuses more on situations involving risk rather than uncertainty (Knight 1921).

Another important critique to EUT is found in the *Allais Paradox*. According to Allais (1953), people tend to violate EUT's independence axiom. His experiment consisted of asking people to choose between two prospects, $a = (\$10 \text{ million}; 100\%)$ or $b = (\$50 \text{ million}; 10\%; \$10 \text{ million}; 89\%; \$0; 1\%)$. What option did people choose? Then, they had to choose between other two lotteries, $c = (\$10 \text{ million}; 11\%; \$0; 89\%)$ or $d = (\$50 \text{ million}; 10\%; \$0; 90\%)$. What lottery did people prefer?

According to EUT, people are supposed to choose the prospects which provide the highest probabilities. So, under this assumption, people had to choose **a** over **b** and **c** over **d**. Allais' analysis proved that in the case of the first experiment, people chose **a** because they were certain they were going to get the \$10 million for sure. However, in the second experiment he found that people chose **d** over **c**. In this situation there is an inconsistency, because people opted for the prospect which gave them more value (50 million) instead of opting for the choice with the higher probability (11%). In a similar experiment, Kahneman and Tversky (1979) found that 82% of people opted for prospect **a** and 83% chose **d**.

Other key inconsistencies in the EUT have been found in other more applied cases. For instance, Camerer (1998) provides an interesting example of a EUT's failure. He studies how New York taxi drivers violate the EUT maximisation principle, which infers that people will always seek the highest expected utility. His analysis shows how many taxi drivers tend to work fewer hours on busy days, whereas on quiet days they tend to set a fixed income target. Once they reach it they stop working. This leads to the conclusion that the rational labour-market theory (RLMT) is useless in explaining this behaviour, because the RLMT indicates that they will do the opposite. In other words,

taxi drivers are supposed to work harder on a busy day in order to maximise their income function and work less on a quiet day when their income rate is lower.

3.3. PROSPECT THEORY AND POLITICAL SCIENCE

3.3.1. Theoretical Foundations of Prospect Theory

The observed violations of expected utility theory led key scholars to develop an alternative theory of decision-making under risk. In particular, Prospect Theory (PT) emerged as an option that attempts to explain what EUT fails to. PT was developed by Daniel Kahneman and Amos Tversky in 1979⁴⁴. They demonstrated that hundreds of experiments, in which people had to decide between different gambles, were inconsistent with EUT. The evidence of the anomalies in EUT were found in experimental analyses that have been strengthened by field studies in different areas of study such as finance, consumer economics, insurance and other areas (Kahneman and Tversky 2000).

Contrary to the EUT axioms, Kahneman and Tversky consider that the decision-making process is mainly divided into two phases: 1) Editing or Framing and 2) Evaluation. In the editing phase the individual recognises the reference point, the available choices, the possible consequences or outcomes, and the value and probability of each of these outcomes (Levy 2003). In the evaluation phase, the actor's edited prospects are evaluated and the desired prospect is chosen⁴⁵. These two phases are based on psychological principles which capture the way the human brain structures decisions (McDermott 1998).

1) Editing

Editing or framing is the first phase of PT. This stage is about framing effects which describe how choices or options can be affected by the way they are ordered or presented to individuals. This phase can be the central part of the decision-making process because it is about how an individual structures the options that are available to her. How can the order of choices affect individuals' final decisions? Let us use one of the examples offered by McDermott (1998).

In this experiment, people were told they were responsible for the country's public policy-making. They were asked to choose between two policies that could stop the spread of a strong flu virus. Policy **A** offered to save 200 out of 600 people. Policy **B**

⁴⁴ They obtained the 2003 Nobel Prize in Economics for their work in Prospect Theory.

⁴⁵ Ibid.

had a one-third chance that 600 people were going to survive and a two-thirds chance that everybody was going to die. The 72% of a first group of people opted for the first policy (**A**).

In a second group of people, there were also two policy options. Policy **A** expected to cause 400 dead out of 600 people. Policy **B** had a one-third possibility that all people were not going to die and two-thirds possibility of causing 600 dead. In this second group, 78% chose policy **B**. As we clearly see, these two groups of people were offered the same “net outcome”. However, the only difference between them is how the options were framed or the way the problem was presented to people. The different results were caused by the framing effects, but the expected value between these options did not change (Tversky and Kahneman 1981).

“What does framing consist of and how does it operate?” (McDermott 1998, p. 22)
“Framing is controlled by the manner in which the choice problem is presented as well as by the norms, habits, and expectancies of the decision maker” (Tversky and Kahneman 1986, p. 257). In this way, McDermott states that such norms and habits can be very “idiosyncratic” to the specific decision-maker and cognitive biases can strongly influence her expectancies.

The editing phase groups other processes: *acceptance*, *segregation*, *coding*, *combination* and *cancellation*. *Acceptance* states that people will not reformulate or recast a choice problem after it is presented to them. This means that people will accept the way the options are structured. *Segregation* refers to the fact that people tend to focus on the elements that are most evident and direct to the choice problem. *Coding* captures individuals’ tendency to conceive outcomes as gains and losses, instead of classifying them as final absolute states of wealth or welfare (McDermott 1998). For example, our favourite football team’s results are irrelevant if we do not know if the score is higher or lower than the rival team’s results. The rivals’ score is used as a reference point to evaluate the development of our team.

Combination is another framing process that states that people tend to add the probabilities of similar outcomes. For example, people who live in dangerous areas where there is a 10% chance of dying in an earthquake and a 10% possibility of dying in violent crimes sum these two probabilities, so the total chance of dying in this area is 20%. If one person decides to move to another place with a 5% chance of dying from violent crimes, she compares it against the 20%.

Cancellation refers to the individuals' tendency to discard choices with similar outcomes. For example, truck drivers usually face the choice problem of deciding which route they should take to reach their destination. Let us suppose that the first route has a 5% chance of being injured by an accident because of the bad road conditions and a 10% possibility of being assaulted and killed by gunmen. The second route has a 10% chance of being assaulted and killed by gunmen and a 30% chance of being mugged. The 10% chance of being assaulted and killed by gunmen is discarded, so now the decision is between a 5% chance of being injured by a road accident and 30% chance of being mugged.

2) Evaluation

After people edit their prospects, they evaluate them and choose an option from a set of alternatives. This phase is structured by two key sections: a) the *value function* and b) the *weighting function*.

a. The value function

This function has three important characteristics (see Figure 3.1). Firstly, empirical evidence has shown that people conceive outcomes as gains and losses relative to a specific reference point. The value is obtained by the magnitude of the change from the reference point, whereas expected utility theory considers value as a result of final states. The reference point is set at the current asset position or SQ.

Secondly, the value function for gains is concave, whereas it is convex for losses. In other words, it is an S-shaped function. According to Kahneman and Tversky (1979), the S-shaped value curve is attributed to the reflection effect: "the fact concavity of the utility function in the domain of gains is mirrored by convexity in the domain of losses" (Starmer 2000, p.352). The experiments in Kahneman and Tversky's study concluded that positive prospects produced convex regions, which mean risk aversion. On the other hand, if outcome signs are modified in the same problems, the preference order is also modified. This means that prospect theory predicts risk aversion in the domain of gains and risk seeking in the domain of losses; "this is the crux of PT" (McDermott 1998, p. 29).

Finally, the third characteristic of the value function is that changes in the value of losses are greater than the value of gains when absolute values of changes in money are the same. Tversky and Kahneman's (1991) experimental evidence demonstrates that the value function in the domain of losses is steeper than in the domain of gains.

This situation reflects the phenomenon of loss aversion (Levy 1992) and that losses hurt more than comparable gains satisfy (McDermott 1998). For example, if an individual loses \$20, her feeling of guilt will be stronger than the feeling of satisfaction generated by finding \$20. All these features are illustrated in Figure 3.1.

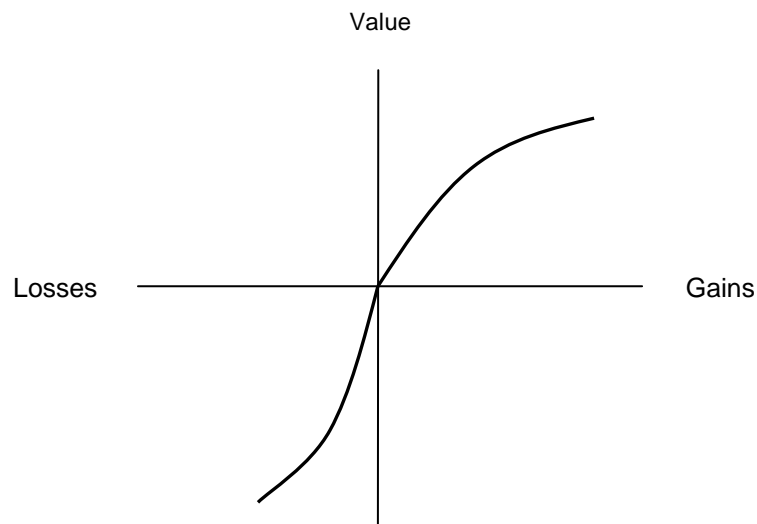


Figure 3.1: Prospect theory's value function

Figure 3.1 shows PT's value function. It illustrates that people are risk averse in the domain of gains (concave curve) and risk seekers when they are in the domain of losses (convex curve).

b. The Weighting Function

The second structure of the evaluation stage is the weighting function (Figure 3.2). In PT, the value of each outcome is multiplied by a decision weight, whereas in expected utility theory it is multiplied by a probability. As such, decision weight measures an event's impact on the prospects in order to establish how people underestimate outcomes when they are very likely to occur and how people overestimate outcomes that are less likely to occur.

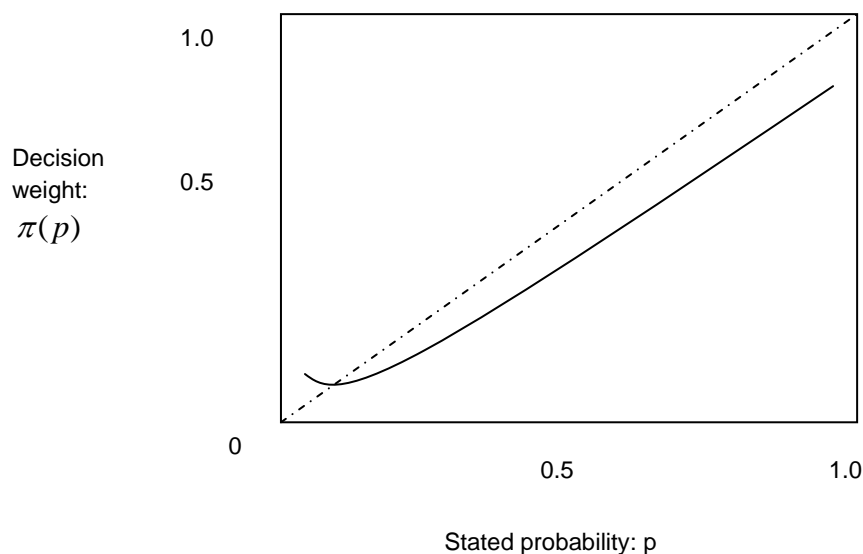


Figure 3.2: A hypothetical weighting function

The technical structure of the weighting function is the following: let x and y be two different monetary outcomes; (p) is the probability of x , and (q) is the probability of y . The weighting function is represented by π and is associated with each probability (p) . So, $\pi(p) + \pi(1 - p)$ is less than unity and π is not continuous near the end-points where $\pi(0) = 0$ and $\pi(1) = 1$.

The prospect's values are defined by one of the following bilinear forms:

With probability $1-p-q$, the payoff is 0. Prospects are strictly positive if $x, y > 0$ and $p + q = 1$, strictly negative if $x, y < 0$ and $p+q=1$, and regular in all other cases. In a regular prospect, subjects maximise:

$$V(x, p; y, q) = \pi(p).v(x) + \pi(q).v(y)$$

$v(x)$ and $v(y)$ are the values of the outcomes; $\pi(p)$ and $\pi(q)$ are weights based on the outcome probabilities. They consider that $v(0) = 0$, $\pi(0) = 0$ and $\pi(1) = 1$

In the case of strictly positive or strictly negative prospects such as $x > y > 0$ and $x < y < 0$ where $p + q = 1$, subjects maximise:

$$V(x, p; y, q) = v(y) + \pi(p) \cdot [v(x) - v(y)]$$

This function indicates that people evaluate such lotteries as a risk-free element $v(y)$ plus a risky element $v(x) - v(y)$. A prospect theory's important assumption is that $v(\cdot)$ is asymmetric with respect to losses and gains. In this way, the structure of the weighting function has some key characteristics. One of the features is that people tend to treat very probable but uncertain situations as certain. On the other hand, people also tend to treat very improbable situations as impossible and therefore individuals ignore such events (Kahneman and Tversky 1979). For example, a very unlikely situation that actually happened was the disaster of the space shuttle *Challenger* (McDermott 1998). Another characteristic is that medium and high probabilities are underweighted and low probabilities are overweighted. In section 3.3.2.2, we analyse this and other characteristics of the weighting function.

In summary, the editing phase is about how people make substantially different choices when their reference points change. The value function predicts risk aversion in the domain of gains and risk seeking in the domain of losses. These behaviours consider a reference point that can be expressed in terms of the individuals' current assets or status quo (SQ). The weighting function shows that people tend to overweight events with small probabilities and underweight events with medium or high probabilities.

3.3.2. Prospect Theory's Key Findings

3.3.2.1. Status Quo Effect and Endowment Effect

Prospect theory has important features that make it different from other theories, particularly expected utility theory. One of the PT's characteristics is that it predicts that people make very risky decisions when their prospects are negative, whereas individuals tend to be more cautious when their prospects are positive. This behaviour occurs when individuals use a "*reference point*" which determines their position in one of the domains of PT's value function: the domain of gains and the domain of losses. In other words, people think in terms of gains and losses, so they define their options from a reference point which can initially be the "*status quo*" or an "*aspiration level*"⁴⁶. This "*reference dependence*" (Levy 2003) constitutes the main feature of PT.

⁴⁶ In section 3.3.3.1, we analyse other kinds of reference points.

Another finding is the “*loss aversion*” argument. People experience this behaviour when they evaluate outcomes above and below their reference point⁴⁷. In particular, people are loss averse when they overvalue losses with respect to equal gains. Such overvaluation occurs because “losses loom larger than gains” (Kahneman and Tversky 1979, p. 279). This phenomenon was found by conducting different experiments in which individuals opted for certain outcomes with lower expected value rather than facing gambles with a 50/50 chance for negative and positive choices with similar absolute values (Levy 1992). According to Vis (2009a) and Levy (1992), one of the implications of loss aversion is that people’s SQ becomes their preferred position and therefore they refuse to choose negative choices. It means that individuals tend to stay at the SQ rather than experiencing the disadvantages or costs of leaving it (Kahneman, Knetsch and Thaler 1991).

Loss aversion is closely connected to the “*endowment effect*” (Thaler 1980). It occurs when people value their current assets or SQ more than the comparable assets they do not have. According to Kahneman and Tversky (1984), it implies that people tend to be unwilling to part with their possessions because they get emotionally attached to such assets. Expected utility theory (EUT) states that people’s choices are independent of their endowments. In other words, an individual’s decision is not influenced by the current condition of her assets. However, the general theory of reference-dependent preferences in Kahneman and Tversky (1991), which is also included in prospect theory, establishes that people’s choices strongly depend on the state of their current endowments. Samuelson and Zeckhauser (1988) call it the “*status quo effect*”.

Kahneman, Knetsch and Thaler (1990) carried out experiments that show how the endowment effect is found in people’s behaviour and how it influences their decision-making processes. In one of the key experiments, students were given mugs and money. Half of the students received mugs (sellers) and the other half got the money (choosers). Students were asked to set price of the mugs and were motivated to sell them to choosers. The experiment results showed that sellers set the prices at double the value that the choosers were willing to pay.

The retail value of the mug was around \$5. In the first experiment, sellers set prices at \$7.12, whereas choosers were willing to buy them at \$3.12. In a second experiment, sellers and choosers set values at \$7 and \$3.50 respectively. Also, in both

⁴⁷ Ibid.

experiments, sellers were told to opt for either maintaining their *status quo* (mugs) or giving it up in exchange for cash⁴⁸. If trade was carried out, the mugs were considered to be a gain by the choosers and a loss by the sellers. The higher prices set by the sellers clearly demonstrate how individuals tend to be loss averse and therefore maintain their SQ. Only 15% of the mugs were traded⁴⁹.

The experiments on the commercial transactions of mugs can help us to understand some elements of the political dynamics of privatisation. In particular, we can see why policy change (e.g. privatisation programmes, benefit cutbacks, etc.) is difficult to carry out by policy-makers in developing countries (Mullainathan 2006). Under PT's perspective, one of the reasons why these economic measures are difficult to implement is because they create winners and losers. For example, if a government plans to implement a drastic economic reform that affects the status quo of a specific social group, we can predict that such people will defend their socio-economic welfare (SQ) against the decision. People can use any available strategy (e.g. street demonstrations) to maintain their SQ and therefore block the government's policy. "Because the status quo is imbued with special legitimacy, individuals" (Vis 2009a, p. 3) ... "defend it more fiercely against threats of losses than they seek further improvements" (Weyland 2002, pp. 40-41). Since losses are felt more sharply in severe economic reforms (Mullainathan 2006), people's reaction will be stronger.

Under PT's perspective, people conceive outcomes as gains and losses. If people feel satisfied with their SQ, they are in PT's domain of gains, which means that they are risk averse. Similar to the mug experiment in Kahneman et al. (1990), people can express their loss aversion by setting a higher price to protect their SQ. We consider that the government's policy may be successful only if the buying price (proposed by the government) is considerably higher than the selling price (proposed by the affected group). This is the only way people will be willing to accept a change in their SQ.

If the affected people reach an agreement with the government and therefore accept a change in their SQ, the government can use this opportunity to implement parallel measures to make the policy less costly for this group of people. This is because "individuals adapt more rapidly to positive changes in their situation (such as a pay rise) than to negative ones (such as a pay cut)" (Vis 2009a, p. 3); "the recognition of loss aversion suggests that successful policies may require protecting the losses of

⁴⁸ Ibid.

⁴⁹ Ibid.

incumbents” (Mullainathan 2006, p. 20). This strategy can help to reduce the “feeling of loss” in the affected group. If the government adopts this parallel measure, people feel that their government cares about them and therefore easily accept and adapt themselves to their new SQ.

Another implication of loss aversion and the endowment effect is that actual losses hurt more than foregone gains (Levy 2003). People experience this feeling when their possessions are taken away from them. The interesting element about this situation is that this feeling is stronger than the feeling of not obtaining expected gains. It also implies that “gaining something and then losing it does not leave people in the same place in terms of the psychological value of people’s assets” (Levy 2003, p. 217).

Levy (2003) states that the reference dependence and the asymmetry between losses and gains also have important implications in terms of fairness and the law. He considers that people tend to believe that an unfair situation occurs when somebody else does not respect or abuses a determined agreement. People define fairness with respect to some “*reference transaction*”⁵⁰ which can be expressed in prices, contracts, etc. So individuals can see an unfair situation when supermarkets respond to a sudden increase in the demand for bottled water by raising prices after a weather crisis. Such price increases can be legitimate if they are necessary to cover new costs for the company⁵¹.

Similarly, Levy establishes that the endowment effect, the asymmetry between gains and losses and consequently between losses and foregone gains, are central to the law. He cites Atiya (1979) to show how losses are treated in a special way compared to the denial of gains. Atiya’s analysis of the history of contracts states that “to deprive somebody of something which he merely expects to receive is a less serious wrong, deserving of less protection, than to deprive somebody of the expectation of continuing to hold something he already possesses” (Levy 2003, p. 230).

Levy considers that the endowment effect is also reflected in Holmes’ (1897) statement: “A thing that you have enjoyed and used as your own for a long time, whether property or an opinion, takes root in your being and cannot be torn away without your resenting the act and trying to defend yourself...” (cited in Cohen and Knetsch 2000, p. 432). In this way, and according to Levy, if an individual does not

⁵⁰ Ibid.

⁵¹ Ibid.

respect a contract because she pretends to make gains, she will be held to the original terms and conditions of such an agreement.

3.3.2.2. Strategic Framing, Sunk Costs, Overweighting and Underweighting of Probabilities

Another implication is that PT's findings can be subject to manipulation or "strategic framing" (Levy 2000). According to Levy (2003), McDermott et al. (2008), Lupia and Menning (2009) and Vis (2009a), it occurs when an individual influences other people's reference points. For example, Vis (2009a) states that politicians can get people's support for very risky policies by using fear as a convincing factor. This phenomenon is stronger when people do not have enough information about the possible threats that are promoted by politicians. Conversely, when people receive "feedback" on such threats, it is difficult for politicians to obtain gains by manipulating voters' preferences⁵².

"Sunk costs" are very important factors that are usually found in political players' decision-making processes (Vis 2009a). Contrary to expected utility theory, which establishes that individuals consider sunk costs as irrelevant and make decisions on the margin (Levy 2003), prospect theory states that people take into consideration past costs when they make decisions. Thaler (1980) found experimental evidence that indicates that individuals are willing to drive through a snowstorm to go to a basketball game to recover the cost or price they paid for their tickets. This means that when individuals' SQ changes from a good to an adverse situation, the new SQ (adverse situation) will be considered as a "loss" for them. Consequently, PT predicts that people will adopt risk-seeking behaviour in an attempt to eliminate such a loss. This behaviour can generate greater losses (Levy 2003).

Finally, the "over-weighting" of probabilities is an important finding in PT. According to Allais (1979) and Kahneman and Tversky (1979), people tend to give a greater weight or a higher value to certain outcomes than to uncertain outcomes. This has been called the "*certainty effect*". In other words, the certainty effect can be understood as people's propensity for choosing the option that eliminates the risk rather than choosing the option that reduces it, even though both options have the same outcome. McDermott et al. (2008) state that PT's weighting function indicates that individuals have a propensity for overweighting small probabilities and underweighting intermediate and high

⁵² Ibid.

probabilities. They consider that robust evidence confirms that people treat very likely situations as certain, whereas see highly improbable situations as impossible events.

In the case of the “pseudocertainty effect”, Tversky and Kahneman (1986) state that it occurs when people treat or weight uncertain outcomes as certain outcomes. McDermott (1998) considers that this behaviour is commonly found in political actors’ decision-making processes when opting for worst-case scenario planning. She states that this phenomenon represents a problematic situation because political players tend to aggravate the weighting effects by employing representative analogies. For example, if a political leader views another politician as a ‘Hitler’, the following assessments will be based on such characterisation and therefore will lack accuracy⁵³. Levy (1992) states that *overestimation* and *overweighting* of probabilities are different phenomena. The overestimation occurs when people subjectively evaluate probabilities of rare events. On the other hand, overweighting of probabilities is a property of the weighting function or decision weight (Kahneman and Tversky 1979).

3.3.3. Problems in Prospect Theory

This section analyses the problems of PT found in political science and their solutions. There are two main problems: the empirical application of PT and the aggregation problem. The solution for the first case is developed in Mercer’s (2005a) analysis, and Vis (2009a) solves the second problem.

3.3.3.1. Problem 1: Empirical Application

PT has been increasingly used for analysing different phenomena in the field of economics. In particular, it has contributed enormously to the sub-fields of behavioural economics and experimental economics. Other areas such as engineering, mathematics, sociology, health, finance and management have used PT with confidence (Mercer 2005a). However, political scientists have shown little interest in using PT as a methodological framework. For example, and according to Mercer, from 1985 to 2003, Kahneman and Tversky’s article was cited only eight times in the *American Political Science Review*. PT is widely employed in the field of international relations, but the rest of political science excludes it from the analysis of political dynamics. This problem is not only found in political researchers; political economists are also reluctant to apply PT despite the fact this theory is no longer placed outside

⁵³ Ibid.

the mainstream of economics (Thaler 2001). For some political scientists it is still considered a radical choice (Treisman 2004).

Why is there little attention to PT in political science? Mercer (2005a) suggests two interesting reasons. Firstly, political scientists have not viewed PT favourably because they consider that it has theoretical and methodological constraints that block its applicability in political phenomena. Studies such as McDermott (2004a) consider that PT has the following limitations: 1) it lacks a specific framework that can fit reality with theory; and 2) it lacks applicability to group behaviour (we analyse this in section 3.3.3.2).

Mercer states that these limitations are not greater than the problems with rationalist models. However, he recognises that there are constraints that could cause the lack of interest in PT. For example, lab experiments are extremely different from complex political decisions in the field, where accurate measurement of domain, risk and effects of other variables is very difficult to get. To solve this situation, he agrees with Jervis (2004, p.172), who states that “ingenuity and careful research can reduce, but not completely eliminate these difficulties”. Under these conditions, Mercer proposes five techniques for addressing the problem of how to determine an actor’s domain, which is one of the main methodological and theoretical limitations considered by the opponents of PT. At the same time, these techniques respond to McDermott’s criticisms about the problem of PT’s application in political science. We discuss these techniques in the following section.

The second reason, or what he considers the real reason behind PT’s problems in political science, is based on the political researchers’ opposition to employing psychological theories. According to him, the problem lies in the resistance to the field of psychology rather than to problems inherent with the theory. In other words, there is an “aggressive uncuriosity” (Rabin 1998, p. 41) which will decrease as economists and political scientists get used to psychology. Similarly, Thaler (2001) considers that one of the reasons that inhibit researchers from using PT is that it can be a “risky career path”. However, he states that economists who use psychological theories can now feel that their work is recognised. “If behavioural economists continue to prosper, a new generation of political economists is sure to follow” (Mercer 2005a, p.18.). “Economists

will routinely incorporate as much behaviour into their models as they observe in the real world. After all, to do otherwise would be irrational” (Thaler 1999)⁵⁴.

(i) Mercer’s five techniques for determining an actor’s domain

Analysing decision-making processes under PT’s perspective in experimental laboratories gives research important advantages. For example, economists or psychologists can manipulate the variables of interest, and therefore experiments (intentionally created by researchers) can be successfully completed without any difficulty (Mercer 2005a). Conversely, in real and unpredictable situations people generate their own frames, which makes it difficult for researchers to adequately use PT to capture how politicians carry out their decisions.

How can we know how people frame their choices if PT lacks a theory of frames? Levy (1997, p. 100) states “PT is a reference-dependent theory without a theory of reference point”. To know that people can take a risky decision or behave in a more cautious way, we need to see in which of the two domains (gains or losses) they are located. If PT has no theory of frames, it is impossible to know. To answer this question, Mercer proposes the following five techniques: 1) status quo as a reference point; 2) aspiration as a reference point; 3) heuristics; 4) analogies; and 5) emotions. According to him, such techniques can help to identify an actor’s domain.

(i.i) Status quo as the reference point

People use their status quo (SQ) as a reference point. When people are satisfied with it, they tend to be in the domain of gains. According to Mercer, the question is simple: is the SQ acceptable or not? If the answer is no it means that individuals see their SQ deteriorating and consequently they see themselves in a domain of losses, which leads them to take a risky action.

However, there is no general theory of satisfaction, and satisfaction is a subjective feeling. To solve this problem we need to pay careful attention to elements such the situations, goals and motivations of decision-makers (Mercer 2005a). In terms of political dynamics, we can use economic incentives, domestic politics, government institutional structures, domestic organisations (e.g. congressional pressures or business group pressures), etc. to define the decision-makers’ domain.

⁵⁴ Richard Thaler is a leading behavioural economist from the University of Chicago, Graduate School of Business.

For example, Weyland (2002) employed economic crises (PT/crisis argument) to determine political leaders' domains. According to him, the deteriorating economic conditions in Argentina, Brazil and Venezuela throughout determined periods led political leaders to carry out drastic economic reforms (risky decisions), where the current SQ served as the reference point to return to the pre-crisis SQ⁵⁵. Also, Fanis (2004) employed economic data to explain how Chilean President Salvador Allende's economic policies hurt the interests of leading industrial sectors and how such groups framed Allende's term (1970–1973) as a loss. In other words, they were dissatisfied with their SQ during that time.

Mercer also states that there is a special case that occurs when dissatisfaction with SQ could be a result of an individual being in a domain of gains. For example, when President George W. Bush had an initial acceptable victory in Afghanistan, his popularity increased, which allowed him the luxury to see the Iraqi SQ as an unacceptable situation because he was in a domain of gains. According to Woodward (2004), President Bush was motivated by Secretary of Defence Donald Rumsfeld, who was in a very optimistic mood because the president had positive results in the polls. If the war in Afghanistan had initially gone bad, George Bush might have seen the Iraqi SQ as an acceptable situation (Mercer 2005a). In other words, dissatisfaction with the SQ could be a result of success rather than failure.

(i.ii) Aspirations

An individual can use an aspiration instead of the status quo as her reference point⁵⁶. It is important to identify the difference between an aspiration and the status quo, a difference which can sometimes be irrelevant for the research (this is because PT only needs to know in which domain individuals are located and not the source of such domains). Mercer uses the case of North and South Korea to illustrate this technique. For example, if the reference point of Kim Jong-il is the poor economic situation in North Korea, then Kim Jon-il is in the domain of losses (Cha 2002). On the other hand, if Kim Jon-il aspires to control South Korea and use it as his reference point, then he will be deeper in the domain of losses. Mercer considers that knowing what's inside Kim Jon-il's Korea is a difficult task but can be very useful. However, if researchers or policy-makers only know that Jon-il is likely to be in the domain of losses, that is all the information they need to know to make a decision.

⁵⁵ In section 3.3.4.2 we analyse his approach more clearly.

⁵⁶ Ibid.

Mercer states that there are two ways to know whether people are using the status quo or an aspiration as their reference point. He agrees with Taliaferro (2004), who considers that a careful analysis of individuals' "relative perceptions" can be very useful to know their domain. For example, he establishes that since countries care more about relative gains than absolute gains, it can lead us to determine the possible reference point that political leaders will choose. This option can be illustrated with the example of North and South Korea. In the hypothetical case, if North Korea's conditions relative to South Korea get much better, the SQ is the reference point. If North Korea's conditions are relatively deteriorating, a future aspiration is the reference point.

However, Mercer indicates that the problem with this approach is that it can be difficult to structure a detailed and accurate analysis of how decision-makers choose their reference points. In the previous section, Mercer placed George W. Bush in the domain of gains. Conversely, by using Taliaferro's method, Bush could possibly be in the domain of losses before he invaded Iraq in March 2003, and before his initial victory in Afghanistan. Clarke (2004) and Woodward (2004) state that President Bush was very enthusiastic to declare war on Iraq after the 9/11 terrorist attacks occurred in New York City, or even before such events (Suskind 2004). "He viewed anything less than crushing Saddam Hussein's Iraq as a loss" (Mercer 2005a, p. 7). This aspiration located Bush in the domain of losses and led him to carry out a very risky and costly war. Mercer states that the validity of PT depends on the adequate assessment of an actor's aspiration.

The second option is the ideal method to determine people's reference points. According to Mercer it is also a solution to the above problem and is based on the use of more objective data and information. Instead of relying on a subjective analysis of decision-makers' relative perceptions, we can use information found in white papers, planning documents, strategies, public pronouncements, diplomatic communications, instructions to subordinates, etc. (Taliaferro 2004). Elms (2004) considers that the use of economic indices is an appropriate way to identify an actor's reference point. For instance, "in trade disputes, losses and gains are measured in sales or market penetration in the target market" (Elms 2004, p. 249). This method makes actors' reference points (aspirations or the status quo) easier to determine and we can know their domains.

(i.iii) Heuristics

Heuristics can be employed to understand how actors assimilate their environment and how they locate themselves in the domain of gains or losses (Stein 1992; McDermott 1998; Taliaferro 2004). According to Mercer (2005a), when we cannot solve complex problems by using normative models of decision, we employ heuristics or cognitive shortcuts that influence our choices. A good example occurs when people evaluate the quality of used cars by only looking at the odometer rather than evaluating the engine's condition or other technical factors⁵⁷. If a car's odometer level is high, it negatively influences people's perception of its quality. According to Tversky and Kahneman (1974), there are three main kinds of heuristics.

The "representativeness heuristic" occurs when we consider that the probability that object or event X belongs to event or object Y by establishing how similar X looks to Y (Mercer 2005a). In other words, the more X is similar to Y, the higher the probability that X belongs to Y or is generated by Y. The second heuristic is "adjustment and anchoring". This occurs when people have an initial evaluation of an event and use their assessment to anchor following events. During this process, they adjust the assessment by including more information, thus getting a better evaluation of the problem.

Tversky and Kahneman (1974) demonstrated that people tend to adjust their perceptions when they are given a fixed situation. They asked people what percentage of African countries are members of the United Nations (UN). In a first experiment they were asked the following question as the anchor: "was it more or less than 45%?" Subjects responded by giving figures (adjustment) lower than this percentage. In a second experiment they asked if it "was more or less than 65%". Similarly, individuals gave figures below this percentage and never above it.

The last is the "availability heuristic", which occurs when people evaluate a problem's probability by using what comes easily to their mind (Mercer 2005a). If the event is more evident, it becomes easier to remember it, which also leads us to overestimate the frequency of occurrence⁵⁸. Also, subjects tend to use a single case as a whole representation of the population. This situation occurs when, for instance, a politician

⁵⁷ Akerlof (1970) provides an interesting analysis of the market of used cars (lemons). He establishes that there is an asymmetric information game between sellers and buyers. Buyers face the problem of distinguishing good quality from bad.

⁵⁸ Ibid.

considers that private electric utilities are more efficient than public companies by only observing one private company's efficiency to formulate his opinion.

Heuristics can also be used to explain how long and under what conditions people adhere to determined aspirations. Mercer states that if an aspiration becomes an anchor, it can block people from accepting other information, evidence, etc. In other words, people tend to adhere to specific aspirations and show resistance to change. Under these circumstances, when individuals move from one aspiration to other aspiration, a heuristic will be available to explain it⁵⁹. Although heuristics help us to understand how people think and why they locate themselves in a domain of gains and losses, there is no answer to which heuristic is better than another. Conversely, in experimental laboratories, researchers can generate and use heuristics to influence individuals and therefore make them put themselves in one of the two PT domains (Tversky and Kahneman 1974).

(i.iv) Analogies

Analogies are the fourth technique proposed by Mercer (2005a) to define people's domains. According to McDermott (1998), past analogies can be employed as very strong variables to define frames. To illustrate how analogies influence political leaders' decisions, Mercer discusses the analysis of Richardson (1992). Richardson used the availability heuristic to understand the development of the Suez crisis in the mid-1950s. He states that Britain saw Egypt's president, Gamal Abdel Nasser, as the new Hitler. So they thought about the Germany analogy. Also, this event affected Americans, who considered that Europeans were about to lead them into another war.

"Do analogies affect beliefs or do beliefs affect the choice of analogy? Which analogies are the most important and why?" (Mercer 2005a, p. 9.) These are the limitations that users of analogies recognise (Houghton 2001; Khong 1992). However, Mercer states that these problems do not limit analogies to telling us in which of the two domains people are located. Recall that PT only requires the subject's domain but not the source of that domain (Mercer 2005a).

(i.v) Emotion

Emotion is a central variable in PT (Mercer 2005a) because people do not consult utility, but they feel it (Kahneman 1994; Kahneman and Tversky 1984). Similarly, Read

⁵⁹ Ibid.

(2002) considers that when individuals move from one reference point to another, the effects of such changes on people are considered as “feelings”. In the case of political science, emotions are extremely important, because these feelings of losses and gains (with respect to a reference point) have a very strong influence on how choices are made by political actors (Mercer 2005a; Bueno de Mesquita and McDermott 2004; McDermott 2004b). Mercer states that emotions such as greed (Hirschman 1977), desperation (Welch 1992), panic, fear, regret (Jervis 1992; McDermott 2004a), anger, pride (Gries 2004), trust (Mercer 2005b), or the desire for justice (Rabin 2002; Welch 1993b) are key variables that help us to determine actors’ domains.

Mercer uses the analysis offered by Farnham (1997) about World War II to show how emotions affected politicians’ choices. Farnham finds that feelings can lead us to reframe the way we initially structure a situation and therefore how it affects our final decisions. He states that President Franklin D. Roosevelt considered that the European conflict was not acceptable. Farnham indicates that since this crisis was not directly affecting the US, Roosevelt considered that there was no reason for them to participate. Although Americans were convinced that the crisis was surely going to become a war, they were also confident that Allies could easily put an end to the German ambitions.

However, the reports from the battlefield affected the president emotionally. Germany was advancing and taking control of Allied positions. Germans became a real risk, not only for Europe but also for the United States⁶⁰. As a consequence, Roosevelt reframed the war as a loss for Europe and for American interests. Farnham’s analysis shows that people define their choices during the development of the events. It implies that they are not hierarchical and stable (Mercer 2005a; Shafir and LeBoeuf 2002). “It was not about complex ideas, heuristics or dry information that explains how Roosevelt defined his domain, but feelings, mood, and the affect-laden reports of imminent war” (Mercer 2005a, p. 10).

Mercer states that emotions can also lead people to take extreme decisions. By using the analysis of Welch (1993b), he demonstrates that emotions such as the feeling of injustice can trigger risky behaviour. In particular, Welch considers that policy-makers tend to behave in a very passionate way when they discuss social policies. For example, when governments do not adequately protect vulnerable groups, political

⁶⁰ Ibid.

actors have a tendency to fiercely defend these social groups against the omission of the government. Another feature is that people's negative emotions tend to have greater impacts than positive emotions (Frijda 1988). This is because people adapt more rapidly to gains than to losses (see section 2.3.2.). Consequently, individuals react in an asymmetric form to pain and pleasure. A painful situation will place individuals in the domain of losses.

According to Mercer (2005a), these five techniques offer an innovative methodological framework to determine how people frame their environments. He acknowledges that these mechanisms have limitations but solve the problem of the application of PT to political science. "Anyone uncomfortable with these hedges should switch to mathematics, stay in the lab or simply assume an actor's domain and be done with it" (Mercer 2005a, p. 11).

3.3.3.2. Problem 2: The Aggregation Problem

The second problem that explains the lack of interest in prospect theory by political scientists is the "aggregation problem". This term was coined by Levy (1997) and refers to the limitation of PT in its application in collective decision-making. Kahneman and Tversky developed prospect theory by considering the evidence of individual decision-making, not group decision-making (Levy 2003). However, Vis (2009a) solves the aggregation problem by offering evidence that demonstrates why PT can be applied to both kinds of decision levels.

Vis states that this problem can be avoided when political systems are highly concentrated. In other words, individual decision-making becomes collective decision-making when a player holds almost absolute power. For instance, Germany's political and economic system was strongly controlled by Hitler during the Nazi regime (Levy 1997). Another interesting case is found in Mexico, where the Institutional Revolutionary Party (PRI) ruled the country for seventy years. Llosa (1990) called Mexico's political system the "perfect dictatorship". In this regime, the Mexican president was seen as the only person who could make any decision about the socio-economic destiny of the country.

Vis (2009a) considers that for some studies the collective decision-making process plays a fundamental role, which means researchers have to deal with the aggregation problem. She states that this limitation is not as complex as it seems. According to her study, there is a significant amount of experimental and empirical evidence that

confirms that, in many instances, group and individual behaviour are similar. For instance, Bowman (1980) finds that firms from eleven industrial sectors took risky decisions when they were experiencing losses. Similarly, Fiegenbaum and Thomas (1998) demonstrate that companies (2,322) from different industries (47) showed risky behaviour when they were failing to reach the target returns on equity (ROEs). On the other hand, when companies were successful in reaching this indicator they were risk averse.

Vis states that collective decision-making is more consistent with PT than individual decision-making. She confirms it by analysing Whyte's (1993) research, which is based on an experimental study that analysed how people reacted to six investment decision situations. In particular, Whyte explores the "escalating commitment" phenomenon by using PT at the individual and group decision-making levels. Escalating commitment occurs when decision-makers continue to adhere to an investment plan which has been considered unsuccessful. Thus, this incorrect decision is carried out despite it costing the decision-makers a considerable amount of economic resources. The key reason behind the willingness to continue to invest in such a plan is clearly found in the expression "too much invested to quit" (Teger 1980). It is also related to concepts of "sunk costs" (Thaler 1980), "entrapment" (Brockner and Rubin 1985) and the "dead loss effect" (Kahneman and Tversky 1984).

The six hypothetical situations were associated with specific investment problems. For example, scenarios 1, 3 and 5 were based on the following statements: "a bank vice-president who must decide whether to make a high-risk loan to protect an earlier investment"; "an investor in the stock market who must decide whether to sell shares that have declined in value and likely will decline some more"; and "a senior public official who must decide whether to close an expensive but superfluous airport" (Whyte 1993, p. 439). Whyte found that escalating commitment was present at the collective and individual decision-making levels. Interestingly, in some cases, groups behaved much better than individuals in decision-making. Collective decision-making was also more consistent with prospect theory, because it paid more attention to sunk costs (see Section 3.3.2.2). Vis (2009a) states that since sunk costs are a key factor in political players' decision-making processes, PT represents an adequate method to analyse such behaviour.

Kühberger (1998) proposes another study that Vis uses to demonstrate that individual and group behaviour are strongly correlated. The research employs a meta-data

analysis that consists of a data pool of 136 studies that empirically explore the framing effects of 30,000 individuals. Kühberger evaluates how framing effects are structured under different research designs. According to Tversky and Kahneman (1981, p. 453), framing is the “decision-maker’s conception of acts, outcomes and contingencies associated with a particular choice. The frame that a decision-maker adopts is controlled partly by the formulation of the problem and partly by the norms, habits, and personal characteristics of the decision-maker”. In terms of the results on framing groups, he finds that individual and group studies have similar effect sizes. In other words, the way that people frame their choices in collective decision-making has the same characteristics as decisions made at the individual level.

In conclusion, although PT was originally developed as an individual decision-making theory, the review presented in this chapter shows that PT can also be applied to group decision-making in many cases. At the individual level, “the aggregation problem per definition” (Vis 2009a, p. 9) does not represent a limitation to the application of PT. In the case of the collective level (e.g. decisions made within cabinets, groups of advisers, etc.), the diverse evidence found in experiments, meta-analyses and empirical data confirm that such behaviour is compatible with individual decisions (Vis 2009a).

3.3.4. Key Applications of Prospect Theory in Political Science

This section provides an analysis of a selection of recent and key PT applications in political science. We consider that it is important to show how scholars have successfully applied PT to different political phenomena and how they designed specific methodological frameworks to operationalise the PT findings. Recall that PT requires knowing people’s domains (gains or losses) in order to predict their risk propensity. Thus, their methodologies serve as input for PT. We offer a discussion of PT applications in welfare state reforms developed by Vis (2010), politics of market reforms in Latin American economies by Weyland (2002) and three case studies in international politics by McDermott (1998). These works show the explanatory and predictive power of PT and how this theory is fully in line with political behaviour.

3.3.4.1. Prospect Theory and Welfare State Reform

Vis (2010) offers a very interesting application of PT to the case of welfare state reforms in some advanced economies. She considers that the current literature about the study of welfare state reform only focuses its attention on explaining why some economies reform more than others. Such literature excludes the analysis of the governments’ decision-making processes as a mechanism for explaining the dynamics

of welfare state reforms. For example, Vis states that “*partisanship*” theories do not fully explore this behaviour. These theoretical frameworks consider that right-wing governments tend to favour welfare state cutbacks and strongly reduce the support for labour market policies. On the other hand, left-wing governments tend to strengthen such policies. However, Vis indicates that factors such as the current scenario of “permanent austerity” (Pierson 2001) do not allow left-wing governments to easily favour spending. This means that leftist and rightist governments will be at some point forced to carry out drastic economic measures and therefore affect their society’s interests. The consequences of implementing these policies will be reflected in the elections when voters punish their governments. In this way, partisanship theories are incomplete, because they do not state under what situations governments decide to apply risky and unpopular reforms.

The “*socio-economic*” arguments are another method to understand welfare state reforms. This approach considers that social and economic variations (e.g. a sharp decline in the industrial sector, high unemployment levels) lead countries to implement reforms. This argument clearly explains why some economies reform more than others (Bonoli 2007). However, why do some countries not immediately react when the economy is experiencing an adverse scenario such as a high unemployment level (Vis 2009b)? Why do other governments have an instant response when they face a similar situation? “The socio-economic account identifies, so to speak, what loads the gun for reform (socio-economic problems), but fails to pinpoint what triggers this gun off” (Vis 2009b, p. 397). Similarly, the “*crisis approach*” has the same limitations. This literature states that socio-economic shocks lead governments to reform (Rodrik 1996). Vis (2009b) states that this theoretical framework has restrictions, because it does not indicate when crises will lead to political action. It also fails to specify when the costs of waiting to apply the reform will be higher than its benefits.

Vis’ research asks the following questions: 1) “Why are some British, Danish, Dutch, and German governments willing to accept the great electoral risk involved in unpopular reform, while other governments refrain from pursuing unpopular policies? 2) Can insights from prospect theory also help to account for the puzzling variation across governments in welfare state reform? And can these insights help to explain what drives governments’ behaviour in such reform?” (Vis 2009a, p. 13) The answer to the last two questions is yes⁶¹.

⁶¹ Ibid.

In order to determine the governments' domains, Vis structured a methodological framework based on a fuzzy-set qualitative comparative analysis (fsQCA). A fuzzy-set is a "fine-grained, [pseudo] continual measure ... carefully calibrated using substantive and theoretical knowledge relevant to set membership" (Ragin 2000, p. 7). This method allowed her to define the sufficient conditions that led these European governments to implement unpopular reforms (benefit cutbacks). She employs data on labour market policies applied by 23 British, Danish, Dutch and German governments from 1979 to 2005. She finds that in most of the evaluated countries, their socio-economic conditions and their political gains and losses play a decisive role in welfare state reforms. Consequently, deteriorating scenarios (losses) trigger unpopular reforms. The key difference between this finding and the crisis argument is that a country's difficult situation is not enough to reform. For example, Spain has experienced unemployment levels above 10%, but this factor has not motivated the government to make that choice (Vis 2009a).

Her study also finds that deteriorating socio-economic conditions lead to benefit cutbacks if one of two factors is present: a deteriorating political position, or a right-wing government. This is an interesting finding, because the common idea is that governments will easily reform when they are politically strong. PT states the opposite argument; it considers that governments will carry out risky unpopular reforms when they are in a deteriorating political situation, which means they are in the domain of losses. Vis indicates that when governments' political opposition gets stronger (e.g. electoral victories) it also puts them in the domain of losses.

3.3.4.2. Prospect Theory and the Politics of Market Reform in Latin American Economies

Weyland (2002) provides another important application of PT to political science. He analyses how political leaders implemented very risky neo-liberal adjustment policies in Argentina, Brazil, Peru and Venezuela. Similarly to Vis (2010), Weyland states that under specific circumstances, the current literature on the politics of economic adjustment does not give convincing explanations of determined phenomena. In particular, he points out that the "*economic structuralism*", "*political institutionalism*", "*ideational theories*", and "*rational-choice theories*" provide key contributions, but they also have lacunae.

The economic structuralism considers that developing countries implemented market reforms because international financial institutions (IFIs), more specifically

organisations such as the World Bank and the International Monetary Fund (IMF), forced them to. Weyland states that in the case of Latin American countries, the debt problems generated during the beginning of the 1980s, originally when the Mexican government declared its illiquidity, led them to accept a structural adjustment package called the “Washington Consensus” (Williamson 1990). However, he agrees with Stallings (1992), who states that “markets” and “leverage” did not influence governments’ decisions. This is because governments reacted at the end of the decade and not when the debt crisis occurred, between 1982 and 1983 (Weyland 2002). This means that IFI policies were ignored. “Why did Latin American governments suddenly decide to listen?” (Weyland 2002, p. 20.)

When countries decided to implement their reforms, such policies were different from the Washington Consensus. According to the author’s interviews (interview with Mello 1995, Cavallo 1997 and Llach 1997), which were applied to key economic decision-makers from these four countries, their adjustment policies were more painful than the IFI recipes and were prepared by domestic economists. For example, Argentina’s 1991 convertibility strategy and President Collor’s first adjustment plan were structured by local policy-makers. The IFIs were concerned about possible strong social reactions against the governments’ decisions and advised them to be prepared for it (author’s interviews with Boloña 1996, Rodríguez 1996 and Naím 1993). This situation reveals that these governments were independent of external pressures. Consequently, economic structuralist arguments fail to explain the motivations that led these countries to take drastic economic measures⁶².

Political institutionalism theories state that governments tend to implement severe adjustment policies because of their strong institutional structures. For example, governments that enjoy a centralised political system with a centripetal political opposition are easily able to impose drastic economic measures and control opposition groups (Weyland 2002). This approach also states that “long-established and consolidated democracies” (Weyland 2002, p. 23) are more likely to apply orthodox adjustment policies. Conversely, countries that have just moved from an authoritarian to a democratic political system tend to have more limitations in terms of imposing adjustment mechanisms (Kaufman and Stallings 1989; Haggard and Kaufman 1989). New democracies prefer heterodox policies that can stabilise their economies without high costs to society (Weyland 2002).

⁶² Ibid.

Weyland indicates that political institutionalism cannot explain why these countries decided to adopt orthodox strategies. This is because the economies' political structures were unstable and not aligned with the central government. For instance, the majority in Congress was unwilling to support President Fujimori (Peru). Moreover, his party was not politically well organised and therefore it could not adequately strengthen the president's plans. In the case of the governments of Argentina, Brazil and Venezuela, their negotiating capacity levels were not strong enough to obtain support from other political actors to benefit their reforms. This evidence confirms that the political institutionalism argument has restrictions in explaining what triggered the application of adjustment policies⁶³.

According to Weyland, rational choice models can be divided into two groups: economic-distributional models and political decision models. The first category was developed by economists and focuses its attention on explaining rationally why the distributional benefits of adjustment policies are delayed. One of the key reasons that lead governments to postpone these reforms is caused by a "war of attrition" (Alesina and Drazen 1991). It is generated by the actors' unwillingness to accept the political costs of such policies. The policies are applied finally when one of the players does not want to continue with this game or is politically defeated (Weyland 2002).

Another explanatory variable in this category is the economic crisis factor. Rodrik (1994) states that deep crises trigger drastic economic adjustment. In other words, it occurs when the collective gains of stabilisation outweigh its distributional costs (Weyland 2002). Although these theories offer a good explanation, they ignore the high uncertainty levels that surround the adjustment reforms. For instance, these distributional models underestimate the social and political impacts of crises and reforms. Consequently, the role of political parties, politicians and other state structures are excluded from the analysis. The economic-distributional approach is a one-dimensional perspective.⁶⁴

In the case of political decision models, Geddes (1994) proposes a very important methodology. It states that radical stabilisation mechanisms are applied when "political outsiders" emerge. These outsiders impose these measures because their objective is to reduce the incumbents' errors in policy-making. Since they promise to put an end to the crises, people support them. Moreover, they prefer to pay the cost of stabilisation in

⁶³ Ibid.

⁶⁴ Ibid.

order to make neo-liberal reforms irreversible (Przeworski 1991). For example, Presidents Alberto Fujimori, Carlos Menem, Fernando Collor and Carlos Andrés Pérez were relative newcomers and carried out radical market reforms. The problem with this approach is that it does not state under what conditions outsiders emerge and why people opt for these risky candidates and their risky policies (Weyland 2002).

Weyland's research design is based mainly on extensive fieldwork. He interviewed key decision-makers from these four Latin American countries. The interviews provided information on the decision-making processes of the structural reforms'. Moreover, his analysis employs statistical data and information about key events that strongly influenced individuals' perceptions. This allowed him to identify their domains in PT's value function. Data and information about the structural reforms cover the 1980s and 1990s.

The central cognitive-psychological findings of his research are interesting. He finds that market reforms were applied shortly after the presidents took office. The deteriorating conditions that these countries were experiencing led them to immediately respond. More specifically, these economies were strongly hit by uncontrolled hyperinflation that reached over 50% per month⁶⁵. Not only were the political leaders in the domain of losses but the public was also affected enormously by such declining conditions. As a result, and surprisingly, there were no severe social uprisings against the governments' risky policies. Since people were in the domain of losses, they voted for the outsiders who represented the risky choices. People opted for relatively unknown candidates that were not connected with the incumbent presidents.

Conversely, Venezuela showed a different picture. Since this country had moderate inflation and the government hid part of the information about the economic crisis, people did not accept the market reforms. This situation triggered violent protests against the government's decisions.

3.3.4.3. Prospect Theory and International Politics

Our third analysis is based on the PT application developed by McDermott (1998). It attempts to explain why countries take "crazy risks" (McDermott 1998, p. 2). Her study focuses on exploring the cases of the Iranian hostage rescue mission, the decision-

⁶⁵ Ibid.

making processes about the 1979 admission of the Shah of Iran to the US, the 1960 U-2 crisis, and the 1956 Suez crisis.

McDermott states that one of the key factors that have been ignored is how risk-taking behaviour originates. For example, in international relations it is very important to understand what triggers wars or what deters countries from engaging in such conflicts. Political players always face these kinds of decisions involving high risk levels, incomplete information, limited time and high stress. In this way, prospect theory effectively captures all these elements, which are inherent in these choices, whereas other conventional analyses lack convincing explanatory arguments.

PT provides an organised way “to both explain and predict risk propensity” (McDermott 1998, p. 4). PT can explain the *causal* factors behind particular choices and predicts that individuals will adopt cautious behaviour when they are satisfied with their status quo (gains), whereas take risks when they are in bad situations. This means that PT can predict risk tendency given a prior definition of the domain⁶⁶. The author states that this explanatory and predictive technique constitutes a very powerful alternative for exploring highly complex uncertain decision-making processes in situations of risk.

McDermott’s study uses PT as its methodological framework. She indicates that her work is a “parallel demonstration of theory” (Skocpol and Somers 1980, p. 175). In other words, the objective of her analysis is to test PT arguments in different historical events and consequently confirm its applicability in international politics. This technique allowed her to strengthen the development of the theory. In terms of her methodological structure, she studies the decision-making processes of two American presidents in both PT domains (gains and losses). The idea was to find variations in their risk propensities and therefore see if such differences were in line with PT predictions.

President Eisenhower (1953–1961) and Carter (1977–1981) were the two decision-makers analysed by McDermott. The empirical model’s independent variable is a domain which takes the form of gains or losses relative to a reference point. The dependent variable is risk propensity, which can be either risk aversion or risk seeking. The information used to determine the presidents’ domains was based on interviews, memoirs, economic indicators, public opinion polls, important international events,

⁶⁶ Ibid.

newspaper editorials, public opinion and other archival material⁶⁷. She selected the United States because it offers a very good case of a hegemonic status after World War II.

In the case of the Iranian hostage rescue mission, McDermott concludes that this tactical operation failed because of President Carter's bad decision-making process. When Carter decided to rescue the 53 American hostages in Iran⁶⁸, his administration was experiencing extremely adverse conditions. The public, the political opposition and the international community (including the United Nations) were severely criticising how the government was handling Iran-US relations. This means that Carter's administration was in the domain of losses. As a result, he took the riskiest choice⁶⁹, which consisted of sending military personnel to the site where the hostages were held. However, one of the helicopters had an accident and eight people died; the mission was suspended. He opted for the decision that was going to allow him to recover the previous losses and therefore obtain the status quo ante⁷⁰. The hostages were released after the negotiations ended during the first two minutes of Ronald Reagan's administration.

The second event studied by McDermott (1998) was the decision-making process behind the admittance of the Iranian Shah⁷¹ into the US. Her research shows how President Carter had erratic behaviour in this international case. PT demonstrated that the reason that Carter did not allow the Shah to enter the US was because the president was in the domain of gains. Positive internal and external (e.g. the Panama treaties were successful) political situations led him to take a cautious option (the denial of entry to American territory). Then, when Carter saw that his political situation was strongly deteriorating, he shifted his position to the domain of losses. On 23rd October 1979, the president took the risky choice of allowing the Shah to have medical treatment in the US. This decision caused enormous losses for Carter's administration and the country itself. Iranian militants used Carter's decision as an ostensible excuse for the seizure of 53 American citizens.

⁶⁷ Ibid.

⁶⁸ On 4th November 1979, three thousand Iranian students seized a group of American citizens who were in the US Embassy. They were held hostage for 444 days.

⁶⁹ There were other choices such as seeking diplomatic negotiating channels.

⁷⁰ Ibid.

⁷¹ At the beginning of 1979, Shah Mohamad Reza Pahlavi was looking for asylum in the US in order to get medical treatment. Conservative groups considered it politically incorrect and did not want the Shah to be accepted by the American government.

The 1960 U-2 espionage affair offers another excellent example of how decision-making processes coincide with PT. In 1956, President Dwight D. Eisenhower approved an intelligence mission that consisted of carrying out secret overflights in the former Soviet Union by a U-2 airplane. According to McDermott, Eisenhower was in the domain of gains since the U-2 programme started and knew the risks involved in such an operation. However, on 1st May 1960, the plane was shot down by Soviet armed forces. This event moved the American president to the domain of losses. So he decided to implement a risky and badly planned cover-up strategy. Eisenhower understood that he could face a very serious scenario if his spying game was revealed. The web of lies he used to protect his public credibility was uncovered. This decision led Soviets to take severe measures against the US such as the cancellation of an important summit meeting with the Americans and their allies (the United Kingdom and France); this scandal worsened the Cold War between these two countries. Had the cover-up succeeded, the secret of the US espionage programmes would have continued.

Finally, PT shows why, in the 1956 Suez crisis, governments took different decisions. On 26th July 1956, Egypt's President Gamal Abdel Nasser decided to nationalise the Suez Canal. This situation angered the British and French governments, who saw that their economic and colonial interests would be affected enormously by such a decision. The nationalisation placed these European governments in the domain of losses. Moreover, and interestingly, the British and French perceived Nasser as "a modern-day Hitler" (McDermott 1998, p. 148). This "analogy" and their economic losses pushed Eden and Mollet deeper into the domain of losses. Their risky decision took the form of military action against Egypt.

British Prime Minister Anthony Eden and French Prime Minister Guy Mollet attempted to persuade President Eisenhower to join them in order to recover the Canal. However, the American president was in the domain of gains and therefore he did not support them. The strong internal popularity of Eisenhower during this event and the lack of American economic interests in the Canal led him to take a cautious role. In addition, he was convinced that Egypt's new status quo (the nationalisation of the Suez Canal) was acceptable⁷², whereas Eden and Mollet tried to re-establish the old SQ. The risky and costly operation carried out by the Europeans completely failed⁷³.

⁷² Eisenhower considered that military action was going to worsen the situation.

⁷³ On 7th November 1956, a cease-fire was announced by the United Nations.

McDermott (1998) concludes that the PT application to these four case studies demonstrates the theory's explanatory and predictive power. She states that the "dynamic nature of its predictions" (McDermott 1998, p. 176) allows researchers to explore actors' decision-making processes over time. For example, PT can predict that in determined situations, people will attempt to recoup sunk costs and therefore engage in riskier behaviour. Conventional theories of decision-making such as rational choice models have limitations in these kinds of situations.

3.4. CONCLUSIONS

This chapter has presented prospect theory as a very strong alternative to conventional decision-making theories. The empirical evidence of the violations of the expected utility axioms demonstrate that normative models fail to explain how people make decisions. The problem with expected utility models is that their objective is to describe what individuals "ought to do", whereas descriptive theories such as PT focus on what individuals "actually are doing". Any analysis that considers that expected utility models are superior to prospect theory must find evidence against "prospect theory's devastating criticisms of rational choice's descriptive inaccuracies" (McDermott 1998, p. 14).

Contrary to expected utility theory, prospect theory has two phases of decision-making: editing (framing) and evaluation. In the case of the evaluation phase, we showed that the value function is the backbone of the theory, because it states people's risk propensity under determined conditions. If people are in the domain of gains, they will behave in a cautious way. Conversely, if people are in the domain of losses, they will make very risky decisions. This dynamic mechanism can be used to explain the causal factors behind decisions and predict risk tendency prior to the definition of people's domain. Another PT finding that cannot be found in rational models is the "strategic framing" argument.

This chapter discussed the key problems that deter researchers from applying PT to political science. We showed that these limitations cannot be considered to be as problematic as they seem. Although PT is a "reference-dependent theory without a theory of reference point" (Levy 1997, p. 100), researchers' ingenuity has solved this restriction. For example, the five techniques developed by Mercer (2005) allow us to define people's domains. Similarly, the analysis of Vis (2009a) proves that collective decision-making is more consistent with PT. So the lack of interest in the application of

PT to political science can be caused by an unwillingness to use psychology as a methodological framework.

Our analysis of the three PT applications to political science offered interesting information. These studies state that conventional theories do not offer convincing arguments about political decision-making. For example, the role of the International Financial Institutions (IFIs) was not a key determinant that led some Latin American economies to apply very risky and costly structural reforms. PT found that deteriorating economic scenarios triggered governments to adopt such policies. In terms of international politics, we discussed how American presidents made risky decisions because they saw themselves in the domain of losses.

Another remarkable element in the three PT applications was the different methodologies used to determine actors' domains. Vis (2009a) employed a fuzzy-set qualitative comparative analysis to determine the adequate conditions that triggered unpopular reforms. Weyland (2002) and McDermott (1998) designed a methodological system based on statistical data, interviews, official reports, newspaper editorials, key events, public opinion polls, etc. As we can see, PT offers a flexible way to define people's domains and therefore it is not a rigid theory of decision-making.

CHAPTER 4: THE ELECTRICITY SECTOR IN DEVELOPED AND DEVELOPING COUNTRIES

4.1. INTRODUCTION

What were the motivations that led some developed and developing countries to carry out their electricity reforms? What kinds of electricity models were implemented? What are the elements of the electricity privatisation projects proposed by President Ernesto Zedillo (1994–2000) and President Vicente Fox (2000–2006)? This chapter answers these questions by presenting a review of the most important elements of such projects. Section 4.2 offers a discussion about the reasons behind electricity reforms in key economies. For instance, we discuss the reasons that led the British government to reform the electricity markets in England and Wales. The case of Chile is also reviewed, where the political conditions in the 1970s led to a radical change in the structure of its electricity industry, from public to private ownership.

Section 4.3 reviews the electricity models applied by an important group of developed and developing countries. We analyse the British experiment, which has been considered to be a guiding model for other countries. One of its key features is the creation of the Electricity Pool. Countries such as Colombia based its electricity reform on the British system. Section 4.4 offers a discussion of the two electricity projects that have been presented by the Mexican government. We pay special attention to the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act – which is the law that has allowed private sector participation in electricity generation. However, the Mexican electricity industry is still a vertically integrated sector and is under public control. To allow private investors to freely participate in the industry, the Constitution must be modified.

4.2. INTERNATIONAL CONTEXT FOR STRUCTURAL CHANGE IN THE ELECTRICITY SECTOR

4.2.1. Determinants of Electricity Reform in Developed Countries

Although developed economies started implementing electricity industry reforms in the early 1990s, the private sector had already participated in such industries. At the end of the nineteenth century, private capital played a fundamental role in the development of different industries (e.g. water and telephone services) in Europe, North America, Africa, Asia and some regions in South America (Kessides 2004). However, after World War II the structure of the electricity sector around the world changed. Countries

started modifying the industry from private to public ownership under different variation levels.

According to Nawaal Gratwick and Eberhard (2008), this phenomenon was mainly caused by four factors. First, since the electricity industry has network characteristics, governments consider it to be a *natural monopoly*. A monopoly has the advantage of supplying goods or services less expensively than a market with multiple firms. This is because low average costs lead to a higher production level (Joskow and Schmalensee 1983). As a result, governments considered that a natural monopoly under a public ownership structure was the best option in order to protect people from the opportunistic behaviour of companies.

Secondly, since electricity generation requires large amounts of capital to maintain the generators' economies of scale, public ownership was the solution to reach such an objective. Thirdly, the three productive processes in the electricity industry can only be fully coordinated by a public company. Finally, the authors consider that the strategic characteristics of the electricity industry led governments to keep it as a public organisation. For instance, governments are able to use it as a trigger for developing their economies' industrial sector (Yergin and Stanislaw 2002).

In this way, Nawaal Gratwick and Eberhard indicate that during the 1970s and the 1980s, the public ownership approach was severely questioned. They state that the factors that influenced governments to leave the status quo can be structured into five elements. First, ideology played a key role in forcing governments to move away from public ownership. Secondly, the development of new technology such as combined cycle generators (fuelled by gas), lowered electricity plants' capital costs. Jamasb et al. (2004) and Thomas (2003) state that although the old model (monopoly) had different theoretical advantages, there were a high number of practical problems that affected such a system. For instance, utilities lacked control over costs and governments overinvested to prevent electricity shortages (Thomas 2003).

Thirdly, the emergence of information and communication technologies gave policymakers the opportunity to control the three electricity processes (generation, transmission and distribution) without a vertical integration scheme. Fourth, the strong regulation on vertically integrated utilities was not considered efficient (Bacon 1995). Jamasb et al. (2004) state that the driving element that led developed countries to carry

out electricity sector reforms was the improvement of the industry's economic and financial performance.

4.2.1.1. United Kingdom (England and Wales)

In the particular case of the United Kingdom, the main reason to privatise its electricity system was ideological (Bunn 1994; Newbery 1997). Pollitt (2002) considers that the electricity reform in the UK was mainly based on theoretical arguments related to property rights, bureaucracy, influence theories, economic regulation theories and commitment theories. These perspectives can be reflected in a speech by Nigel Lawson, who was the Chancellor of the Exchequer during the Thatcher administration: "the Conservative Party has never believed that the business of government is the government of business" (Newbery 1997, p. 3).

Similarly, Newbery and Pollitt (1997) indicate that the electricity model (in England and Wales) that was publicly controlled from 1948 to 1990 was a typical case of a cost-of-service regulated utility with extremely high capital costs and with a strong dependence on high-cost coal. Moreover, they point out that there were interests that were difficult to control under a public ownership structure. Groups such as the coal miners, the energy department, the treasury, large industrial consumers and the sector itself were affecting the sector's efficiency.

In terms of the political dynamics, the electricity privatisation plan was firstly announced in the Conservative Party Manifesto of 1987. The decision to reform the electricity supply industry led to a tense discussion between the government, political parties and very strong interest groups. There were groups such as the Central Electricity Generating Board (CEGB), the financial community, the British equipment supply industry, the nuclear power industry and the miners' union that had to be conciliated (Midttun and Thomas 1998). Although there were fierce debates about electricity reform, the power of the Conservatives in Parliament and the strength of the Cabinet blocked opposition groups (Bortolotti and Pinotti 2004). Thus, the reform was approved on 1st April 1990 (known as Vesting Day).

4.2.1.2. Norway

Norway was the second European economy to liberalise its electricity industry. The main factor that led the government to reform this sector was its dissatisfaction with the pricing system and the way the investments were handled. Moreover, the British electricity experiment and the reform initiatives that the EU was still preparing

motivated the Norwegian government to design its own economic project. So the ministries of finance and energy worked together with the Norwegian School of Economics and Business Administration to structure a reform proposal (Midttun 1996).

The political debate on electricity reform was not a complex issue in Norway. Although some political segments in Parliament were not strongly convinced about the proposal, they voted in favour of the government's economic reform⁷⁴. According to Midttun and Thomas (1998), one of the reasons that the reform was politically supported was the country's free market tradition. This situation can be reflected in a statement by a government representative in the Norwegian parliament: "More market and less regulation is a principle that gains more and more approval in industrialised countries, irrespective of ideological point of departure and political mode of governance" (Midttun 1996, p. 53). Moreover, since the reform had a discreet ideological and political profile (Midttun and Thomas 1998), political actors were able to reach agreements, and therefore Parliament (Storting) approved it in June 1990. This condition did not motivate interest groups to block the electricity reform⁷⁵.

4.2.1.3. European Union

The British reform was seen as an attractive policy in other European countries. In fact, the motivation for reforming the electricity sectors in the European Union (EU) was similar to the British case. Pollitt (2009) states that the European Commission's theoretical objective was to implement a reform based on the theory of the competitive markets. This means that the purpose of the reforms was to develop a market structure with competing electricity generators and retailing companies. The decision to reform the electricity industry by the EU came after Norway liberalised its electricity sector.

Although the EU finally decided to liberalise its electricity markets in 1996, there were different discussions about the structure of the reform proposals between the EU members. For instance, the socialist group in the European Parliament was concerned about the adequate conditions for guaranteeing the electricity supply to member states (Eising 2002). Countries such as Belgium, France, Greece, Italy, the Netherlands and Spain were not entirely satisfied with the reform, because they considered that such a policy was going to negatively affect the economic conditions of their sectors⁷⁶.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid.

4.2.1.4. United States

The US electricity market has traditionally been under private ownership for many years⁷⁷. More specifically, electricity was supplied by regional monopolies that owned the power generators and the transmission lines for electricity distribution. In exchange for allowing these utilities to have monopoly power over electricity customers, states strongly regulated them. During the 1980s, under this structure there were efforts from the government to introduce more competition into the wholesale electricity market where the regulated vertically integrated monopolies were operating.

One of these efforts materialised in the 1978 Public Utility Regulatory Policy Act (PURPA). This law had the objective of allowing independent power producers to build generators and sell electricity to utilities. Although PURPA was originally created to improve energy efficiency, it unintentionally encouraged deregulation in the American electricity supply industry (Bacon 1995). Unfortunately, these measures were unable to increase the competition level sufficiently because of the industry's vertically integrated system (Joskow 2003).

According to Joskow, during the twentieth century the US electricity sector was efficient on average. The industry enjoyed a high productivity rate and was very competitive compared to international standards in terms of production costs, labour productivity, etc. During the 1970s and 1980s, problems started to appear when fossil fuels, inflation, interest rates and nuclear plant costs increased considerably (Joskow 1974, 1989). These events raised the real retail electricity prices. Although prices started to decline during the mid-1980s, the costly long-term contracts of nuclear investments continued to negatively affect retail prices.

The states of Massachusetts, Rhode Island, New York, New Jersey, Maine and Pennsylvania were the main entities affected by high retail electricity prices. The political sector was thus interested in electricity reform. Other interest groups such as industrial customers and independent power producers were also promoting a change in the industry's structure (White 1996). One of the reform supporters was Enron, which played a key role in motivating these pioneer states to deregulate their electricity markets (Joskow 2003). The selling argument promoted by this company to state regulators and legislators was that competition was going to radically reduce retail prices. The deregulation process was carried out during the 1990s by a series of

⁷⁷ For instance, the first power station was built by Thomas Edison in 1882 and it was financed and controlled by private capital (Nawaal Gratwick and Eberhard 2008).

federal actions and decisions by the states. This debate led to the creation of laws that ordered the breaking up of monopolies.

4.2.2. Determinants of Electricity Reform in Developing Countries

The determinants of electricity reforms in developed and developing economies have been significantly different. There were macroeconomic conditions that led developing countries to reform their electricity supply industries. For example, the 1970s oil shocks affected countries in different ways. These shocks increased inflation levels and foreign debt. The negative macroeconomic and fiscal scenarios forced governments to implement radical structural reforms, which decreased public spending levels and promoted the participation of foreign investments in the economy (Williams and Ghanadan 2006).

These factors put the energy sector at risk, particularly the electricity markets. According to Jhirad (1990), during the 1980s, the loans that were employed for energy projects represented 25% of developing countries' total foreign debt service. Williams and Ghanadan (2006) consider that although some countries' utilities were profitable, the public debt financing was not enough to meet future investment plans. This situation was caused by an expected increase in electricity demand from 471 to 844 gigawatts (GW) during the 1990s. So, in order to satisfy such demand, governments needed 1 trillion USD, 100 billion USD per year (Williams and Ghanadan 2006; Jhirad 1990; Dunkerley 1995).

Under this context, international financial institutions and multilateral organisations played a key role. Institutions such as the World Bank and the International Monetary Fund (IMF) offered new loans for energy investment projects and to renegotiate developing countries' foreign debt (Ruiz-Mendoza and Sheinbaum-Pardo 2010). This financial support was conditioned to determine recommendations that were based on the neo-liberal policies of the Washington Consensus. These recommendations were: a) countries need to attract foreign and domestic private capital; b) economies had to integrate their energy markets, which was a key condition for the development of a regional economic integration; c) countries had to increase their electrification rates; and d) countries had to develop mechanisms for increasing energy efficiency (Ruiz-Mendoza and Sheinbaum-Pardo 2010; IADB 2000).

It is important to highlight that the World Bank's role in the energy sector has always been very important. From 1947 to 1991, 15% (US\$75 billion)⁷⁸ of this organisation's total loans were channelled into different energy projects (Nawaal, Gratwick and Eberhard 2008). Moreover, during the 1980s, 7% of the bank's total financial resources for energy investment was provided to developing economies (World Bank 1993). As we can see, the World Bank played a key role in electricity reforms. This participation is reflected in one of the bank's influential reports called "The World Bank's Role in the Electric Power Sector".

This document provides a list of five recommendations (grouped under five principles) that also represent the prerequisites of the bank's lending policy. These guiding principles can be summarised in the following points: countries have to structure a clear legal framework; developing countries have to import services (e.g. a well-educated and trained labour force) from more advanced economies to improve their weak public and private sectors; and countries have to develop the corporatisation of the private sector participation in their energy industries. Countries with a strong commitment (in line with the above principles) to improve their electricity markets will have adequate financial support and the promotion (by the World Bank) of private investments in their electricity industries through different lending mechanisms (e.g. lending to financial intermediaries)⁷⁹.

4.2.2.1. Chile

Electricity industry reforms in developing countries have been carried out under different economic, political and structural conditions. In this way, Chile constitutes an interesting case, because it was the first economy in the world that implemented reform of its electricity supply industry. The country's political circumstances were the key factors that led to a complete change in Chile's electricity model. More specifically, electricity reform was one of the consequences of the overthrow of President Salvador Allende (1970-1973) in a military coup led by General Augusto Pinochet.

During Allende's administration, many companies were nationalised, including banks and utilities, which represented 39% of the country's GDP in 1973 (Pollitt 2005). When Pinochet assumed power in December 1974, he started implementing neo-liberal economic policies developed by Milton Friedman, Al Harberger and other key

⁷⁸ In 1990 prices.

⁷⁹ See World Bank (1993) for a detailed analysis of these five principles.

economists from the University of Chicago⁸⁰. All the companies that were nationalised by Allende were returned to the private sector. Moreover, in the 1980 Constitution, Pinochet strengthened the defence of property rights and commercial information against legislative and administrative abuses (Bitran and Serra 1998).

The electricity reform was developed by Chicago economists. They designed the regulatory and legal structure, which was reflected in the 1982 Electricity Act. According to Pollitt (2005), Chilean officials visited the UK, Belgium and France to obtain some information about electricity reforms. Although these economies did not have enough experience of it, the Chilean authorities returned to their country with interesting ideas. For example, they returned with the idea of separating the electricity generation and distribution sectors. Another idea was the dispatch system based on a marginal cost structure⁸¹.

4.2.2.2. Argentina

The electricity market reform in Argentina was one of the key elements of the neo-liberal project in Latin America (Haselip and Potter 2010). It started when Carlos Menem became the Argentinean president from the Peronist Party. Although Menem's economic agenda focused initially on radical social reform, he changed his position and implemented a massive privatisation programme. Pollit (2004) considers that the reason behind such a policy change was the country's hyperinflation. This privatisation programme sold 154 public companies in energy, railways, banking and other sectors. The sale of these companies generated US\$18 billion (Shaikh 1996), which decreased the public debt and associated interest payments (Ennis and Pinto 2002).

In terms of the electricity reform, the industry's structural change started in 1989 with the Federal Electricity Pact. During 1990 and 1991, the electricity sector's structure was designed by considering many aspects of the Chilean model with some adjustments. In April 1992, a new Electricity Law (24,065)⁸² was promulgated, which announced the separation and sale of the utilities, the creation of a wholesale electricity market and a regulator⁸³. The reform was led by the Minister of Energy, Carlos Bastos, and was supported by the World Bank.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² The Electricity Law and the Decree 634/91 established the legal structure for the new electricity industry model.

⁸³ Ibid.

4.2.2.3. Brazil

Similar to other developing and developed countries, Brazil followed the trend towards privatisation and deregulation of electricity markets. The Brazilian privatisation programme raised nearly US\$90 billion, whereas the electricity privatisation generated US\$15 billion alone (Gabriele 2004). Other factors put enormous pressure on the government to carry out electricity reform. For instance, the 1980s debt crisis and the country's economic instability increased the inflation level. In order to control the inflation, the government applied different kinds of measures.

One of these anti-inflationary mechanisms was implemented by the Ministry of Treasury, which artificially lowered electricity tariffs to keep inflation at a stable level (Mendonça and Dahl 1999). However, this mechanism and the loss of international credit negatively affected public investment in the electricity industry (Oliveira and Araújo 1996), and therefore this sector experienced a severe crisis. The reform process started in 1993 with Law 8631, and from 1993 to 1995 the State established the new administrative and institutional rules that facilitated the privatisation process. Law 9648 and Decree 2655 announced the formation of a wholesale electricity market (Ruiz-Mendoza and Sheinbaum-Pardo 2010). Unlike Argentina and Chile, the Brazilian electricity reforms were gradual and more cautious.⁸⁴

4.2.2.4. Colombia

Finally, the Colombian electricity reform was also inspired by the previous neo-liberal experiments, mainly from the British (England and Wales) and Chilean cases (García and Dyner 2000). Additionally, the reform was triggered by an adverse scenario in the electricity industry. According to Larsen et al. (2004), there were three reasons that led the government to modify the country's electricity model. Firstly, there were two key blackout periods (1983 and 1992–1993) that politically affected the government. So politicians had to find a solution to protect their political capital against these events that were unacceptable for voters. Secondly, to solve the blackout problems the government needed to expand the electricity system capacity. However, there were not enough economic resources for that operation, because resources had been channelled into anti-poverty programmes. Consequently, a private financing scheme was the ideal solution to this problem. Finally, to increase the efficiency levels of the generation capacity, deregulation and incentives for the private sector were needed.

⁸⁴ Ibid.

In this way, the reform started in 1994 when Electricity Law No. 143 and Public Services Law No. 142 were officially approved (Ruiz-Mendoza and Sheinbaum-Pardo 2010). These two laws announced the separation of the vertically integrated electricity system, competition among new electricity generators, promotion of private investment, development of the electricity pool market, creation of the regulatory framework and third-party access to transmission and distribution networks⁸⁵.

4.3. THE ELECTRICITY INDUSTRY MODELS

4.3.1. The British Electricity Model

Before privatisation, the Central Electricity Generating Board (CEGB) operated the electricity market in England and Wales. The CEGB was one of the world's largest electricity companies (55 GW of capacity in 1989) and controlled all the electricity generation and transmission systems (Green 1991). There were twelve regional area boards that distributed electricity to consumers in their respective areas. In other words, the CEGB and the regional boards had a monopoly over the wholesale market and the retail supply respectively (Vickers and Yarrow 1991b).

Under the Electricity Act 1989, the vertically integrated state-owned Central Electricity Generating Board (CEGB), with its 74 electricity generators, was divided into four companies. National Power was given 60% of the generating capacity and the rest was given to PowerGen (Newbery 2004). The nuclear power stations were placed in Nuclear Electric, which was not initially privatised. It was kept under public ownership until 1996, when it was sold as British Energy (Newbery and Pollitt 1997). The distribution sector, operated by the twelve regional boards, was sold without any structural modification and they were renamed as regional electricity companies (RECs). The transmission sector, which was previously controlled by the CEGB, was placed in a new company called the National Grid Company (NGC). The NGC is owned by the RECs.

The most interesting institutional transformation in the British electricity market was the design of the Electricity Pool (Newbery 2004). This system was introduced in 1990 but it had to be transformed because electricity prices did not substantially decrease. As a result, in 2001 the Pool was replaced by the New Electricity Trading Agreements (NETA), and in 2003 the British Electricity Trading and Transmission Agreements (BETTA) was introduced. Initially, the Pool's objective was "a compulsory bulk

⁸⁵ Ibid.

electricity spot market that determined the merit order and wholesale price of electricity in Britain” (Newbery 2004, p. 3).

This new system operated on the basis of bids from the generators. Each day the generating companies had to indicate at what price they were willing to supply electricity and provide information on their power availability for each of their generating units. Companies had to carry out these operations in 48 half-hourly blocks over a 24-hour period⁸⁶. These bids had to be notified one day in advance to the National Grid Company (NGC), which was responsible for controlling this system. The NGC used this information to rank stations into merit order (Vickers and Yarrow 1991b). Conversely, before electricity reform, the CEBG used a merit order of increasing costs based on the stations’ costs (Green 1991).

According to Thomas (2006a, p. 589) the wholesale electricity market principles can be summarised in the following way: “1) supply and demand was balanced every half hour; 2) all generators had to make a successful bid into the Pool to operate their plants; 3) the Pool price was the highest successful bid and paid to all successful bidders; and 4) retailers had to buy all their supplies from the Pool at Pool price”. The price that was paid to generators for supplying electricity to the Pool at a specific half hour was the pool input price (PIP). Vickers and Yarrow (1991b) state that this price was the result of two components.

The first component was the system marginal price (SMP), which was the cost of the most expensive generator used in each half hour of the schedule (Green 1991; Bunn 1994). It was based on the projected demand and ignored transmission constraints (Newbery 1999). The second component was a capacity factor, which was paid for all capacity that was considered available whether or not the generators supplied electricity to the system.

However, the Pool experienced serious problems. The first problem was that electricity generators were able to restrict supply and therefore increase wholesale prices. This situation occurred after the system started its operations when there were few generators, particularly PowerGen and National Power (Pond 2006). In other words, there was price manipulation in the bidding process. This opportunistic behaviour allowed generators to artificially increase the Loss of Load Probability (LOLP) by taking

⁸⁶ Ibid.

generating sets out of service (Tovey 2003). The LOLP is a measure that indicates probabilistically that the demand will be met⁸⁷. Another problem was that generators and electricity suppliers avoided the Pool by using long-term contracts, which were not linked to the Pool price, to carry out their sales and purchases (Thomas 2006a). These events led the Office of Electricity Regulation (OFFER) to force PowerGen and National Power to sell part of their electricity generating capacity to allow more companies to participate in the market (Tovey 2003).

These problems in the Pool led the government to change the electricity market. In 1997, New Electricity Trading Arrangements (NETA) were introduced but did not actually start operating until 2001⁸⁸. NETA was created to promote competition in the wholesale electricity market. In other words, the government tried to decrease electricity prices and reduce the companies' market power. NETA is based on bilateral trading between generators, suppliers, traders and customers (OFGEM 1999).

According to Thomas (2006a), NETA is a very complex system, but its principles are simple. For example, one of the characteristics of NETA is that it is based on long-term confidential contracts (not disclosed to regulators). Consequently, there is no "marker price" in NETA (Thomas 2006a). After the implementation of NETA, wholesale prices decreased by around 40% (Pond 2006). In April 2005, Scotland was incorporated into the electricity market under the British Electricity Trading and Transmission Agreements (BETTA), which is the expansion of NETA. The principles of this system were not modified and its objective is to have an integral wholesale market.

The introduction of competition for final consumers is another key characteristic of the British model. The retail market was opened up to users in three phases (Pond 2006; Thomas 1998). The first phase occurred after privatisation, when industrial users who annually consumed more than 1 MW (around 5,000 customers) were able to buy electricity from any accredited supplier. In 1994, the number of users increased to 50,000, when the limit was reduced to 100 kW (Pond 2006). Then, in 1999, the market was opened up to all domestic users (more than 26 million). The options available were any of the regional electricity companies (RECs) and new entrants (Thomas 1998).

⁸⁷ In summer, this variable can be low or zero because of the surplus capacity. Conversely, the shortages caused by cold winters can increase the LOLP value.

⁸⁸ Ibid.

The 1989 Electricity Act considered the creation of the Office of Electricity Regulation (OFFER), which was headed by the Director General of Electricity Supply (DGES). Professor Stephen Littlechild was the first person to hold this position. He was a key player in the regulatory policy-making in the telecommunications and water sectors (Vickers and Yarrow 1991b). The regulatory framework and its policies were based on previous mechanisms used in the telecommunications sector. One of these measures was the RPI (retail price index)-X system, where X is a productivity factor that is set by the regulator. The formula's objective is to control the transmission and distribution prices (Pond 2006). Moreover, it encouraged companies to increase their efficiency levels and reduce costs⁸⁹. Under this scheme, the National Grid Company and the regional companies could raise their prices at the inflation level minus an X factor (Littlechild 1983). In 1995, the formula was evaluated, so the X factor included the companies' rate of investment.

In 1999, OFFER became the Office of Gas and Electricity Markets (OFGEM), which was the result of the merger between the gas and electricity regulators. The new regulator was established under the Utilities Act of 2000. OFGEM implemented the same objectives as OFFER. In addition, this new regulator has the duty to grant permission for generation, transmission, supply and distribution activities. OFGEM also has the duty to protect vulnerable social groups (e.g. disabled and low-income people), individuals from rural areas and to control the effects of the electricity industry on the environment (Simmonds 2002).

Finally, it is important to state that although the British electricity system has been promoted as a model by different countries and international organisations, there are different positions about the benefits of this market approach. For instance, Newbery and Pollitt (1997) state that the privatisation and restructuring of the Central Electricity Generating Board (CEGB) in England and Wales led to key benefits. They used a social-cost benefit analysis to study the British experiment. They found that the important benefits were connected to the efficiency gains from the generators, and the switch away from nuclear fuels and coal⁹⁰. Domah and Pollitt (2002) applied the same methodology to analyse the twelve regional electricity companies. They found that the new electricity model benefited society, but these benefits were not uniformly distributed in the different social groups.

⁸⁹ Ibid.

⁹⁰ Ibid.

Conversely, there are scholars who are not completely convinced about the British model's benefits. Thomas (2004) considers that the new market structure is controlled by confidential long-term contracts, and the generating and retail companies dominate the market. Moreover, vulnerable groups (e.g. poor people and small consumers) are not well protected under this system. Similarly, Thomas (2006a) states that the British model is used as the basis for electricity reforms in the world because it leads to reductions in real electricity prices. However, he states that the reforms that have been implemented in the electricity industry have failed in terms of creating an efficient and transparent wholesale market. In particular, this failure "places the onus on consumers to impose competitive forces on electricity companies by switching regularly" (Thomas 2006a, p. 583). Thomas concludes that the good results in the British case are caused by three elements: 1) "Good luck, particularly extremely advantageous fossil fuel markets" (Thomas 2006a, p. 599); 2) an important progress in the nuclear plant's performance; and 3) since the electricity industry was sold for "less than a half of its accounting value", taxpayers transferred resources to electricity users.

4.3.2. Electricity Market Model in Chile

The electricity reform in Chile started under the 1982 Electricity Act, which describes the current legal structure of the Chilean electricity market. Endesa was one of the state-owned companies that controlled generation, transmission and distribution of electricity in Chile. This company was divided into fourteen companies: six generators, six distribution companies and two small companies that generated and distributed their own electricity. Another utility that was divided into three companies was Chilectra: a generator and two distribution firms (Pollitt 2005). At this time, Chile has 31 generating firms, five transmission firms and 36 distribution firms. The lack of restrictions on foreign investors has allowed the free entry and exit of companies in the generation and transmission operations (Nagayama and Kashiwagi 2007).

The electricity reform led to the creation of a market that consists of four regional independent systems: the Sistema Interconectado Central (Interconnected Central System – SIC), the Sistema Interconectado del Norte Grande (Norte Grande Interconnected System – SING) and two smaller sub-systems. The market is operated by the Centro de Despacho Económico de Carga (Economic Dispatch Load-Centre CDEC). The CDEC is managed by the most important generators and transmission firms. SIC covers the central and southern areas, whereas SING covers the country's northern area. The system that operates in these markets requires generators to define their electricity availability and their marginal operating cost every hour.

According to Pollitt (2005), this information is used to determine the spot price (basic marginal electricity price), which is employed by the generators to carry out their trading operations among themselves. This price is strongly influenced by the water's opportunity cost. In other words, it is mostly based on a hydroelectric system, which depends on Chile's main reservoir, Las Lajas. There is a strong correlation between the spot price and the water level in that lake (Arango et al. 2006). In terms of regulation, the government created different organisations (Basañes et al. 1999). For example, the Comisión Nacional de Energía (National Energy Commission – CNE) has the objective (with the Ministry of Energy) of designing the electricity policy and establishing the regulated distribution charges. The Superintendencia de Electricidad y Combustibles (Superintendent of Prices of Electricity and Fuels – SEC) has the responsibility of obtaining information that is used to implement the regulatory policies efficiently, to respond to customer complaints and to apply fines for low quality services (Pollitt 2005).

4.3.3. Electricity Market Model in Argentina

The new structure of the Argentinean electricity market was based on the experiences in the United Kingdom and Chile. The idea of the horizontal-vertical unbundling of the sector was taken from the UK model. The open access wholesale system, the marginal cost pricing and the deregulation of large electricity consumers were based on the Chilean model (Besant-Jones 1996). Moreover, Argentina included new elements in its model which are related to the restriction of ownership concentration across (vertical) and within (horizontal) segments and the introduction of an electricity regulator (Estache and Rodriguez-Pardina 1996).

Argentina's largest utility, Servicios Eléctricos del Gran Buenos Aires (SEGBA), was divided into five generators and three distribution firms. Edenor (Empresa Distribuidora y Comercializadora Norte), Edesur (Empresa Distribuidora Sur) and Edelap (Empresa de Electricidad de la Plata) were the companies created from SEGBA. The country's second largest utility was Agua y Energía Eléctrica (AyE), which had 16 generators, transmission networks and regional distribution firms. In 1993, these companies were sold and divided up (Pollitt 2008). In the same year, Hidroeléctrica Norpatagónica (Hidronor), which controlled hydro power stations in the Comahue area, was privatised. This operation included the granting of concessions for controlling the transmission grid, Compañía de Transporte de Energía Eléctrica de Alta Tensión (Transener).

According to Pollitt (2008), in 2001 there were more than 40 generation firms and 30 distribution firms managed by private investors. The role of foreign investors has been an important element that has influenced the Argentinean electricity market. Companies such as AES (US), Endesa (Spain) and Total (France) are key players in electricity generation. Moreover, foreign investors have carried out other market operations. For instance, the British company National Grid purchased Transener, Edesur was taken over by Endesa and Edelap was purchased by AES⁹¹.

The new wholesale electricity market (Mercado Eléctrico Mayorista – MEM) covers 93% of the country's electricity demand. The Mercado Eléctrico Mayorista del Sur de Patagonia (MEMSP) covers 6% of the market, and the rest of the demand is covered by other systems. MEM is controlled by Compañía Administradora del Mercado Mayorista Eléctrico SA (CAMMESA), which is a non-profit corporation owned by the federal government, electricity generators, brokers, large consumers, distributors and transmission firms (Bouille et al. 2002).

CAMMESA has a cost-based electricity price determination system that works under a bidding structure. Nuclear and thermal generators have to submit their bids, indicating the price they are willing to accept and their available capacity (every hour for the next six months). Hydroelectricity power plants have to specify the value of water in their reservoirs (Pollitt 2008). Electricity transmission lines are operated under concession contracts of 95 years, which are renewed every 15 years. Similarly, electricity distribution is operated and regulated under contracts of 99 years⁹². The distribution concession contracts guarantee the electricity supply to all residential and small consumers, but at the same time, these contracts guarantee the concessionaires' monopoly (Bouille et al. 2002).

The Ente Nacional Regulador de la Electricidad (ENRE) was created to be responsible for the application of the regulatory policy. Bouille et al. (2002) state that this regulator has the objective of setting the transmission and distribution tariffs, protecting users' rights, promoting competition in generation, applying laws for the transmission and distribution companies and promoting investments.

⁹¹ Ibid.

⁹² Ibid.

4.3.4. Electricity Market Model in Brazil

Similar to other countries, the original structure of the Brazilian electricity model was based on a vertically integrated system. However, the government changed it under Law 8631, which considered the British electricity system as its initial model. The elements that were adopted from the UK were the industry regulator, the independent system operator, bilateral contracts, a spot market and unbundling of electricity generation, transmission, distribution and trading (Wanderley et al. 2011).

The government created the Mercado Atacadista de Energía Eléctrica (MAE – Electric Energy Wholesale Market). This market allowed large consumers (10 MW and more than 2 MW since 2000) to buy electricity from generators and independent power producers (IPPs). Moreover, the MAE defines the spot price by using an optimisation model (Arango et al. 2006). In terms of regulation, the Agência Nacional de Energía Eléctrica (ANEEL – National Electricity Agency) was created and had the objective of preparing the technical analysis to meet quality standards, structuring transmission costs and applying tariff reviews in the retail market (Wanderley et al. 2011).

However, the 2001 electricity crisis led to key changes in the Brazilian electricity system. The crisis was mainly caused by problems in the new electricity model. More specifically, this event was triggered by a lack of investment in generation capacity, a poor legal framework, an inadequate grid development and a lack of effective planning (Arango et al. 2006). Moreover, the reform process was severely criticised because it was completely disorganised. This means that the process did not have an adequate order; that is, to develop and apply the regulatory framework and after that to carry out the privatisation to allow foreign capital to participate in the electricity market (Wanderley et al. 2011).

As a result, the government had to implement determined measures that attempted to rationalise the country's electricity consumption from June 2001 to February 2002 (De Souza and Legey 2010). Some of these measures included information campaigns on television to promote energy rationalisation (Almeida and Pinto 2005). These conditions led the government to apply other reforms to shift its electricity policy. The 2004 reform focused mainly on modifying the regulatory framework under Law 10847, Law 10848 and Decree 5163. According to Dutra and Menezes (2005), the framework has three main objectives: 1) to have an adequate electricity contracting system for captive consumers; 2) to supply electricity at low prices; and 3) to supply electricity to all socio-economic sectors around the country.

The above reforms also strengthened the role of the government in the electricity sector. In particular, the planning and policy-making processes were more centralised. Other elements that were considered in these reforms were the creation of two contract environments in the wholesale market: 1) Regulated Contracting Environment and 2) Free Contracting Environment. The first environment is connected with the wholesale power pool and its objective is to protect captive consumers. It is based on long-term contracts from 15 to 30 years between generators and distribution firms. The second environment allows large consumers (more than 3 MW) to freely choose their electricity suppliers.

4.3.5. Electricity Market Model in Colombia

In 1994, the government started to reform the country's electricity market under Laws 142 and 143. The new model had the objective to unbundle the public utilities' electricity productive chain, to trigger private competition in generation and supply divisions, and allow third-party access to transmission and distribution systems (Ruiz-Mendoza and Sheinbaum-Pardo 2010). Colombia used the British electricity system as its model, which was adapted to the country's own needs. The reform included the creation of an electricity spot market (pool) and a regulatory framework. The Regulatory Commission for Electricity and Gas was created to control the electricity and gas sectors and to manage the interdependence between these two industries.

Another key characteristic of the Colombian electricity reform is its mixed ownership structure. In other words, private and public investments can participate together in the market under the context of regional and central governments⁹³. Larsen et al. (2004) state that the Colombian system allowed incumbents to maintain their productive operations as electricity generators and distributors. However, there were some important restrictions. For instance, distribution firms can only buy 60% of their electricity from a generator and the remaining 40% from other companies. Moreover, generators or suppliers cannot have a market share above 25% of the total⁹⁴.

One of the public utilities that was part of the privatisation process was the Empresa de Energía de Bogotá (EEB). This is a very important company because it supplies electricity to the capital of the country, Bogotá, and another 95 municipalities (Cavaliere et al. 2007). In 1996, Bogotá's City Council and other organisations such as trade unions allowed the sale of 49% of the utility. The remaining 51% was kept under public

⁹³ Ibid.

⁹⁴ Ibid.

ownership to retain control over private investors. In other words, EEB changed from a municipally owned firm to a public limited firm.

The electricity market is based on a price system. Firms submit bids to the system operator (Centro Nacional de Despacho – CND), which uses a merit system to dispatch electricity. There were also capacity payments that stimulated investment in the generation segment. These mechanisms are operated by the CND and mainly benefit thermo-electric plants. The Colombian electricity system is essentially structured by a huge hydroelectricity sector (70%) and is seen as one of the most open markets in the developing world (Arango et al. 2006; Larsen et al. 2004).

4.3.6. Electricity Market Model in California

California was one of the first US states to carry out important reforms in its electricity system. Consequently, it offers a good picture of such reforms in the American economy. In 1996, the state legislature approved the implementation of an electricity model that allowed retail competition, the creation of a wholesale market with an hourly spot market and a transmission-system operator. According to Woo (2001), the Californian model has four main characteristics: 1) a wholesale electricity market where buyers and sellers make supply and demand bids; 2) an independent system operator (ISO) that structures the wholesale market operations – the ISO carries out such activities by operating the high-voltage transmission owned by the T (transmission) and D (distribution) firms; 3) the T&D firms are regulated by the application of the rate-of-return system. These companies have to provide unrestricted access to all users; and 4) the retail market has to allow its customers to choose any electricity supplier.

In this way, the Assembly Bill 1890 (AB 1890) is the key state law⁹⁵ that provided the legal framework for introducing competition in California. For instance, the AB 1890 called for the creation of two organisations: the California Power Exchange (PX)⁹⁶ and the California Independent System Operator (ISO). According to Rotwell and Gómez (2003), the California PX was a non-profit organisation that had the objective of developing a wholesale spot market. Rotwell and Gómez state that the PX had three main characteristics: 1) it openly allowed suppliers and buyers to participate in the market; 2) the PX defined the electricity price for the day-ahead market and the hour-

⁹⁵ At federal level, there was other important legislation and regulations that provided the basis for electricity competition. In fact, regional-state legislation emerged from such national laws.

⁹⁶ In 2001, the PX closed its operations due to the electricity crisis.

ahead/day-of⁹⁷ markets – it used information on the bids submitted by PX players; and 3) the three key Investor-Owned Utilities (IOUs) had to buy electricity from the PX. Moreover, these companies had to sell their generation under the PX system.

The three main IOUs in California are the Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE) and the San Diego and Electric Company (SDG&E). These companies supply 75% of the total load in California, whereas the remaining 25% is supplied by more than 40 small utilities (investor-owned and government-owned).

In the day-ahead and day-of wholesale markets, players were allowed to submit their bids for buying electricity hour-by-hour and to submit bids for selling electricity hour-by-hour. Sellers and buyers obtained a market-clearing price, which was defined by using the demand and supply curves from the bids. This price was determined for each hour (Sweeney 2002). The second organisation created under the AB 1890 was the California Independent System Operator. The objective of this institution is to organise the day-ahead and the day-of schedules, to control the generation dispatch and to balance load and generation (Rotwell and Gómez 2003).

4.4. THE MEXICAN ELECTRICITY INDUSTRY'S PRIVATISATION PROPOSALS

4.4.1. Ley del Servicio Público de Energía Eléctrica – Electricity Act

President Carlos Salinas de Gortari (1988–1994) from the Institutional Revolutionary Party – Partido de la Revolución Institucional (PRI) – started to set up the bases of the Mexican electricity industry's (MEI) reform. In 1992, Salinas allowed the participation of private investors by modifying the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act or IPP Law. On 23rd December 1992, the changes in the LSPEE were published in the Diario Oficial de la Federación – Official Gazette of the Federation⁹⁸.

In 1975, this law was created as a complementary element to the Mexican Constitution. Initially, its objective was to confirm that the MEI was officially a public industry. In particular, it considered the Comisión Federal de Electricidad (CFE) – Federal Electricity Commission – and Luz y Fuerza del Centro (LyFC) – Central Light and Power Company – the two state-owned electric utilities as the only electricity suppliers in Mexico (Carreón-Rodríguez et al. 2003). However, after its amendment it

⁹⁷ In 1999, the hour-ahead market was changed to a day-of market to accommodate market players.

⁹⁸ See Diario Oficial de la Federación: <http://dof.gob.mx/index.php?year=1992&month=12&day=23>

established that individuals could generate electricity. The LSPEE, or the Independent Power Producers (IPPs), law enabled private investors to undertake independent power generation as well as participate in the natural gas sector. Specifically, it authorised private sector participation in determined sub-areas of the industry such as cogeneration, self-generation, independent production and import-export of electricity (Núñez-Luna 2005).

According to the Mexican Constitution, energy is a strategic sector for the economy and therefore grants the nation exclusive control over it. In other words, articles 25, 27 and 28 state that generation, transmission and distribution of electricity are the state's responsibility. The Constitution does not consider these activities to be monopolistic structures. Although the LSPEE's changes allowed private sector participation in the MEI, the decree still considers the constitutional principles (Campos 2003). Consequently, private investment did not flow as expected due to the law's restrictions. The restrictions are: a) CFE is the only electricity purchaser; b) CFE cannot buy more than 20 MW if the sale is outside the bidding; and c) tariffs are only controlled by the government.

The LSPEE states that independent power production is the process by which electricity is generated by a power plant that is financed, built and owned by a private operator. Each power plant has to be designed to generate electricity above 30 MW, which can only be sold to the country's public utility, the Federal Electricity Commission (CFE). CFE grants IPP contracts by carrying out a bidding process that requires investors to submit their lowest generation prices. The utility also uses other kinds of information in that process such as installed capacity, type of generator and the company's technological needs.

This administrative and technical mechanism (IPP contract) has to be approved by the Ministry of Energy and included as part of CFE's investment programmes. The Programa de Obra e Inversiones del Sector Eléctrico (POISE) – the Electricity Sector's Investment Programme – is one of the key documents that is used to plan the sector's investment projects. Once private investors obtain the government's approval, their assets are subject to national laws and protected against determined threats (e.g. expropriation).

According to Breceda (2000), independent producers have to participate in the MEI under three main financial schemes: 1) Build-Lease-Transfer (BLT); 2) Independent

Power Producers; and 3) Public Funding. The BLT scheme states that the design, financing and commissioning of the electricity plant has to be carried out by the interested private investors. Contracts will be granted by CFE through a bidding process, and when the project starts its operations, it is leased to CFE for 25 years. During this period, CFE is responsible of the operation of the plant and its maintenance services. The complete project is financed by private resources.

The Independent Power Producer scheme considers that if a private investor is willing to participate in the MEI, he has to be responsible for constructing, financing and operating the plant. The contract is granted through a bidding process and the new plant has to sell its electricity to CFE at a price considered in the long-term power purchase agreements. The plant is owned by the private company and it is financed through the PIDIREGAS scheme. The third financing scheme is Public Funding, which states that the project developer has to fund the building of the electricity plant and the other necessary investments. Once the plant is ready to start its operations, CFE has to liquidate or pay the total cost of the project. CFE uses the PIDIREGAS scheme to finance it.

Article 18 of the Public Debt Law⁹⁹ considers that Proyectos de Impacto Diferido en el Registro del Gasto (PIDIREGAS) – Deferred Impact Status Projects – can be defined as “obligations derived from funding of long-term productive infrastructure projects related to priority activities and, as a result of which the relevant federal public entities acquire goods or services in any form which generate sufficient cash flow to re-pay such obligations shall, with the prior approval of the Ministry of Finance under the terms of Article 30 of the Federal Public Budgetary, Accounting and Expenditures Law (now Article 32 of the Budget Law)¹⁰⁰ only be counted for purposes of this law, as direct liabilities to be paid during the current or the next fiscal year. Any remaining amounts shall be considered contingent liabilities, until the funding has been fully paid to the extent such amounts are available” (Article 18 of Public Debt Law in White & Case 2009, p. 2). In other words, PIDIREGAS is an instrument that is used to attract private investors by offering them attractive long-term projects, which are protected against budgetary cuts or economic shocks.

⁹⁹ See Diario Oficial de la Federación: <http://dof.gob.mx/index.php?year=1995&month=12&day=21>

¹⁰⁰ See Diario Oficial de la Federación: <http://dof.gob.mx/index.php?year=2006&month=03&day=30>

4.4.2. First Electricity Privatisation Proposal

In 1999, President Ernesto Zedillo (1994–2000) proposed the first privatisation project. As stated in the previous section, the Mexican Constitution grants the nation exclusive control over the energy sector. More specifically, constitutional article 27 indicates that the state is the only institution that has the absolute power to control “strategic sectors” such as the oil and electricity industries. In other words, the Mexican state has the exclusive rights over electricity generation, transmission and distribution. Article 28 specifies that monopolies and monopolistic behaviour are not allowed in the economy. However, this law states that there are some sectors that are not considered monopolies such as the electricity industry. So, in order to allow private investors to freely participate in the MEI, Zedillo proposed that Congress modify these articles¹⁰¹.

In terms of the project’s technical aspects, Zedillo proposed the participation of private investors in electricity generation, transmission and distribution. Nuclear power generation and a specific proportion of hydroelectric power generation were maintained under public control in this proposal. The transmission and distribution areas were going to be under regulation because of their monopolistic structure. Electricity generation and retail sectors were supposed to be open to competition. In particular, and according to the Proposal of Structural Change in Mexico’s Electricity Industry prepared by the Ministry of Energy (SENER 1999), the reform process was divided into three main phases.

In the first phase, the country’s two public utilities, Comisión Federal de Electricidad (CFE) and Luz y Fuerza del Centro (LyFC), are divided into different generator, transmission and distribution companies with independent managerial structures. In this stage, the system operator is created and controlled by the government. Moreover, the application of a regulatory framework is carried out. The second phase consisted of the implementation of the wholesale electricity market and the system operator. Private and public generators compete with each other to obtain contracts from distribution firms and large customers. In the last phase, the public companies created at the beginning of the process are privatised.

¹⁰¹ For a detailed description of articles 27 and 28, see <http://info4.juridicas.unam.mx/ijure/fed/9/28.htm> and <http://info4.juridicas.unam.mx/juslab/leylab/250/29.htm> respectively.

4.4.2.1. The Centro de Operación del Sistema Nacional (COSEN) – The National System Operator

As part of the privatisation project, COSEN was proposed as the system operator in the new electricity market. It is an independent organisation responsible for operating the national transmission grid and the wholesale electricity market. SENER (1999) states that COSEN has the objective of guaranteeing adequate operation of the system, balancing the electricity demand and supply, dispatching at a minimum cost, coordinating the maintenance programmes in generation and transmission and carrying out emergency procedures.

On the other hand, the responsibility of COSEN as a market operator is to control the system's financial flow. In particular, its objective is to administrate the wholesale market and to determine the electricity price according to the market operation rules, to charge generators and distribution companies the transmission price, to pay the Red Eléctrica Nacional (REN) the transmission price and to contract risk management mechanisms in the financial system in order to prevent possible price increases in the electricity market.

COSEN's administrative structure is based mainly on an executive board. This board is coordinated by nine members appointed by the Ministry of Energy. Each member is a representative of a specific sector. Generators, qualified users, distribution and transmission companies each have a delegate representing the interests of their sector. The remaining five members do not represent anybody. The president is appointed by the Minister of Energy, whereas the executive director is elected by the board. COSEN and REN are independently managed to avoid any conflict of interest.

4.4.2.2. The Wholesale Electricity Market

In Zedillo's electricity project, the wholesale electricity spot market is controlled by COSEN; its objective is to dispatch at a minimum cost. Other key responsibilities of COSEN are: 1) to initially develop the market's operating rules; 2) to obtain information from generators about their electricity capacity and the price at which they are willing to supply electricity; 3) to determine the electricity demand from distributors and qualified users; 4) to use previous information to inform generators at what level they have to balance their electricity supply with respect to demand at the lowest possible cost; 5) to provide sufficient mechanisms to lead buyers to continue paying for the electricity they demand. Similarly, COSEN has the objective to offer instruments that lead sellers to continue charging for the electricity they supply to the system.

Generators have to indicate their power availability and the minimum price at which they are willing to supply electricity. These companies have to notify COSEN one day in advance, who then selects the lowest bids. The chosen bids have to satisfy the total demand at a minimum cost. The price that generators receive will be the bid of the last generator dispatched in each hour. All generators will have this price and all buyers will have to pay it. In case electricity generators' variable costs are below that price, they will get compensation to cover part of their fixed costs. The price will be determined for each hour, and if electricity demand is low, prices will also be low, because only efficient generators will be allowed to operate. Conversely, if electricity demand is high, prices will also be high.

Electricity transmission congestion or transmission restrictions lead high-cost generators to supply electricity in some areas, whereas low-cost generators will be unable to supply electricity in other areas. In this case, it is difficult to provide electricity where it is demanded at low cost. Under these circumstances, the marginal cost of electricity will be different in some areas of the country. As a result, prices (regional prices) will also be different, which means that in certain regions, prices will be higher than in other places.

According to the privatisation proposal, these regional prices will be based on low-cost generators from each region and they will include the cost generated by the transmission restrictions. The proposal states that regional prices will trigger the development of new generation capacity and transmission networks. Moreover, this mechanism will force consumers to reduce their demand in areas where electricity is limited.

In addition to the use of regional prices to expand the generation and transmission operations, the reform considered a K factor to develop the system's generation capacity. The K factor is an economic incentive that is annually provided to all generators with available capacity. It is paid by distribution companies and consumers. In the same way, the government considered buying a contingency plan (in the financial markets) in case electricity prices are affected by external variables such as environmental phenomena that can significantly increase prices.

Bilateral contracts are other elements included in the wholesale market system. The government states that since electricity prices tend to fluctuate in determined periods of the year and at specific hours of the day, bilateral contracts can be used to decrease

the effects of such price volatility. Generators and electricity buyers (distributions firms, qualified users and retailers) will be allowed to negotiate prices freely under long-term contracts. These agreements can take the form of a financial contract or a contract for difference. A contract for difference is an agreement to pay the difference between the negotiated price in the contract and the price defined in the wholesale market.

4.4.2.3. Regulatory Framework

In terms of the new electricity market's regulatory structure, the privatisation proposal states that the development and application of regulatory measures will be carried out by the Comisión Reguladora de Energía (CRE) – Energy Regulatory Commission. The main objectives of this organisation are: 1) to attract enough private capital to the industry; 2) to supervise the application of the regulatory policies by using financial and operative information from regulated companies; 3) to grant concessions and permission; 4) to set up the basis of the tariff regulation and to establish quality controls for the transmission and distribution services; 4) to approve the transmission and distribution companies' investment plans; 5) to provide the mechanisms to solve controversies between the different players in the industry; and 6) to penalise companies when they do not respect the regulations.

Under the electricity project, CRE is responsible for granting permission, concessions and organising the transmission and distribution tariffs. Electricity generation and commercialisation will not be regulated, but they will require special permissions from CRE. Permission for electricity generation will be granted for 30 years, whereas permission for electricity commercialisation will be granted for five years. Both kinds of agreement can be renewed. Transmission and distribution companies will be regulated and they will be required to obtain concessions to use the infrastructure. Transmission and distribution operations will be subject to a maximum tariff scheme and they will be reviewed every five years. These tariffs will be individually calculated for each company according to their costs, efficiency levels, investment and maintenance programmes.

The company that holds the concession to control the Red Eléctrica Nacional (REN) – National Electricity Grid – will be responsible for expanding the national transmission network. This operation will be carried out under specific conditions. For instance, REN will propose transmission expansion projects to COSEN, which will analyse them and identify the most important proposals. The Ministry of Energy and CRE will be involved in this process. The privatisation project indicates that other parties will also be able to carry out transmission expansion projects if they are not interconnected to the national

transmission network. These projects' concessionaires will be able to directly operate the transmission networks for 30 years, and can be renewed.

4.4.3. Second Electricity Privatisation Proposal

In 2002, the second electricity privatisation project called Propuesta de Modernización del Sector Eléctrico – Electricity Sector Modernisation Proposal – was presented by President Vicente Fox (2000–2006). It is important to highlight that Fox's proposal is not very clear and lacks a detailed technical structure, but it is similar to Zedillo's electricity project. The proposal mainly focuses its attention on reforming constitutional articles 27 and 28. The proposal recommends changing the definition related to “the electricity consumption of large consumers” from the electricity industry's legal framework.

In other words, by modifying it, private generators and private consumers (with a demand of more than 2,500 MW/hour) will be able to sell and buy electricity respectively. So the government will not be the only supplier. Moreover, private electricity generation is allowed in cogeneration, independent production, small-scale production and electricity exports and imports, which means that the terms and conditions of the LSPEE or IPP law are originally maintained. More specifically, under this proposal there are two types of electricity generation structure: public and private generators. Public generators will be privatised after they reach adequate efficiency levels.

Public generators are the power stations operated by the two state-owned electricity utilities, Comisión Federal de Electricidad (CFE) and Luz y Fuerza del Centro (LyFC). Private generators (IPPs) that supply electricity under the public service scheme are also considered in this group. These producers operate under the Ley del Servicio Público de Energía Eléctrica (LSPEE) – IPP Law, which was modified in 1993 (see Section 4.4.1). On the other hand, the private generation structure consists of investors who are willing to participate in the Mexican electricity industry. These players can join the market by signing long-term contracts.

Conversely, Fox's proposal indicates that transmission and distribution operations will be under public control because they are natural monopolies, but private users can have access to these networks. The transmission system is called Red Nacional de Transmisión (RNT) – National Transmission Grid. The proposal indicates that private users can incorporate their transmission networks into the system. This means that

private electricity transmission lines can be part of RNT. If the transmission system needs to be expanded, the government can also incorporate these private investments.

Another characteristic of Fox's proposal is the creation of the Centro Nacional de Control de Energía (CENACE) – National Energy Control Centre – whose objective is to economically control the operation of generators connected in the national transmission network. According to the project, this organisation has an administrative structure of five members: the Minister of Energy, a representative of state generators, a representative of private generators, the Procuraduría Federal del Consumidor (PROFECO) – Consumer Protection Federal Agency – and a representative of large customers.

CENACE has other roles in the electricity market, for instance to participate in the financial transactions between the different players, to collect the charges for the electricity sold to Specialised Traders¹⁰² and Self-Consumers¹⁰³ and transmission services, to pay generators and the utilities with transmission assets, and to maintain the stability of the system. CENACE uses a merit order of increasing costs based on the stations' operating costs (the proposal does not provide more detailed information about this).

4.5. CONCLUSIONS

This chapter presented a review of the different factors that led developed and developing countries to reform their electricity markets. The most important case in developed economies is the British experiment, which offers a model that other countries have imitated. The implementation of a new electricity market in England and Wales was mainly motivated by ideological reasons. On the other hand, we consider that in addition to the specific problems of each developing country's electricity industry, governments were encouraged by the international financial institutions (IFIs) to implement such market reforms. The International Monetary Fund (IMF) and the

¹⁰² “Specialised Traders are understood to be electricity buyers engaged in the generation dispatch and/or the agreement of bilateral contracts, either to buy electricity directly from generators or electricity imported for sale to Self-Consumers, to other Specialised Traders or for export, as well as the coordination of the transaction operations between generators, Self-Consumers and Specialised Traders” (SENER 2002, p. 19).

¹⁰³ “Self-Consumers will be considered to be those users who, due to their own specific economic and consumption needs, will have the opportunity of using alternative supply sources; i.e., to generate their own electricity as required or to obtain it from a third party based on long-term contracts” (SENER 2002, p. 18).

World Bank played a key role in promoting structural changes in economies' electricity sectors.

However, electricity reforms have generated mixed results. In particular, there is evidence that shows how these measures have failed to reach the promised benefits. This situation has led IFIs to vaguely recognise that reforms are not perfect and therefore can place economies in complex situations. Thomas (2006a) indicates that despite the reforms' failures, there are vested interests (e.g. private consultants) that will continue to promote such policies. These interest groups obtain significant economic incentives from these market mechanisms.

According to the World Bank (2004), one of the problems with electricity models is found in the countries' weak regulatory structure and is not due to distrust of privatisation itself. Consequently, this financial organisation recommends that regulation has to be strengthened and be free of political influence. Under these circumstances, there are scholars that severely question the position of the World Bank on electricity reforms. For instance, Thomas (2006a) states that there are specific factors that are not considered in the liberalised-privatisation electricity industry models. These elements are also behind the failure of such reforms.

One of the factors is that economic players strongly consider that market forces will guarantee that investment levels will continually flow in the sector. The reality is that the electricity industry is a very special case, because there are many risks involved in its operation. For example, there are currency risks, demand risks and political risks that can generate conflicts in the electricity sector. Another interesting element mentioned by Thomas is that "electricity is different from other commodities".

Electricity has the following characteristics: 1) it cannot be stored; 2) demand and supply need to match at all times; 3) it does not have substitutes; 4) it has an important role in modern society, which means that people strongly depend on it; 5) it has environmental impacts; and 6) electricity is a standard product, so a specific generator cannot produce better electricity than another. As a result, markets are controlled by prices.

We consider that the Ley del Servicio Público de Energía Eléctrica (LSPEE) or IPP Law is a very important factor in the Mexican electricity industry. Although the government has not carried out radical privatisation, the LSPEE allowed private investment participation in electricity generation. The vertical integration of the industry

is still maintained due to the restrictions stipulated in the Constitution. Two reform proposals have been presented by two different federal governments. President Ernesto Zedillo's proposal shows a better picture of the new electricity model than Vicente Fox's project. In other words, Zedillo's privatisation project directly tells us what kind of electricity market is going to be implemented.

On the other hand, President Fox's project does not provide enough detail on the electricity model's technical aspects. For instance, the project focuses on opening the generation sector to competition but it does not clearly define the role of private investors in the transmission and distribution sectors. His project states that these sectors will be under public control, but it seems that the lack of information leaves an open window for possible complete private sector participation. According to a policymaker interviewed during our 2005 fieldwork, the presidents' projects are the same electricity models but are "strategically" presented in two different ways.

CHAPTER 5: REVIEW OF MEXICO'S PRIVATISATION PROGRAMME AND THE PRIVATE SECTOR PARTICIPATION IN THE ELECTRICITY INDUSTRY

5.1. INTRODUCTION

Some analysts consider that the privatisation policy has generated benefits for the economy. For instance, more roads were built and the ports' installed capacity increased considerably. However, this chapter shows that the most important privatisations have severely affected the Mexican economy. In particular, we discuss the privatisation of a telecommunications company and the banking sector. In both cases, the government did not carry out an adequate privatisation process. The government sold the banks to people who did not have financial experience and the telecommunications company was sold as a monopoly. Moreover, political interests played an important role in the process.

The Mexican electricity industry (MEI) was also part of this neo-liberal agenda. The MEI has not been privatised, but President Carlos Salinas (1988–1994) allowed private investors to have limited participation in electricity generation (see Chapter 4). Private companies can participate in the MEI as independent power producers (IPPs). This chapter evaluates it and finds that there are serious problems that have generated high costs for the public finances. Our analysis offers evidence that indicates that the IPPs have been displacing the Federal Electricity Commission (CFE) from the electricity generation system. This chapter states that the MEI has a generation capacity that has been underused.

Moreover, we offer an analysis of two interesting cases connected to the IPP scheme. Firstly, we state that the government has been financing the IPPs with a very costly programme called *Proyectos de Impacto Diferido en el Registro del Gasto* (PIDIREGAS) – Deferred Impact Status Projects. Secondly, this chapter provides evidence that indicates how CFE irregularly awarded a very important natural gas contract to the Spanish oil company Repsol. Similarly, the banking and the telecommunications sectors and the partial participation of the private sector in the MEI has important irregularities that have generated high costs for the economy.

Before we start analysing these cases, a historical review of the key economic events in Mexico is presented. More specifically, we discuss how President Lázaro Cárdenas (1934–1940) carried out oil expropriation to trigger the country's industrial development. The nationalisation of the electricity sector, the import-substitution policy

and the creation of many state-owned enterprises (SOEs) were other mechanisms used to continue with the industrialisation process. The development of the Institutional Revolutionary Party (PRI) also occurred during this historical period. Consequently, this chapter provides a description of the key changes in this political party. We consider that this historical review gives us important elements to formulate a better understanding of the economic and political situation in Mexico. Moreover, the next chapter uses this information to complement the analysis.

Chapter 5 is divided into two main sections. Section 5.2 offers a historical review of the key economic events in Mexico. Section 5.3 analyses the key aspects of the privatisation strategy. In particular, it explores two important privatisation cases. We selected the privatisation of Teléfonos de México (Telmex), which is the country's telephone monopoly, and the banking sector. This section then evaluates the participation of the IPPs in Mexico's electricity generation system. Finally, the Pidiregas projects and the natural gas contract between CFE and Repsol are analysed.

5.2. KEY ASPECTS OF THE ECONOMIC AND POLITICAL BASES OF MEXICO

This section offers a historical review of the key economic and political elements that were determinants of the initial development in Mexico. In particular, the decisions taken during President Cárdenas' administration were extremely important for the Mexican economy. Oil expropriation was the key decision made by Cárdenas, which triggered the development of the domestic energy sector and set up the bases of the country's industrialisation process. The nationalisation of the electricity sector and the import-substitution policy were other important events that contributed to strengthen the country's industrialisation process. The development of the Institutional Revolutionary Party (PRI) represents a factor that cannot be excluded from this historical review. This organisation experienced different transformations that were important to consolidate the regime's hegemonic power. We cannot study the current situation of the energy industry without firstly understanding the key aspects from such historical phases.

5.2.1. The Cardenismo Oil Expropriation

The Cardenismo was one of the outcomes of the 1910 Revolution. It represents an important phase in Mexico's socio-economic development. This period took place during President Lázaro Cárdenas' administration and it is known as Cardenismo. Cardenismo's main economic objective was to initiate the domestic industrial sector's development. To carry out such a plan, Cárdenas' economic policy was based on a six-year programme. It included different actions; for instance, it set up the bases of the

import substitution system, and by grouping people into corporatist structures, he could transfer the labour force from the agricultural to the industrial sector. Consequently, he developed the production of consumer goods that protected the economy from external competition (Dussel-Peters and Kim 1993).

His economic programme also supported the education and agrarian sectors. He founded research institutions (e.g. Instituto Politécnico Nacional IPN – National Polytechnic Institute) that focused their attention on developing knowledge for specific industrial sectors such as textiles, mechanical engineering and oil engineering. In other words, this education system was a complementary factor for Cárdenas' industrial strategy. In addition to his land redistribution programme, the government created financial institutions for the development of the agrarian sector (Montes de Oca 1999). In particular, these organisations provided financial resources to small and medium enterprises to buy raw materials and production inputs.

A positive combination of domestic and external factors strengthened the Cárdenas administration's political power. The reorganisation of economic-political sectors and other social groups into a single political party¹⁰⁴ allowed the government to make decisions with strong support from such interest groups. In terms of the external elements, we consider that the Mexican regime understood that the US government was giving Mexico more independence in its decision-making process.

This situation is reflected in Lorenzo Meyer's¹⁰⁵ analysis in Thelen (1999, pp. 606–607): “The United States saw in Mexico a model ... a system that was not clashing with its society and for that reason could produce results, stability ... the Mexican political elite in those years received, in exchange for its efficiency in keeping the control of Mexican society, a certain amount of freedom and relative independence ... The US was not telling them who was going to be the next president, who was going to be in charge of the Bank of Mexico or what they have to do in economic terms.”

Under these circumstances, Cárdenas started to make important decisions. In particular, he focused his attention on the oil sector. This industry was seen by Cárdenas as a strategic factor to trigger the country's economic development. However, the oil industry was controlled by foreign companies, mainly from the United

¹⁰⁴ In the following section, we discuss how the Institutional Revolutionary Party (PRI) was developed.

¹⁰⁵ Lorenzo Meyer is an emeritus professor of Political History at the Centre for International Studies, El Colegio de México (COLMEX) in Mexico City.

States, the United Kingdom and the Netherlands. The Mexican government started confronting the oil companies when it cancelled some of their important investment concessions (Cronon 1960). These corporations reacted strongly against this action, because they considered that the *Calles-Morrow Agreement*¹⁰⁶ had been violated by Cárdenas. Moreover, the Mexican authorities got involved in the labour conflicts between these firms and their workers. More specifically, Cárdenas supported the workers' demands. The Sindicato de Trabajadores Petroleros de la República Mexicana (STPRM) – the Mexican oil workers' union¹⁰⁷ – demanded annual wage increases, further retroactive payments and restriction on the number of workers hired by the companies (Macmahon and Dittmar 1942). If the petitions were not accepted by the oil corporations, workers were going to go on strike.

Foreign investors accepted the increase in worker benefits (Macmahon and Dittmar 1942), but the union decided to reject the offer and therefore a strike was called for 27th May 1937. The discussions between the Mexican government and the oil investors continued without reaching any important agreement for improving their economic relations. In the following months, the stronger political power provided by the reorganisation of the Mexican Revolution Party, the Mexican government's aspiration (to strengthen the country's economy), the deteriorating economic conditions of the country and the higher independence level provided by the American government¹⁰⁸ created an adequate scenario to make an important choice.

On 8th March 1938, after having some meetings with the companies' representatives and with his cabinet, Cárdenas took the decision to expropriate the oil industry. He prepared an expropriation decree, which officially stated that all the companies' assets belonged to the country. He then sent Congress a legal initiative that reformed constitutional article 27 in order to guarantee Mexico's absolute control over all the oil

¹⁰⁶ This was an informal and implicit agreement in which President Plutarco Elías Calles (1924-1928) and the US Embassy agreed to maintain respectful and cooperative relations about the role of American economic interests in Mexico. According to Aguayo (2009), this agreement allowed Americans to have control over some economic sectors in Mexico.

¹⁰⁷ In 1934, 10,000 people (structured in 19 unions) worked for the oil industry. In 1935, the Cardenismo could group them in only one organisation, the STPRM.

¹⁰⁸ Although the American authorities gave Mexico a higher independence level, they still supported the oil corporations. The US government carried out different actions that attempted to stop Cárdenas from harassing such companies.

It is important to indicate that the American government did not provide strong support to these companies. According to Cronon (1960), an American diplomat, Benjamin Welles, on behalf of the US government told the businessmen that he was going to pay careful attention to the situation in Mexico. However, he was not willing to intervene in the conflict. Welles contacted the British Embassy in Mexico City and informed it that he was not going to put unnecessary pressure on Mexico to solve the conflict.

and gas resources. It indicated that all the activities such as the exploration, exploitation and commercialisation of hydrocarbons were controlled by the government.

Petróleos Mexicanos (PEMEX) was the state oil company that was founded to carry out such operations. During the first years, the members of the PEMEX's union (STPRM) were appointed to key posts to operate the company (Meyer 1966). Since PEMEX existed until the early 1980s, the Constitution was continuously reformed to strengthen the oil sector, which was considered to be a strategic industry for the country.

5.2.2. The Mexican Electricity Industry

Mexico's electricity industry was created under Porfirio Díaz's presidential term (1876–1911) to provide traction, lighting and a water supply to the industrial sector. In particular, he granted concessions to foreign companies to supply electricity to activities related to the manufacturing, mining and textile industries. After 1910, investors from the US, Canada and Germany became the key players in the industry. Canada was the main investor with more than 50% of the total capital, followed by the US with US\$90 million and Mexico with US\$10 million. Germany supplied equipment to the electricity companies (Bastarrachea and Aguilar 1994). As a result of the country's economic expansion and the participation of the private investors in the electricity industry, between 1911 and 1937 the installed capacity increased from 135 to 629 megawatts (MW)¹⁰⁹.

In 1937, President Lázaro Cárdenas (1934–1940) created Comisión Federal de Electricidad (CFE) – the Federal Electricity Commission. It had two main objectives: 1) to control the foreign companies' behaviour and to serve as a mediator between these and the government; and 2) to carry out rural electrification, which was considered by private investors as an unprofitable activity (Carreón-Rodríguez et al. 2003; Breceda 2000).

In the same way as in the oil industry, the regime's strategies in the Mexican electricity industry (MEI) had the objective to strengthen the domestic industrial sector. Consequently, in 1944 the nationalisation of the electricity industry started when CFE acquired some private companies. More specifically, the government acquired *Chapala* (the third largest utility) and some regional monopolies, which were restructured into a

¹⁰⁹ Ibid.

single company. In 1960, President Adolfo López Mateos (1958–1964) completed the MEI's nationalisation. He considered that the private companies were interfering with the development of the country and national sovereignty. The oil expropriation served as a reference point that led the government to make such a decision. Under these conditions, López Mateos started negotiating the acquisition of the private companies' assets.

The Mexican government acquired 95% of *Impulsora de Empresas Eléctricas*¹¹⁰ common shares and obtained a majority stake from the *Mexican Electricity Light and Power Company*, which was owned by an American group. Additionally, a new state utility was created, *Compañía de Luz y Fuerza del Centro (LyFC)*, to serve the areas that CFE did not cover such as the States of Hidalgo, Estado de México, Morelos, Puebla and Mexico City (Breceda 2000). The nationalisation was formalised in the constitutional articles 25, 27 and 28. These articles granted the nation exclusive control over the electricity industry. In particular, generation, transmission and distribution of electricity could only be carried out by the government. Moreover, these processes were not considered as monopolistic activities. Under the new legal structure, the MEI's investments grew at an annual rate of 6% from 1960 to 1970. As a result, the industry's total installed capacity increased from 2,308 to 5,517 MW (Breceda 2000).

5.2.3. The Import-Substitution Industrialisation Strategy

From the 1940s to the early 1970s, the economic growth model implemented by the political regime was mainly based on the import-substitution industrialisation strategy (ISI). President Cárdenas set up the conditions for the country's industrialisation process by changing the oil industry's organisational structure. So the next PRI governments had to define the country's economic direction and consolidate it. Mexico's regime, like other Latin American governments¹¹¹ (e.g. Argentina and Brazil), carried out the ISI strategy to protect their domestic economies from the impact of imports. Mexico's national market could be protected by implementing tariff duties on imports, by applying permits with strict conditions on imports and by prohibiting access to a large number of imported products. Moreover, direct foreign investment (DFI) was rigorously controlled. However, it was allowed in some economic activities that were not strategic sectors for the country (Moreno-Brid et al. 2009).

¹¹⁰ It was owned by Canadian investors.

¹¹¹ See Thorp (1992) for a detailed analysis of the ISI programme in Latin America.

According to Moreno-Brid et al. (2009) and Moreno-Brid and Ros (2009), some of the benefits that the government provided to the manufacturing sector were: 1) low-cost energy; 2) preferential financial support from development banks; and 3) tax exemptions on imported machinery and equipment. The ISI policy led to extraordinary results. From 1950 to 1972, gross domestic production (GDP) grew at 6% annually, and at 3% per capita. Industrial production grew at an extraordinary rate of 8% (Ramírez 1986). Similarly, the Maquiladora programme was another factor that contributed to the government's industrial objectives. Maquiladoras obtained different economic incentives, such as tax exemptions, to manufacture their products along the Mexico-US border.

As part of the development strategy, the Mexican regime created many state-owned enterprises (SOEs) to provide goods and services to the economy. The government also increased the number of SOEs by acquiring private companies with financial problems or with particular characteristics according to politicians' interests (Chong and López-De-Silanes 2004). In 1940, the country had 36 SOEs, which increased to 144 by 1954. Between 1970 and 1982, SOEs increased from 272 to 1,155 (see Table 5.1).

Table 5.1: State-owned enterprises in Mexico (1917-2003)

| Main Focus of State Activity | Period | Number of SOEs (end of period) |
|--|-----------|--------------------------------|
| Public administration and creation of the basic infrastructure | 1917–1940 | 36 |
| Import-substitution oriented investments, transportation and communications and social security institutions | 1941–1954 | 144 |
| Stable development: regional development and creation of employment | 1955–1970 | 272 |
| Planned expansion: oil bonanza and government as an industrial engine | 1971–1975 | 504 |
| Planned expansion: government investment in strategic areas | 1976–1982 | 1,155 |
| Main programme of liberalisation of the economy and divestiture of the state-owned sector | 1983–1993 | 258 |
| Consolidation of the privatisation programme | 1994–2003 | 210 |

Source: Chong and López-De-Silanes (2004)

The 1973 oil shock played a key role in the country's development. High oil prices increased oil production for the domestic and international markets. The additional oil revenues and the external debt were used to finance very ambitious infrastructure programmes and to stimulate the private sector's investment projects. For instance, 90% of total oil revenues were channelled to the construction sector (Gavin 1996). The oil shock also allowed the government to explore and exploit new oil and gas reserves, which placed the country in a good position in the international oil market. In 1978, oil reserves accounted for around 40,194 million barrels, whereas in 1972 there were just 5,388 (Ramírez 1986).

However, in the late 1970s the ISI model showed signs of weakness. According to Dussel-Peters and Kim (1993) and Ramírez (1986), there were internal and external factors that weakened the model, and therefore the performance of the economy was negatively affected. For instance, there was an important emigration flow of labour force from rural to urban areas. This phenomenon was caused by the government's

huge economic support of the industrial sector and large agricultural producers. In other words, these sectors were subsidised to strengthen the domestic market, whereas small producers and marginal rural areas were abandoned.

In terms of the external factors, in the early 1980s the collapse of the international oil market and the high US interest rates represented two key events that affected the country's economic system. The public foreign debt increased from \$8 billion in 1974 to \$60 billion in 1982. Similarly, the external public debt service reached 34% of the total value of exports (Hamilton 1984; FRB 1985). This situation led the López Portillo administration (1976–1982) to declare a moratorium in 1982. On the other hand, the decrease in international oil prices reduced oil export revenues. Oil sales represented 70% of the country's total exports. Consequently, low oil prices triggered a severe economic crisis.

According to Lustig (2001), the problem was that the Mexican regime engaged in a spending spree, assuming that high oil prices and cheap external financing were going to continue for a long period. Moreno-Brid et al. (2009) state that President López Portillo's decision to suspend the debt payments constituted the end of the government as the key player in the country's industrialisation process, and it also represented the end of the ISI strategy.

5.2.4. The Institutional Revolutionary Party (PRI)

What was the political system that implemented these key economic policies? The Institutional Revolutionary Party (PRI) constituted the main structure of Mexico's political system, which ruled the country for 71 years. This organisation was another outcome of the 1910 Revolution. In other words, the PRI was founded by the revolt's ideologists. In particular, in 1929 it was institutionalised by President Plutarco Elías Calles (1924–1928) under the name of the Partido Nacional Revolucionario (PNR) – the National Revolutionary Party. President Elías Calles considered it extremely important to create an official party of unity. The assassination of President Alvaro Obregón led to severe conflicts between the different interest groups that participated in the revolution. Consequently, a consensus was required for the new regime to survive such power disputes (Davis and Brachet-Márquez 1997).

Additionally, and according to Meyer (1999), the American government was convinced that Mexico was ready to develop its own political life. Americans considered that the new Mexican elite grouped in the PNR was strong enough to be responsible for the

country's destiny. What is more, the United States required Mexico to have a stable socio-economic system, which was one of Calles' objectives. However, Washington recognised that the PNR lacked America's democratic ideology due to the PNR's omnipotent structure. But since the PNR had social bases which were absent in the rest of the Latin American countries, it really convinced Americans of Mexico's strong political system¹¹².

Since its origins, the PRI had a supreme political structure. The President of Mexico was the only leader who controlled the PRI and therefore the country's political organisations. For instance, the entire Congress was controlled by the party's loyal members, who were appointed by the president. The majority of the congressmen were from the PRI, which means that the president did not have any real political opposition. There were small political parties, but they did not really have a strong presence in the political arena. Since then, the Mexican Congress was absolutely subordinated to the presidential power (Meyer 1977).

The PNR's structure included almost all the country's relevant forces. It grouped the *caudillos* and *caciques* (the political and military chieftains who participated in the revolution) from all regions of the country (Migdail 1987). Moreover, the PNR grouped 13 confederations of workers, 57 federations and 2,781 unions with around 350,000 members (Reyna 1976). The Catholic Church¹¹³ and the private sector¹¹⁴ did not participate in the party, but their interests were in some way represented (Newell and Rubio 1984).

In 1938, President Lázaro Cárdenas transformed the PNR into the Partido de la Revolución Mexicana (PRM) – the Mexican Revolution Party. According to Davis and Brachet-Márquez (1997), President Calles' PNR did not completely include the popular bases. Cárdenas reorganised the political system in order to give it more popular legitimacy. In addition, the party allowed him to reach agreements with the labour sector, and therefore it was used to keep workers under control¹¹⁵. As a result, the

¹¹² Ibid.

¹¹³ At that moment, the relationship between the Mexican government and the Catholic Church was not good because of the Cristero War (1926–1929). It was an armed conflict caused by the Church's disagreement about the 1917 Constitution's anticlerical laws. Although the Church did not accept such legal articles, it recognised the PNR as an organisation of common interests (Newell and Rubio 1984).

See Meyer (1976) for a detailed analysis of the Cristero War.

¹¹⁴ According to Newell and Rubio (1984), the private sector was organised in chambers of commerce and industry. However, these organisations were weak and disorganised.

¹¹⁵ Anguiano (1984) states that such measures served as a means to co-opt popular movements and to subordinate workers to the state.

PRM was divided into four important interest groups: Agrarian, Labour, Popular and Military sectors.

To control and organise such groups, certain institutions were created¹¹⁶. The Confederación Nacional Campesina (CNC) – the National Peasants' Confederation¹¹⁷ – was created to represent the agrarian sector, the Confederación de Trabajadores de México (CTM) – the Confederation of Mexican Workers¹¹⁸ – was created to represent all the workers in Mexico, and the Confederación de Organizaciones Populares (CNOP) – the National Confederation of Popular Organisations¹¹⁹ – was created to control the popular sector.

The creation of these institutions gave the president and the PRM two advantages: 1) they provided an enormous labour backing and absolute control over the country's political and economic structure (Newell and Rubio 1984); and 2) people's demands could be effectively addressed. The PRM leaders were convinced that the party's new organisation provided the country with a semi-democratic base, despite the absence of a competitive party system (Davis and Brachet-Márquez 1997).

In 1946, under the government of Manuel Avila-Camacho (1940–1946), Cárdenas' PRM became the Institutional Revolutionary Party (PRI). According to Newell and Rubio (1984), the only difference between the PRM and the PRI was that Avila-Camacho excluded the military from the party's four interest groups. This meant that the military was not considered as a key player in the decision-making process. The last reorganisation in the PRI's structure constituted the political system that ruled the country for 71 years. Under these conditions, we consider that the single-party political system had a structure based on three power levels. The first level was the most important, because it was structured by the incumbent president, former presidents, regional political leaders, wealthy individuals, labour union leaders and key members of the cabinet (e.g. the ministers of finance and defence).

The second group was integrated by other members of the Cabinet, the Congress, the judicial power, state governments, religious societies, social organisations, professional associations, labour unions, the press and other political groups (opposition parties

¹¹⁶ These organisations still have a relevant role in the party's structure.

¹¹⁷ It was founded in 1938.

¹¹⁸ It was established in 1936.

¹¹⁹ It was established in 1942, after Cárdenas' Presidential term.

such as the PAN¹²⁰, which did not represent a real obstacle for the PRI). The final group was structured by the national bureaucracy, the armed forces and the PRI's popular bases. These three groups were totally controlled by the president, who was the main decision-maker in the country.

5.2.5. Conclusions

When the 1910 Revolution finished, the newly formed political regime's aspiration was to develop the country's industrial sector. The oil expropriation allowed the government to reach this objective. Similarly, the creation of the Federal Electricity Commission (CFE) and the acquisition of the private electric utilities were also part of the government's economic strategy. Mexico needed to increase its electrification levels for the new industrial sector and residential users. The only way to achieve this was by changing the electricity sector's structure from private to public ownership.

Contrary to the oil industry, nationalisation of the electricity sector was carried out gradually. The nationalisation process concluded after three presidential periods. In other words, it was completed during President López Mateos' administration, which means it did not constitute an urgent issue for the government. Moreover, the oil expropriation had a higher impact on society than the nationalisation of the electricity industry. This situation was reflected in the way people reacted to Cárdenas' decision. For instance, people offered their economic support to pay the foreign oil companies compensation.

In both cases, the government sent to Congress constitutional articles that legally protected the energy sector from private sector participation. In addition, these articles delineated the strategic role of these industries in the economy and how the government had the exclusive rights to exploit and control all the energy resources in the country. Once the energy sector was under public control, other economic measures were implemented. The import-substitution policy served as an instrument to protect the economy and strengthen the manufacturing sector.

As part of this policy, the SOEs played a key role in satisfying domestic demand. These SOEs were benefited by the low-cost energy provided by the state oil and electricity companies. In terms of the political dynamics, it is important to highlight that the

¹²⁰ In 1939, the PAN was founded by Manuel Gómez Morín and groups of middle and upper classes: intellectuals, university students, owners and managers of large enterprises and the PRM's Catholic members (Mabry 1973).

Mexican Congress was dominated absolutely by the PRI when these economic events occurred. In other words, all the economic initiatives presented by the president were strongly supported by deputies and senators. Another important historical event was the development of the PRI's structure. The PRI was established to group most of the country's interest groups into one political institution. For these reasons, the PRI was seen as a very powerful but antidemocratic political party. The PRI's last reorganisation carried out by President Avila-Camacho could be maintained when Mexico's economic model was changed from protectionism to neo-liberalism.

5.3. THE NEO-LIBERAL ADJUSTMENT POLICIES

In the previous section, we stated that at the end of the 1970s the economic policies that initially had the objective to strengthen the economy started to lose their effectiveness. The international oil market crisis was an element that contributed to weaken the economic system. Under these conditions, the Mexican government drastically changed its economic model. The privatisation of the SOEs was one of the neo-liberal measures carried out by the government.

This section offers a general review of the privatisation strategy in Mexico. It also presents two case studies that show how the privatisation process was instrumented. More specifically, we selected the case of Telmex (the country's telecommunications monopoly) and the banking sector. We chose these two different sectors because they have been the most important privatisations under the neo-liberal adjustment agenda. Moreover, their costly results offer a perspective of how badly the privatisations have been implemented in Mexico. Institutions such as the Organisation for Economic Co-operation and Development (OECD) and the Auditoría Superior de la Federación (ASF) – the Federal Audit Office – have documented the negative effects of these privatisations on the economy.

The electricity sector was also part of Mexico's neo-liberal agenda. However, this sector was not completely opened to private investors. Private companies can only participate in the Mexican electricity industry (MEI) under the IPP scheme. This section provides an interesting evaluation of the partial participation of the private sector in electricity generation. Moreover, we analyse two key problems that are strongly connected with the IPP programme and that have negatively affected the country's public finances. Firstly, we discuss how the independent power producers (IPPs) represent a very costly alternative for the country. Secondly, we question the conditions

in which the Federal Electricity Commission (CFE) granted a natural gas contract to a private company.

5.3.1. A General Perspective of the Privatisation Process

President Miguel De la Madrid (1982–1988) started the application of drastic neo-liberal policies. His economic measures focused mainly on liberalising the financial market, privatising SOEs, reducing public sector participation in the economy and market deregulation. Moreover, the government reduced considerably the different tariffs and other restrictions on imports¹²¹. In 1986, Mexico joined the General Agreement on Tariffs and Trade (GATT), now the World Trade Organization (WTO). As a new GATT member, Mexico agreed to significantly improve the bilateral trade relations with the US.

Mexico's privatisation agenda is important because it has been one of the largest in terms of scale and scope (Chong and López-de-Sidales 2004). It occupied the fourth place in the world after England, Germany and Japan (Schwartz and Silva 1993). Between 1982 and 2003, Mexican SOEs significantly decreased from 1,155 to 210. The policy included the sale of companies related to 13 productive activities such as bottled drinks, textiles, cement, automobiles, pharmaceuticals and secondary petrochemicals (Chong and López-de-Sidales 2004).

Chong and López-de-Sidales (2004) state that there were two key periods in Mexico's privatisation process. The first period occurred during the De la Madrid administration, which consisted of restructuring the public sector and improving its efficiency. The restructuring programme had specific mechanisms for detaching SOEs from the government such as liquidation, termination, integration and transfer (Hoshino 1996). The second period occurred during President Carlos Salinas' government (1988–1994). We consider that Salinas' administration was the most important period, because he accelerated and deepened the country's privatisation process and other neo-liberal policies. For instance, the implementation of the North America Free Trade Agreement (NAFTA) increased the economic liberalisation level in Mexico. This agreement practically eliminated all tariffs and other restrictions to intra-regional trade.

The privatisation policy under Salinas' regime focused mainly on the sale of large-scale SOEs. More specifically, he sold companies from different economic sectors such as

¹²¹ Ibid.

the airline industry, iron and steel, mining, fertilisers, telephone services and sugar refining. The energy sector was not considered in his privatisation strategy. The revenues obtained from the sale of SOEs accounted for around US\$18 billion¹²².

Table 5.2: Some key privatised large-scale companies and their buyers

| SOEs | Sector | Acquiring Entities |
|---|---|---|
| 1. Teléfonos de México (TELMEX) | Telephone operations | Grupo Carso (1990)* |
| 2. Red Nacional de Televisión (TV Azteca); Televisión de Chihuahua; Compañía Operadora de Teatros; Estadios América | TV broadcasting, movie theatres and studies | Grupo Radio Televisora del Centro (1993)* |
| 3. Siderúrgica Lázaro Cárdenas | Iron and steel production | Grupo Villacero (1991)* |
| 4. Fertilizantes Mexicanos | Fertiliser production | Industrias Peñoles (1992)* |
| 5. Ingenios (Calipam, Plan de San Luis, San Cristóbal) | Sugar refining | Consorcio Industrial Escorpión (1992)* |

*Date of the privatisation

Source: Hoshino (1996)

Table 5.2 shows some of the large-scale SOEs that were privatised and their buyers. It indicates that TELMEX was acquired by Grupo Carso. Grupo Radio Televisora del Centro acquired the government's national television company, which after its privatisation became TV Azteca. This company together with Televisa constitute Mexico's television duopoly. In the case of the sugar refining companies (Ingenios), most of them were sold to different bottling corporations such as the Pepsi-Cola Company. There were other foreign companies that acquired SOEs. For instance, Bombardier (Canada) acquired Constructora Nacional de Carros de Ferrocarril (railway car manufacturing industry), two Japanese companies, Kyowa Hakko Kogyo Co. and Sumitomo Corp., acquired Fermentaciones Mexicanos (chemical industry), and Unilever (UK and Netherlands) acquired some food processing plants that were owned by Compañía Nacional de Subsistencias Populares (CONASUPO) – the National Company of Popular Subsistence¹²³.

¹²² Ibid.

¹²³ Ibid.

Some scholars consider that Mexico has obtained important benefits from its privatisation policy. For instance, La Porta and López-De-Silanes (1999) determined the benefits of privatisation in the Mexican economy. They used data on 233 non-financial SOEs that were privatised from 1983 to 1991. In particular, La Porta and López-De-Silanes employed financial statements, privatisation contracts, information from the 1994 Economic Census and questionnaires. Their key results indicate that the privatised companies' profitability levels did not increase at the expense of society. In other words, the authors state that the modest post-privatisation price increases had a minimum effect on the companies' profitability levels. The analysis considers that the economic transfers from laid-off workers constituted an important factor for increasing privatised companies' profitability. These labour force reductions were motivated by the excess of workers in SOEs. However, La Porta and López-De-Silanes state that the social cost caused by these layoffs was compensated by the significant amount of revenue that the government received from the sale of SOEs.

Chong and López-De-Silanes (2004) did similar research into the positive impacts of privatisation on the Mexican economy, but the period of analysis is extended. They state that SOEs' profitability increased 24 percentage points after these companies were privatised. These profitability levels are similar to those reached by private firms. The post-privatisation price increases contributed 5% to the companies' profitability, whereas transfers from laid-off workers contributed 31%. The analysis also indicates that the privatisations allowed the government to reduce subsidies and obtain more revenue by increased tax collection.

Chong and López-De-Silanes state that the privatised SOEs were able to supply their goods and services to a greater number of people. Moreover, these companies had a higher impact on the economy. For instance, under the toll road concession programme, roads increased from 4,500 km in 1989 to 9,900 km in 1994. In the case of the ports, the new operators developed the installed capacity from 59 million tons in 1993 to 94 million tons in 1998 and the capacity utilisation increased from 41 to 59% during the same period (World Bank 2003; Rogozinski and Tovar 1998).

The research finds that the application of restructuring programmes before the sale of SOEs constitutes a counterproductive measure for the selling price. It indicates that these programmes remarkably extended the privatisation process. As a result, prices decreased 2% for each month of delay. Finally, the authors recommend using the Mexican privatisation case as a model for other countries. They state that the

significant profitability levels obtained by the privatised SOEs have generated important benefits for the government and consumers.

5.3.1.1. The Telecommunications Industry: The Privatisation of Teléfonos de México (TELMEX)

Telmex was initially a private firm owned by the ITT Corporation and Ericsson. In 1972, the Mexican government decided to acquire most of the company's assets and debts¹²⁴. In 1989, President Carlos Salinas (1988–1994) started Telmex's privatisation process, which concluded in 1990 when the company was finally sold. Although Telmex's efficiency levels were low, the company did not have any financial problems. Consequently, there was no precise technical reason behind its privatisation (Galal et al. 1992). Salinas' decision to change Telmex's structure from public to private ownership sent a key message to the international market that his government was in line with the policies of the Washington Consensus¹²⁵.

The government carried out a restructuring programme before the privatisation in order to strengthen the company's economic and financial system. For instance, local calls increased from 16 to 116 pesos per minute¹²⁶. Moreover, the government implemented an indirect tax that was used to pay the company's debts¹²⁷. Noll (2007) states that the government had three main arguments to defend the sale of Telmex without modifying its monopolistic structure. First, President Salinas announced that the national investors were going to be the key players in the privatisation process. Therefore, Telmex was going to be maintained as a Mexican company. Second, by keeping Telmex as a monopoly, the "universal service objective" was going to be easily reached. In other words, the company would be able to supply its services to low-income sectors and rural areas where telephone lines were not installed because of the difficult geographical conditions. Third, by transforming Telmex into a private monopoly, more technology was going to be used to solve key problems such as faults in the communication networks.

Some of the consultants hired by President Salinas were not entirely convinced that selling Telmex as the only company in the market was the best option. These advisors suggested that the government split Telmex into other new companies under a

¹²⁴ See Hyman et al. (1987) for a detailed historical analysis of Telmex.

¹²⁵ Ibid.

¹²⁶ Ibid.

¹²⁷ Ibid.

competitive environment. The World Bank also preferred a competitive industry instead of a market dominated by a monopoly (Galal et al. 1992). However, this financial institution decided to strongly support the government's privatisation project. On 20th December 1990, Telmex was sold mainly to Grupo Carso, owned by Carlos Slim, under a sealed-bid auction. Southwestern Bell Corporation and France Cable et Radio were also part of this business operation. However, these foreign companies were subject to limited participation.

Bazdersch and Elizondo (1993) state that the privatisation of Telmex led to positive results. For instance, the company's productivity remarkably increased, the government obtained important fiscal gains, employment hardly declined and the investment levels were improved. However, we consider that the way Telmex was privatised severely affected the Mexican economy. One of the main problems is that Telmex was sold as a private monopoly. Contrary to the arguments offered by the government, monopolies tend to have low investment levels and sell their products at higher prices than competitive companies. Consequently, Telmex has been taking advantage of such monopolistic conditions to obtain considerable excess profits since it was privatised (Noll 2007). Moreover, there is evidence that Telmex has not adequately improved its services as they promised during the privatisation process.

Noll provides an interesting analysis of the development of Telmex's services in the last years. His study compares certain indicators of twelve developing countries such as Argentina, Brazil, Chile, Colombia and Venezuela. In 2005, Mexico was located in the middle of this group in terms of Internet usage. With respect to Internet access, Mexico has the lowest wireless penetration level (45 out of 100). The country also has the lowest penetration level (63) in fixed telephone lines and wireless connection. Argentina has a penetration level of 79, Brazil has a level of 69 and Chile has a level of 88. These indicators measure the telephone penetration levels per 100 households (reference point).

As we can see, the development of the telephone services in Mexico provided mainly by Telmex has been significantly poor compared to other Latin American economies. Noll (2007) states that the reason behind this underdevelopment in the telecommunications infrastructure was the creation of an unregulated monopoly. Another problem of Telmex's privatisation process was that the government did not establish an adequate regulatory framework before the sale of this company. The regulator was created six years after Carlos Slim acquired Telmex (in 1996). President

Zedillo established the regulatory agency , calling it Comisión Federal de Telecomunicaciones (COFETEL) – the Federal Telecommunications Commission.

Since its formation, COFETEL has been strongly coordinated by the Ministry of Communications and Transportation. This means that COFETEL lacks real autonomy and consequently is subject to political decisions that can influence the regulatory process. In 2009, the Bank of Mexico's governor declared that Telmex represents a factor that blocks competition in the telecommunications industry. He also indicated that Telmex is considered to be a company that offers its services at very high prices in the world. Such prices represent an obstacle for the country's economic growth (All Business 2006).

Noll (2007) states that the real reasons behind Telmex's strong monopolistic power are related to political interests. He considers that Telmex became a private monopoly because President Salinas' objective was to favour the political regime. Firstly, by selling Telmex to a national investor, Salinas was able to attract financial support to his political party's electoral campaigns (Institutional Revolutionary Party – PRI). In other words, the owner of the company became a sponsor of the PRI's economic and political plans. Secondly, by privatising Telmex without modifying its monopolistic structure, the company's union was benefited. This means that the Telmex union's labour force and political influence could be maintained. This union has been considered as a strong supporter of PRI governments. Therefore, it was important to keep the union's status quo (SQ) without any change. Finally, the sale of Telmex to a Mexican investor represented a way to support the feeling of nationalism in different socio-economic sectors.

President Salinas' privatisation strategy gave Telmex strong political power. Telmex's new owner (Carlos Slim) not only acquired an industrial monopoly, but also obtained an international reputation and extensive political power (Murillo 2004). This power has allowed the company to impose its conditions on the political system. During the administrations of Zedillo (1994–2000), Vicente Fox (2000–2006) and Felipe Calderón (2006–2012), Telmex has maintained its SQ. For instance, this company continues to carrying out its price gouging practices and delays or blocks competitors from accessing its network (Noll 2007). Moreover, it has not cut its prices even though technology has considerably reduced the company's costs (OECD 2009).

Noll indicates that COFETEL and the judicial authorities are captured. He points out that since its creation, this regulatory agency has ignored Telmex's anticompetitive behaviour. Moreover, the courts have been playing an important role in protecting Telmex from the accusations about its monopolistic practices. Del Villar (2009) found evidence that shows how this company has obtained important injunctions that delayed for many years the judicial processes against it.

5.3.1.2. The Privatisation of the Banking System

The banking sector represents another important and controversial case in Mexico's privatisation agenda. On 1st September 1982, President José López Portillo (1976–1982) announced the nationalisation of private banks. The official reason that led the government to carry out this action was that for years, private banks had obtained an impressive amount of profit by using their monopolistic power against customers (McQuerry 1999). There are other scholars such as Haber (2005) who consider that this argument was used to distract people's attention from the fiscal deficit, which could not be controlled by the government.

Haber indicates that there was a fiscal crisis that was caused by the government's poor taxation system. The Mexican authorities were expending more than they could obtain through that system. Consequently, the government used the banking sector's services (including foreign banks) to finance its operations (e.g. in SOEs). In 1982, this situation worsened because the country started experiencing hyperinflation. These adverse scenarios led the government to stop paying its foreign debt, and dollar denominated bank accounts were changed to pesos. Moreover, President López Portillo accused banks of the exchange rate collapse¹²⁸.

To maintain banks under public ownership, the López Portillo administration established a legal framework for the banking system. In particular, the government modified constitutional articles 28 and 123. These amendments to the Constitution indicated that the Mexican state was the only institution that could offer financial services to the public. Moreover, these articles considered the banking system as a mechanism for promoting economic development (De Buen 2000). In this way, the government acquired 58 out of 60 banks by compensating private investors with 10-year indemnification bonds. Only two banks were not nationalised, Banco Obrero (owned by a union) and a regional branch of Citibank (Welch and Gruben 1993).

¹²⁸ Ibid.

However, the situation changed when President Miguel De la Madrid took office (1982–1988). Contrary to López Portillo, the De la Madrid administration did not completely support the idea of state-owned banks. In addition, domestic and international capital markets strongly disagreed with the nationalisation. Since De la Madrid required the support of private investors to stabilise the economy, he started to liberalise the financial sector. According to Unal and Navarro (2005), the government modified three main structural elements of the banking sector. Firstly, banks were restructured and consolidated. For instance, these institutions were reduced from 49 in 1983 to 18 in 1986. Secondly, the banks' legal structure changed from corporations to credit associations. Their shares were converted to Certificados de Aportación Patrimonial (CAPs) – Capital Stock Certificates (class “A” shares) – and 34% of these certificates were sold to private investors. Finally, non-financial subsidiaries from the state-owned banks were divested and sold to the former bank owners.

President Carlos Salinas (1988–1994) continued with the banks' liberalisation process. At this stage, and after the restructuring programme, the banking system represented a very profitable activity for the government (Barry et al. 1994). However, Salinas was firmly convinced of the market reforms' benefits. Consequently, his privatisation strategy required the modification of the legal framework established by President López Portillo. On 2nd May 1990, Salinas' administration submitted a constitutional amendment to Congress. The changes to articles 28 and 123 had the objective of allowing private investors to participate in the banking sector. This means that the government's proposal consisted of excluding the financial sector from the strategic activities reserved for the Mexican state. Congress approved Salinas' constitutional amendments without any key opposition (Unal and Navarro 2005).

The banking sector privatisation started in June 1991 and finished in July 1992. The 18 banks were sold to private investors for US\$13 billion (Barnes 1992). The government and some analysts such as McQuerry (1999) declared the privatisation process successful, transparent and lucrative. Barnes (1992) and Unal and Navarro (1999) identify three main phases in the banking system privatisation process. The first phase consisted of analysing and selecting the potential bidders by the Bank Divestiture Committee. This committee was structured by the Ministry of Finance, the Ministry of Labour, the Ministry of Social Development, the Bank of Mexico, the Mexican Banking Commission and the National Securities Commission.

These organisations also had the objective of carrying out the economic valuation of the banks. The committee was assisted by external consultants. Merrill Lynch, Goldman Sachs, McKinsey, CS First Boston and Price Waterhouse were some of the consultancy firms that were closely involved in the process. Unal and Navarro (2005) indicate that each bank was valued individually. The valuations focused on defining the reservation prices, which served to reveal the fairness of the bid prices. These companies also determined the equity values and the going concern values. The committee, the banks and the external consultants analysed all the valuation reports and their results were considered to be highly confidential¹²⁹. Finally, one of the key requirements in this phase was that all the interested investors had to demonstrate their experience and capacity to manage a financial institution.

In the second phase, the government carried out the auctions in which the investors made their bids. The winning bids had to be higher than the bids offered by other investors and the valuations of the banks, which were determined by the Bank Divestiture Committee. Moreover, to participate in the auction, investors had to sign a letter of confidentiality and make a security deposit to prove that they had sufficient financial resources to buy the banks. Banks were grouped in six packages of three and four institutions. This process allowed the government to auction all the banks at the same time. Finally, in the last phase, the banks were sold to the winning investors.

¹²⁹ Ibid.

Table 5.3: Privatised banks

| Banks | Winning Investors | Price (US\$millions) |
|---------------------|--------------------------|---------------------------------|
| Package 1 | | |
| Mercantil del Norte | José Madariaga | 2.66 |
| Banpaís | Angel Rodríguez | 3.02 |
| Banca Cremi | Villa y Flores | 3.40 |
| Package 2 | | |
| Banca Confía | Jorge Lankenau | 3.73 |
| Banco del Oriente | Margain Berlanga | 4.00 |
| Bancrecer | Roberto Alcántara | 2.53 |
| Banamex | Hernández y Harp | 2.62 |
| Package 3 | | |
| Bancomer | Garza Lagüera | 2.99 |
| BCH | Carlos Cabal | 2.67 |
| Package 4 | | |
| Serfin | Sada y Luken | 2.69 |
| Comermex | Agustín Legorreta | 3.73 |
| Mexicano Somex | Gómez y Somoza | 4.15 |
| Package 5 | | |
| Atlántico | De Garay y Rojas | 5.30 |
| Promex | Eduardo Carrillo | 4.23 |
| Banoro | Rodolfo Esquer | 3.95 |
| Package 6 | | |
| Mercantil del Norte | González Barrera | 4.25 |
| Internacional | Antonio del Valle | 2.95 |
| Banco del Centro | Hugo Villa | 4.65 |

Source: Trillo and López (2011)

Table 5.3 shows the privatised banks and their buyers. In particular, it indicates that Bancrecer was the bank that had the lowest price. It was sold at a price 2.53 times higher than its book value, whereas Atlántico was the institution with the highest price. It had a price 5.30 times higher than its book value. In this way, a new financial elite emerged from the acquisition of these institutions. According to Hoshino (1996), Mexico's new businessmen can be classified into two categories: 1) investors who employed privatisation to strengthen their market power; and 2) new investors who took the chance of that structural programme to increase their reputation and therefore their economic power. These banks were sold to national businessmen.

In addition to the implementation of market reforms, Salinas' administration could reach important economic agreements (e.g. the North American Free Trade Agreement – NAFTA) with other countries. These factors sent positive signals to the international

markets and as a result, the country received net capital inflows of \$120 billion between 1990 and 1994. However, this scenario started changing dramatically because of three key political and social events.

The first event occurred on 1st January 1994, when a guerrilla movement declared war against the Mexican government. In particular, the Ejército Zapatista de Liberación Nacional (EZLN) – the Zapatista Army of National Liberation that was formed by indigenous people from one of the country's poorest areas (Chiapas) – demanded better socio-economic conditions (e.g. political autonomy, better health care services, respect for their human rights, etc.) for their communities. Interestingly, the EZLN initiated its social movement the day that NAFTA came into effect. The second event occurred on 23rd March 1994, when the PRI's presidential candidate, Luis Donaldo Colosio, was assassinated. Finally, the third event occurred on 28th September 1994, when the PRI's general secretary, José Francisco Ruiz-Massieu, was also assassinated.

These events had an immediate impact on the economy. For instance, the country's foreign currency reserves decreased from US\$29.3 billion in February to US\$17.7 billion in March (Arner 1996). The Bank of Mexico attempted to decrease the outflow of capital by increasing interest rates from 10% to 17.8%. This situation was worsened by the unexpected rise of the US interest rates. The three-month T-bill rate increased from 3% to 5.64% during 1994 (Urzúa 1997).

The crisis erupted three weeks after President Ernesto Zedillo (1994–2000) took office. The peso was devaluated and then it was allowed to freely float, because the government was not able to maintain the exchange rate (McQuerry 1999). According to OECD (1995), this action had different severe effects on the Mexican economy. For instance, GDP growth fell from 4.4 to -6.2%, the unemployment rate doubled to 7% during the first eight months of 1995 and the prime lending rate increased from 17% in 1994 to 58% by the middle of 1995. One of the consequences of the high interest rates was that people were unable to pay their bank debts. To protect their investments from the banks' legal actions, many small socio-economic groups (e.g. farmers) formed important associations. El Barzón was a group of debtors that attempted to persuade the government to reduce their debts.

There are different perspectives that explain the connection between the 1994–1995 economic crisis and the collapse of the banking sector. Some analysts consider that

this economic shock was the factor that led to a crisis in the banking industry. More specifically, the policy-makers involved in the banks' privatisation process support this argument (Haber and Kantor 2003). However, there is strong evidence that indicates that the privatisation worsened the 1995 economic crisis. In other words, the banking sector was already in a very critical condition before that economic shock.

Haber and Kantor state that Salinas' administration did not adequately design and implement the policy. There were different irregularities in the privatisation process that negatively influenced the banks' operations. For instance, the government sold the banks without considering the new owners' financial experience. This means that these investors lacked the knowledge to manage their institutions. Salinas' administration only focused on maximising the banks' prices without paying attention to other key elements. Moreover, the authorities did not have the regulatory mechanisms to control the banks' behaviour. Consequently, these companies did not operate under international standards and were inefficient (Sigmond 2011). When the privatised banks started operating, credit rapidly increased. The high prices that investors paid for the banks led them to immediately recover their investments.

The urgency of recovering such investments triggered competition among banks and therefore commercial lending increased considerably¹³⁰. For example, after the banks were completely privatised, mortgage loans increased 47% per year and credit offered by department stores for durable goods increased to 67% (McQuerry 1999). Gruben and McComb (1993) state that the banks expanded credit without reviewing people's creditworthiness adequately. The inefficient analysis of this factor by the banking industry, the government's inability to regulate the banks and a poor judicial system generated a large amount of non-performing loans (Sigmond 2011).

The financial crisis not only uncovered the irregularities of the privatisation process, it also showed the corrupt practices carried out by the Mexican authorities and the banks' owners. These events emerged when President Zedillo decided to bail the banks out of the financial collapse. The Fondo Bancario de Protección al Ahorro (FOBAPROA) – the Banking Fund for the Protection of Savings – was the programme used by the government to rescue the banking system. FOBAPROA's main objective was to recapitalise all the private banks. Moreover, this programme acquired these financial institutions' debts.

¹³⁰ Ibid.

The cost of the bailout was estimated to be around US\$120 billion (Galván 2009), which was converted into public debt by President Zedillo and his political allies (e.g. the National Action Party). This decision was considered to be an illegal action, because there were constitutional restrictions that did not allow the federal authorities to acquire debt. It represented a significant fiscal cost for the country. The problem was that a considerable number of the FOBAPROA's liabilities were non-performing loans generated by the bankers themselves. More specifically, these investors obtained loans from their own banks at low interest rates for their ghost companies.

The political opposition found evidence that shows that the privatised banks' owners were closely related to President Salinas¹³¹. The banks were given to small and powerful interest groups related to the political regime. Moreover, Ramírez (2003) states that a group of families that owned and controlled the banks before the 1982 nationalisation recovered their financial institutions. Some of these investors contributed financially to the 1994 and 2000 presidential campaigns. For example, Carlos Cabal Peniche, who owned BCH (see Table 5.3), was accused of illegally financing President Zedillo's political campaign. He contributed US\$30 million, obtained from bad loans, to the PRI's political activities. The loans were absorbed by FOBAPROA (Smith 1998). The negative effects of the privatisation on the economy angered people enormously. As a result, this situation was one of the factors that led the PRI to lose the majority in Congress in the 1997 mid-term elections (Haber 2005).

5.3.2. Private Sector Participation in the Mexican Electricity Industry

5.3.2.1. The Independent Power Producers' Structure

In Chapter 4, we indicated that the Ley del Servicio Público de Energía Eléctrica (LSPEE) – the Electricity Act or IPP Law – was the legal mechanism that allowed the partial participation of private companies in electricity generation in the Mexican market. Moreover, the amendment to constitutional article 27 allowed private investors to participate in the natural gas sector. More specifically, companies can freely store, transport and distribute this kind of fuel in the country. The reason that the government decided to open the gas industry was because the economy does not have the infrastructure (e.g. pipelines) to transfer large amounts of gas to areas where the demand is high. However, the investors can only focus their operations on the proven gas reserves and therefore they cannot participate in the exploration of other gas fields

¹³¹ For instance, the owners of Banamex (one of the three largest banks in Latin America), Roberto Hernández and Alfredo Harp, were close friends of President Carlos Salinas (Ramírez 2003).

(Núñez-Luna 2005). The key companies that have been investing in this area are Gas Natural (Spain), Tractebel (Belgium) and Sempra (US)¹³².

At the end of the 1980s there were two projects called Carbón II and Rosarito that had the objective of generating electricity under an operative structure similar to the independent power producers (IPPs). These investments could not be implemented because the government did not have enough technical knowledge to control these coal-fueled generators correctly (Protego 2000). In 1997, the government granted the first IPP project to the American company AES Mérida III. Table 5.4 shows that this electricity generator started operating in 2000 with a total investment of US\$214 million. At the moment there are 21 IPPs that generate electricity, which is sold to CFE. In 2007, the total investment under this scheme was around US\$7 billion.

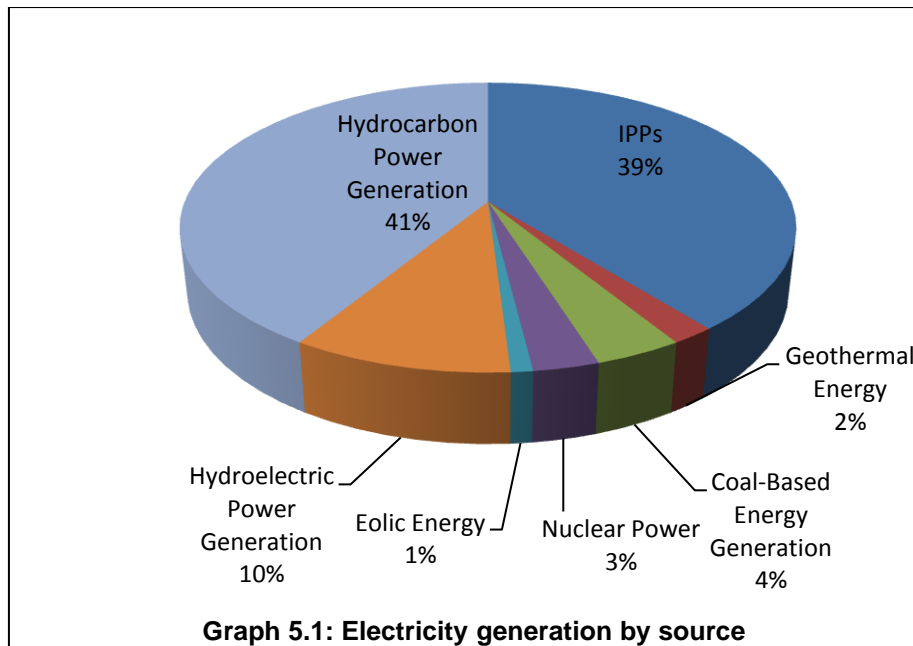
¹³² Ibid.

Table 5.4: Independent power producers in Mexico

| Company | Authorised Capacity (MW) | Authorised Energy (GW/Year) | Investment (in thousand USD) | Date of Operation |
|--|--------------------------|-----------------------------|------------------------------|-------------------|
| 1. Mérida III | 531 | 3400 | 292,325 | 2000 |
| 2. Fuerza y Energía de Hermosillo | 253 | 1800 | 138,985 | 2001 |
| 3. Central Anáhuac | 569 | 3700 | 312,730 | 2002 |
| 4. Central Saltillo | 247 | 1650 | 136,125 | 2001 |
| 5. Energía Azteca VIII | 597 | 4399 | 328,350 | 2002 |
| 6. Electricidad Aguila de Tuxpan | 535 | 3707 | 294,558 | 2001 |
| 7. Iberdrola Energía Monterrey | 570 | 3685 | 313,500 | 2002 |
| 8. Transalta Campeche | 275 | 2103 | 151,250 | 2003 |
| 9. Electricidad Aguila de Altamira | 565 | 3631 | 310,915 | 2002 |
| 10. Fuerza y Energía de Naco-Nogales | 339 | 1920 | 188,615 | 2003 |
| 11. Energía Azteca X | 597 | 4850 | 328,488 | 2003 |
| 12. Fuerza y Energía de Tuxpan | 1120 | 7362 | 616,000 | 2003 |
| 13. Iberdrola Energía Altamira | 1154 | 7797 | 636,535 | 2003 |
| 14. Transalta Chihuahua | 318 | 2174 | 174,845 | 2003 |
| 15. Central Lomas de Real | 541 | 3780 | 297,550 | 2004 |
| 16. Central Valle Hermoso | 547 | 3700 | 300,850 | 2005 |
| 17. Iberdrola Energía La Laguna | 518 | 3704 | 284,790 | 2005 |
| 18. Iberdrola Energía del Golfo | 1089 | 8259 | 598,862 | 2006 |
| 19. Compañía de Generación de Valladolid | 563 | 3849 | 309,870 | 2006 |
| 20. Electricidad Sol de Tuxpan | 548 | 3787 | 301,620 | 2006 |
| 21. Iberdrola Energía Tamazunchale | 1079 | 8518 | 593,362 | 2007 |

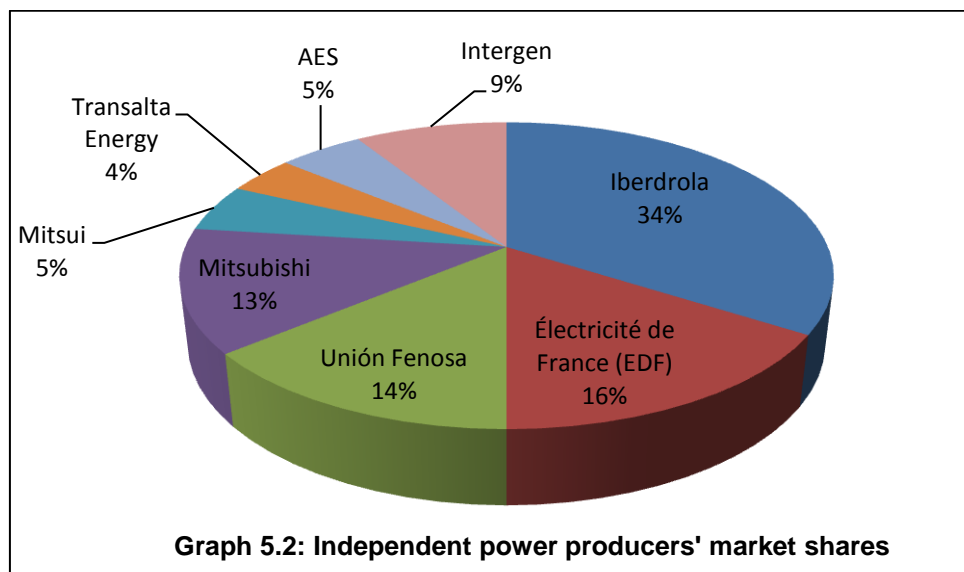
Source: Energy Regulatory Commission (2005).

The IPPs in Mexico are mainly international corporations. In particular, Unión Fenosa (Spain), Iberdrola (Spain), Mitsubishi Corporation (Japan), Mitsui & Co., Ltd (Japan), Transalta Energy Corporation (Canada), Électricité de France EDF (France), AES (US) and Intergen (US) are the key players in the electricity market. In this way, these IPPs generate 40% of the electricity in the country, which is a very high level (see Graph 5.1).



Source: Own estimations with data from the Federal Electricity Commission (CFE)

In 2007, the companies' market shares were: Iberdrola had a market share of 34%; Électricité de France (EDF) 16%; Unión Fenosa 14%; Mitsubishi Corporation 13%; Intergen 9%; Mitsui & Co., Ltd 5%; Transalta Energy 4%; and AES 5%. Graph 5.2 shows that Iberdrola has the highest market share, whereas Transalta Energy has the lowest market share in the Mexican electricity industry.



Source: Own estimations with data from Pérez (2010).

Table 5.5: Development of the IPPs' market shares in the Mexican electricity industry (%)

| Company | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|------------------------|------|------|------|------|------|------|------|------|
| AES | 100 | 80 | 15 | 12 | 7 | 7 | 5 | 5 |
| EDF | - | 4 | 29 | 20 | 18 | 19 | 20 | 15 |
| Iberdrola | - | - | 11 | 10 | 20 | 25 | 26 | 34 |
| Intergen | - | - | 17 | 16 | 15 | 13 | 11 | 9 |
| Mitsubishi Corporation | - | 5 | 23 | 17 | 11 | 11 | 11 | 13 |
| Mitsui & Co., Ltd | - | - | - | - | - | - | 3 | 5 |
| Transalta Energy | - | - | - | 5 | 7 | 6 | 5 | 4 |
| Unión Fenosa | - | 11 | 5 | 20 | 22 | 19 | 18 | 14 |

Source: Own estimations with data from Pérez (2010).

Table 5.5 shows the development of the private companies' market shares from 2000 to 2007. It indicates that in 2000, AES was the only company that was generating and selling electricity to CFE. In 2002, Iberdrola started its operations with a market share of 11%, whereas EDF was the main player in the industry with a market share of 29%. According to Pérez (2010), in 2002 Iberdrola sold 2.2 billion kilowatt hours (kWh) to CFE. In 2007, the electricity sold by the same company increased to 24 billion kWh. During the same period, Électricité de France increased its electricity sales to CFE from 179 million to 9 billion kWh.

Table 5.6: The cost of electricity compared to CFE's programmable expenditure

| Year | Total Amount of Electricity Sold to CFE by IPPs (GWh) | CFE's Programmable Expenditure (in million USD) | Cost Paid for IPPs' Electricity by CFE (in million USD) | % |
|-------|---|---|---|------|
| 2000 | 1,227,629,008 | 10,782 | 59 | 0.55 |
| 2001 | 4,005,092,131 | 11,144 | 165 | 1 |
| 2002 | 21,204,654,900 | 11,246 | 791 | 7 |
| 2003 | 30,112,095,663 | 14,560 | 1,874 | 13 |
| 2004 | 45,579,280,460 | 14,691 | 3,224 | 22 |
| 2005 | 45,157,439,828 | 17,602 | 3,917 | 22 |
| 2006 | 58,074,316,962 | 18,582 | 4,169 | 22 |
| 2007 | 70,291,803,793 | 18,764 | 4,991 | 26 |
| Total | 275,652,312,745 | 117,371 | 19,190 | - |

Source: Own estimations with data from Pérez (2010).

Table 5.6 shows the amount of electricity sold to CFE. We can observe that from 2000 to 2007, CFE purchased 275, 652 million kWh with a total cost of more than US\$19 billion. We can also observe that in 2000, the cost paid by CFE for the electricity generated by IPPs represented only 0.55% of the utility's programmable expenditure. However, in 2007 the cost of electricity increased to US\$4.9 billion, which represented 26% of the company's programmable expenditure.

Table 5.7: Operating reserve margin in the Mexican electricity industry (%)

| Month | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-----------|------|------|------|------|------|------|------|------|------|
| January | 17 | 8 | 5 | 4 | 4 | 18 | 20 | 17 | 26 |
| February | 9 | 4 | 7 | 7 | 10 | 20 | 7 | 23 | 25 |
| March | 7 | 1 | 1 | 3 | 8 | 17 | 22 | 14 | 22 |
| April | 20 | 3 | 2 | 5 | 12 | 15 | 17 | 12 | 27 |
| May | 11 | 3 | 5 | 7 | 7 | 15 | 13 | 15 | 22 |
| June | 15 | 10 | 8 | 10 | 15 | 16 | 13 | 14 | 24 |
| July | 16 | 0 | 6 | 12 | 19 | 22 | 22 | 19 | 24 |
| August | 13 | 2 | 3 | 4 | 18 | 20 | 9 | 15 | 28 |
| September | 12 | 1 | 3 | 11 | 17 | 17 | 11 | 17 | 26 |
| October | 14 | 2 | 4 | 4 | 20 | 12 | 14 | 18 | 27 |
| November | 10 | 8 | 1 | 13 | 13 | 11 | 13 | 13 | 23 |
| December | 8 | 8 | 1 | 11 | 24 | 9 | 12 | 19 | 24 |
| Average | 13 | 4 | 4 | 7 | 14 | 16 | 14 | 15 | 25 |

Source: Sener (2000).

Table 5.7 provides very interesting data on the industry's operating reserve margin (ORM). The ORM indicates the national electricity system's capability level (expressed as a percentage). It is used to determine if the system satisfies the country's electricity demand. According to Pérez (2010), in 1998 the CFE's executive board, the Ministry of Energy, the Ministry of Finance and the Ministry of Audit considered that the electricity generation capacity had to be 6% higher than the electricity demand. In Table 5.7, we can observe that the ORM increased from 13% in 2000 to 25% in 2007. In other words, this industry has been generating electricity above the optimal level agreed by the authorities.

In the particular case of 2007, the ORM indicates that there is a significant electricity oversupply of 19%, which has not been used by CFE. Consequently, this situation can be very costly for the public finances, because the government is paying for an underused electricity generation system. This evidence also tells us that the IPPs have been displacing the CFE's participation in electricity production.

5.3.2.2. Two Key Problems in Mexico's IPP Programme

In this section, we have selected two key cases that show some of the problems in the Mexican electricity industry (MEI). In particular, the first case is the Pidiregas programme, which is the financial structure that the government has been using to expand the electricity supply system. The Pidiregas projects have been considered by analysts as a very costly financial alternative for the country. The second case offers an example of the different irregularities found in the CFE's investment projects. We

present an analysis of a natural gas supply contract between the CFE and a private company.

(i) The Pidiregas projects

In Chapter 4, we stated that the *Proyectos de Impacto Diferido en el Registro del Gasto (PIDIREGAS)* – Deferred Impact Status Projects – were the mechanisms that the government has been using to finance part of the expansion in the country's electricity generation system. In December 1995, Article 18 of the Federal Public Debt Law and article 30 of the Federal Public, Budgetary, Accounting and Expenditures Law (now article 32 of the Budget Law) were modified to allow the government to create a long-term contingent public debt scheme to finance large-scale infrastructure investments in the energy sector (oil and electricity). The federal authorities stated that the country's low public revenue, the 1994–1995 economic crisis and the lack of internal financing were the factors that led them to opt for the Pidiregas projects.

The Pidiregas projects have to satisfy certain conditions to be approved by the federal authorities. For instance, these projects have to be strategic investments for the economy and generate enough economic resources (revenue) to meet their own payment obligations (White and Case 2009). Thus, there are two kinds of Pidiregas projects: 1) direct Investments; and 2) conditional Investments. In the first type of investment, private companies finance and develop the infrastructure projects. When the project is concluded, the government is obligated to purchase it and its cost is considered as public debt. In theory, the government pays it by using the revenue that will be generated by such an investment (OECD 2005).

In the case of conditional investments, the infrastructure projects (e.g. power plants) are financed, built, owned and operated by private companies (Draisma and Urbiola 2001). Under this scheme, the government is contractually bound to acquire the electricity generated by these private power stations during a specific period. The investments are considered as contingent liabilities and the government absorbs the risk. The Pidiregas projects are annually amortised and this process is based on a period agreed between the government and the private companies. The cost of direct and conditional investments is included in the federal annual budget.

The Pidiregas projects have a duration of 40 years and can be renewed. According to the Ministry of Finance, the country has been paying for these projects since 1996, and such payments will continue to be made to private investors until 2041. In 2009, the

cost of the Pidiregas projects was US\$28 billion. In particular, direct investments represented 64% of the total cost and conditional investments represented 34%. There are three direct investment projects that concentrate most of the public expenditure in the electricity industry. Pacífico is a coal-fired power station that is located in the State of Guerrero, which started operating in February 2007. The cost of this investment is around US\$1.1 billion. El Cajón is a hydroelectric power station that started operating in November 2006 and is located in the State of Nayarit. The cost of this power station is US\$1.1 billion¹³³.

La Yesca is another hydroelectric power station that will start operating in December 2012. The cost of the investment project is US\$1.1 billion. From the IPPs' initial operations to 2009, the government has paid US\$22.5 billion for the electricity generated under the conditional investment scheme. This value represents only 17% of the total revenue that the private companies will receive during the agreed period. It means that from 2010 to 2041, the IPPs will obtain US\$111 billion, which represents the remaining 83% of their planned total revenue¹³⁴.

What are the key problems in the Pidiregas scheme? We consider that the Pidiregas have been generating a huge amount of debt. Such liabilities will be paid by increasing taxes and by transferring economic resources from other sectors' programmable budgets. If the government reallocates these resources, people's welfare could be severely affected by the reductions in important social development programmes. In the particular case of the direct investment projects, we can state that the government did not need to pay for the power plants built by the private companies. This is because the CFE has been considered to be a financially stable company¹³⁵. Consequently, this state-owned utility is able to obtain resources from the international financial market at lower interest rates than the private sector to build the power plants.

According to ECLAC (2001), the Pidiregas projects have other negative effects on the country's public finances. For instance, these projects are considered to be risky investments by the international capital markets. As a result, the country's debt levels can also be rated as very risky. Since the Pidiregas are included in the country's total debt, the government has a lower debt capacity. Finally, the direct investment projects were not well justified by the government. The Ministry of Finance has accepted that

¹³³ Own estimations with information from Cámara de Diputados (2003).

¹³⁴ Ibid.

¹³⁵ In Chapter 6, we provide an analysis of the CFE's financial structure.

the CFE significantly inflated the Pidiregas projects' expected revenues. The public utility manipulated the information to show that the power stations were financially viable (Cruz 2005).

Other irregularities have been found in the direct investment projects. For instance, in 1998, the CFE started paying interest for the power plant Samalayuca II. One year later, the public utility initiated the amortisation of the project. However, Samalayuca II was not generating revenue during those years. Although in 2000 the power plant did generate revenue, these resources were not enough to cover its financial costs (interests and amortisation) for that specific year (Rodríguez 2002).

Similarly, we consider that conditional investments (IPPs) represent a high cost for the economy. As we observed in the previous section, the Mexican electricity industry's generation capacity is significantly high but has not been completely used. In addition to the IPP projects that are currently operating in Mexico, the government has approved the construction of another five new projects. These IPPs are called Noreste, Norte II, Guadalajara I, Norte and Baja California III. From 2010 to 2041, the government will be gradually paying US\$43 billion for the electricity generated by these private companies. The IPPs will start operating between 2010 and 2016.

There is an oversupply of electricity that is generating an enormous debt, which has to be paid during the following forty years. The authorities have accepted that the CFE overestimated the electricity supply for the country. For instance, in 2006, the power plants built by private companies did not use 30% of their total generation capacity (Cruz 2006). In 2010, the CFE decided to reduce its electricity supply by 16% (26,218 GWh). Moreover, the CFE is shutting down its power stations in order to allow IPPs to generate electricity. Another problem is that the IPPs generate electricity by using natural gas. At the moment, Mexico has not carried out enough exploration and exploitation of natural gas reserves. Consequently, the country has to import gas at very high prices.

(ii) The CFE-Repsol natural gas contract

In April 2008, former presidential candidate Andrés Manuel López Obrador (AMLO) accused the CFE of illegally awarding a natural gas contract to Repsol. In particular, AMLO publicly declared that the state-owned electricity utility gave the Spanish oil company a contract that was not subject to a clear bidding process. This permission allowed Repsol to supply and sell natural gas to the CFE for IPPs' electricity

generation. By studying the information provided by AMLO's Gobierno Legítimo de México (GLM) – Mexico's Legitimate Government¹³⁶ – we find key irregularities in the contracts' bidding process.

The information we analysed is structured by a significant group of fourteen files: the CFE-Repsol natural gas contract (File no. 1-2008); Repsol's hydrocarbon exploration and production contract in Peru (File no. 2-2008); Peru's presidential decree for exploring and producing hydrocarbons in lot 88; and Repsol's different press bulletins about its investment programme in gas exploration and production in Peru (File no. 3-2008). Further files include Mexico's *Official Journal of the Federation* – 6th June 2006 (File no. 4-2008); the natural gas terminal project in Manzanillo, Mexico (File no. 5-2008); the CFE's press bulletin which announces that Repsol won the contract for supplying natural gas to the Manzanillo terminal and a news bulletin which states that Repsol was the only company that presented a project for supplying gas to CFE (File no. 6-2008); Repsol's Annual Report for the United States Securities and Exchange Commission and the New York Stock Exchange NYSE (File no. 7-2008); an analysis of natural gas's liquefaction costs (File no. 8-2008); an analysis of the effects of the CFE-Repsol contracts on the Mexican economy (File no. 9-2008); the contract's fifth modification for hydrocarbon production in lot 88 (File no. 10-2008); permission to initiate legal action against the Peruvian authorities who awarded lot 88 to Repsol (File no. 11-2008); Repsol's press bulletin which announces the acquisition of different combined-cycle power plants from Électricité de France and Mitsubishi in Mexico (File no. 12-2008); PEMEX's press bulletin which indicates that Repsol won a contract to develop a non-associated gas block in the field of Burgos (File no. 13-2008); and the Superior Auditing Office of the Federation's report about the acquisition of Repsol's shares by PEMEX (File no. 14-2008).

(ii.i) Analysis of the contract's bidding process

According to the above group of information, we can state that in 2007 the federal government reached an agreement with Repsol in order to get a natural gas supply for electricity generation. In particular, the contract states that Repsol will supply the CFE with 500 million cubic feet of gas daily from Peru. This business operation has been

¹³⁶ AMLO's followers consider him Mexico's Legitimate President. According to official data, President Felipe Calderón Hinojosa won the elections with 35.89% of votes whereas AMLO obtained 35.31%. However, these results have been severely questioned.

- These circumstances led AMLO to disagree with the Presidential elections. As a result, he structured his own cabinet called "Mexico's Legitimate Government".

considered by the Spanish company as one of its most important and profitable projects in the world (File no. 1-2008).

GLM (2008) states that in 2005 the federal government was working internally on a gas supply project and on a regasification investment programme in Manzanillo City. Under unexplained circumstances, Repsol obtained information about the CFE's investment plans in Manzanillo. Then, on 12th December 2005, Repsol joined the group of private investors that had originally been awarded the concession to explore and exploit a gas reserve in the Camisea region, Peru¹³⁷. In particular, the Spanish company obtained an investment participation of 10% in gas exploitation, 10% in transportation (via a pipeline network) and 20% in the liquefaction plant. Moreover, the company got an exclusivity agreement for gas commercialisation (File no. 2-2008).

To get approval to participate in this project, Repsol had to inform the Peruvian government that it was going to sell natural gas to Mexico and to the United States (GLM 2008). Once the company got authorisation from Peru, Repsol's contract was structured over eighteen years, three years for building the liquefaction plant and its pipeline network, and fifteen years for gas commercialisation. This meant that by 2011, Repsol was going to be technically able to supply gas to Mexico (File no. 3-2008). It is important to consider that Repsol had not held any previous legal contract to supply natural gas to Mexico. Under these conditions, how did Repsol know that it was going to sell gas to the CFE in 2005, one and a half years before the Manzanillo's international bidding process was publicly opened?

On 6th June 2006, the CFE officially announced the bidding process for the gas supply project and Manzanillo's regasification plant in the *Official Journal of the Federation* (File no. 4-2008). According to this journal, the project offered an investment plan of 25 years to the winning contractor (File. no. 4-2008). However, on the CFE web page, the length of the contract was reduced to twenty years (File no. 5-2008).

On 18th September 2007, the CFE gave Repsol the contract, as no other private company participated in the international bidding process (GLM 2008 and File no. 1-2008). The length of the contract was again modified; the gas supply agreement between the two companies was reduced to 15 years, which perfectly matched with Repsol's gas commercialisation contract in Peru (File no. 6-2008). Moreover, and

¹³⁷ Ibid.

according to File no. 7-2008, Repsol publicly announced that the end of the construction of the liquefaction plant in the Pampa Melchorita region of Peru would fall in late 2010, just before it would begin supplying gas to Mexico.

(ii.ii) Analysis of the Manzanillo gas project's costs

According to the contract, the CFE would pay Repsol US\$15 billion for the gas supply programme. However, this cost was estimated by using America's Henry Hub Natural Gas Index (HHGI), which is considered to be the world's most expensive gas reference price. It is traded in the New York Mercantile Exchange (NYMEX) and the index is therefore expected to increase year by year according to various financial forecasts (GLM 2008). In particular, Repsol offered to sell its gas at 91% of the index level minus three cents per million British Thermal Units, BTU (File no. 9-2008). GLM states that the project costs were extremely inflated and therefore will negatively affect the country's public finances.

In order to understand the contract's real value without using the HHGI, first we need to change cubic feet into million BTU¹³⁸. For instance, if one cubic foot of natural gas is equivalent to 1,032 BTU, then (500 million cubic feet of gas) x (1.032) gives a result of 516 million BTU. In this way, Repsol will supply the CFE with 90, 180, 360 and 400 million cubic feet (CFT) of gas per day during the contract's first four years respectively. Moreover, the Spanish company will supply Mexico with 500 million CFT during the following eleven years. Table 5.8 shows the conversion of these gas volumes from cubic feet into BTU.

Table 5.8: Repsol's natural gas programme for Mexico

| Year | Million Cubic Feet per Day | Million BTU |
|-------|----------------------------|-------------|
| 1 | 90 | 92.9 |
| 2 | 180 | 185.8 |
| 3 | 360 | 371.5 |
| 4 | 400 | 412.8 |
| 5-15 | 500 | 5,676 |
| Total | | 6,739 |

Source: File 9-2008

When the contract was signed in March 2008, the HHGI was US\$9.70 per million BTU. Consequently, the price the CFE had to pay for Repsol's gas was: $(0.91 \times 9.70) - 0.03$

¹³⁸ This is because gas prices in the US are expressed in million BTU.

= 8.797, practically US\$8.80 per million BTU. By using this information, we can state that the total cost of the business operation between the CFE and Repsol was estimated to be more than US\$21 billion (see Table 5.9).

Table 5.9: Projected payments to Repsol

| Year | Million BTU | Days | Price | Annual Payments (USD) |
|--------------------------------|-------------|------|-------|-----------------------|
| 1 | 92.9 | 365 | 8.80 | 298,330,560 |
| 2 | 185.8 | 365 | 8.80 | 596,661,120 |
| 3 | 371.5 | 365 | 8.80 | 1,193,325,452 |
| 4 | 412.8 | 365 | 8.80 | 1,325,916,812 |
| 5 | 516.0 | 365 | 8.80 | 1,657,395,212 |
| From year no. 6 to year no. 15 | | | | 16,573,952,120 |
| Total | | | | 21,645,581,276 |

Source: File no. 9-2008

According to an analysis carried out by GLM, Repsol's maximum price of gas per million BTU is US\$2.45¹³⁹. This cost is structured by the following elements: 1) production cost – 60 cents (per million BTU); 2) pipeline transport of the gas to the liquefaction plant – 40 cents (per million BTU); 3) liquefaction costs – US\$1 (per million BTU); and 4) ship transport to Manzanillo – 45 cents (per million BTU). This price includes the company's direct costs and its profits. In other words, Repsol's real price of bringing natural gas from Peru to Mexico is US\$6.35 cheaper than the contract's agreed price (US\$8.80).

With this information we can determine how much the cost of the contract was overestimated. If we multiply the total natural gas imports (6,738,960)¹⁴⁰ x the natural gas' real price (2.45 USD) x (365 days), we obtain a real cost of US\$6,026,314,980. In other words, Repsol is obtaining highly additional profits of US\$15.6 billion (21,645,581,276¹⁴¹ - 6,026,314,980). However, GLM (2008) indicates that the federal government has been publicly stating that the contract's cost is US\$15 billion. GLM considers that the government is hiding the real cost of the transaction with a figure based on an index that tends to increase.

¹³⁹ In 2007, Repsol reported that its realisation price was 2.15 USD per thousand cubic feet, which is equivalent to 2.09 US per million BTU (File no. 9-2008).

¹⁴⁰ See Table 5.8.

¹⁴¹ See Table 5.9.

There is another irregularity in this business operation. While the CFE was buying natural gas for electricity generation at a very high price, Repsol protected itself against price variations. The contract between Repsol and the Peruvian government gave the Spanish company certain price limits that isolate it from price fluctuations that could negatively affect its financial structure. In particular, the contract states that the annual accumulated price increases for gas will not be higher than 5% during the first six years and 7% during the following five years (File no. 10-2008). This situation attracted the attention of Peru's National Audit Office (Contraloría General de la República) and led it to investigate this agreement. The office found irregularities in the contract and ordered legal action against the authorities involved in this case (File no. 11-2008).

Although there is no public information about the terms and conditions of the contract between the Peruvian government and Repsol, there is evidence of the National Audit Office's resolutions. Some of the statements made by this organisation about this case are: "The adopted decisions (the contract) were against the State's interests; these actions show that there was abuse of authority and omissions against the country's penal code"; "According to the group of auditors, this operation allowed the winning contractor (Repsol and other players) to save a large sum of money because Peru will receive fixed royalty payments for the hydrocarbons exploitation in Camisea"; "A contract based on a fluctuating price system would have benefited Peru's public finances because the price of hydrocarbons and other minerals tend to increase"; "Peru's Hydrocarbons Law states that the projects' royalty payments cannot be fixed and therefore they have to fluctuate and be subject to external changes" (File no. 11-2008). This information clearly shows that the terms and conditions of the contract did not benefit Peru but considerably favoured this Spanish corporation.

(ii.iii) CFE's position on the Manzanillo gas project

According to the CFE's executive director, Alfredo Elías-Ayúb, the public utility did not favour the Spanish company. In particular, he stated that the contract was crucial for Mexico because they needed to guarantee the country's electricity supply. In terms of the public bidding process, he declared that the CFE invited the Fundación Heberto Castillo – the Heberto Castillo Foundation – a very respectable left-wing organisation, to be a social witness (*testigo social*). Elías-Ayub stated that "this foundation observed how the CFE's executives carried out a transparent bidding process ... the price of natural gas is 10% below the gas from the U.S. Therefore, we could save US\$ 1.5 billion with this operation" (El Universal 2008). Moreover, Elías-Ayub indicated that the natural gas from the Pacific area is limited. Consequently, Repsol had to build a high-

tech pipeline network and other sophisticated infrastructures to obtain this fuel from Peru. The executive director recognised that he did not know how much economic resources Repsol obtained from its contract in that Latin American country¹⁴².

However, the Gobierno Legítimo de México (GLM) and the Heberto Castillo¹⁴³ Foundation itself strongly rejected all Elías-Ayub's statements (La Jornada 2008a). In particular, Mrs Laura Itzel Castillo¹⁴⁴ and the foundation's president María Teresa Juárez¹⁴⁵ stated that the organisation's name was illegally used by the CFE. They accused the electricity utility of publishing a press bulletin in a national newspaper to defend its contract with Repsol without the organisation's permission. Moreover, they stated that the person who acted as the social witness during the bidding process, David Shields-Campbell, had already stopped working for the foundation. The opinions and observations he made about the contract represented his own point of view entirely. For instance, he signed the CFE's International Public Bidding Act – no. 18164067-009-06, in which Repsol presents the only offer to participate in the investment project. The foundation threatened to take legal action against the people who were responsible for this action¹⁴⁶.

5.4. CONCLUSIONS

This chapter presented a discussion of the key events that have influenced Mexico's economic development. We also showed that important privatisation programmes have not generated positive results for the people. The sale of Teléfonos de México (TELMEX) without modifying its monopolistic structure, the lack of competition and the high concentration levels in the telecommunications industry have been very costly for the economy.

According to OCDE (2012), from 2005 to 2009 the high prices in the telecommunications sector significantly reduced people's welfare by US\$25 billion per year. During this period, consumers paid an extra total cost of US\$129 billion for their telecommunications services (fixed telephone lines, mobile telephony and Internet access). This international organisation points out that this welfare loss is severely affecting a country with high poverty and inequality levels. The World Bank also recognised that the Mexican authorities did not choose the correct privatisation

¹⁴² Ibid.

¹⁴³ Heberto Castillo (1928-1997) was a famous Mexican left-wing political activist who supported the country's democratic movement.

¹⁴⁴ She is Mr Castillo's daughter.

¹⁴⁵ She is Mr Castillo's widow.

¹⁴⁶ Ibid.

strategy. This institution considered that the best option was to split Telmex into different companies¹⁴⁷. Similarly, the bad privatisation process of the banking system led to the FOBAPROA bailout that cost US\$120 billion. One of the irregularities found in this process was that the banks were sold to interest groups that were strongly connected to the political regime. Bad loans were used to finance the PRI's political campaigns.

The reform to the Ley del Servicio Público de Energía Eléctrica (LSPEE) – the Electricity Act – has negatively affected the country's public finances. The evidence demonstrates that the country is paying a high cost for the electricity generated by the IPPs. Moreover, the MEI's total generation capacity is significantly higher than the projected electricity demand. The cost of the electricity and the direct investment projects constitute a long-term debt that the country will have to pay during the following 41 years. This situation confirms that the strategy for allowing the private sector to participate in the MEI was not planned adequately.

The natural gas contract revealed a delicate situation in the MEI. Why was Repsol the only company that presented the investment project? How did Repsol know about the Manzanillo project one and a half years before the CFE officially announced the bidding process? Why were the contract's costs extremely inflated by the Mexican government (from 6 to 21 USD billion)? We consider that there are high corruption levels in this sector, which are generating large losses for the public finances. It is a very complex situation because top-level executives are directly involved in these illegal practices. In September 2011, the CFE's Head of Operations was accused of illegal enrichment. The executive, Nestor Moreno, received a luxury yacht, a Ferrari and several million dollars in exchange for lucrative contracts for American companies (Luhnow 2010). Moreno has been investigated by the US. federal authorities, whereas the Mexican counterparts have remained silent about it.

In conclusion, the evidence presented in this chapter showed that Mexico's privatisation programme did not generate positive results for the economy. The privatisations were not adequately implemented and the political interests strongly influenced the companies' operations. Although the MEI has not been privatised, the limited private sector participation has been extremely costly for society. In other words, we consider that these policies failed to achieve the benefits promised by the

¹⁴⁷ See section 5.3.1.1.

political regime. In the next chapter, we continue with the analysis of the privatisation agenda. In particular, we focus our attention on understanding why the political system was unable to implement its privatisation strategy in the electricity sector. We propose an alternative theoretical approach to study this phenomenon.

CHAPTER 6: APPLYING PROSPECT THEORY TO THE NON-PRIVATISATION OF MEXICO'S ELECTRICITY INDUSTRY

6.1. INTRODUCTION

The energy sector reform is Mexico's most important structural reform programme. The federal government considers the privatisation programme of the electricity industry to be one of the key elements that can strengthen the country's economic development. For that reason, a proposal to modify the Constitution in order to privatise the Mexican Electricity Industry (MEI) was introduced in 1999 by President Ernesto Zedillo (1994–2000) from the Institutional Revolutionary Party (PRI). The second privatisation proposal was presented by President Vicente Fox from the National Action Party (PAN). In both cases, the proposals were rejected by the different players involved in the political dynamics.

Why were Presidents Ernesto Zedillo and Vicente Fox unable to implement their electricity privatisation proposals? We consider that these two federal administrations could not implement these economic policies because they faced a dynamic decision-making process that involved risky and risk averse choices. We propose prospect theory (PT) as our methodological framework to explain these interesting behaviours. "Of course, one could say that is just political opportunism: The opposition likes to oppose! But from a prospect-theory perspective, it may also reflect the changing economic fortunes of the energy sector" (interview with Kurt Weyland 2005)

This chapter is divided into four main sections. Section 6.2 presents the methodology design. In particular, it describes the two different models that we use to answer the above question. In section 6.3, we apply PT to understand why President Zedillo could not implement his electricity privatisation project. As an introductory context, we explain why the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act – could successfully be reformed during Salinas' administration. Section 6.4 analyses why President Vicente Fox was unable to apply his electricity privatisation proposal. It is important to highlight that this study focuses mainly on exploring the political dynamics and the decision-making process of the two failed privatisation projects.

6.2. METHODOLOGY DESIGN

6.2.1. Justification of the Research

It is well known that the PRI and the PAN have the same economic platform and have supported each other's policies (e.g. tax increases, bank bailouts, etc.) for many years. Also, both political structures consider the MEI privatisation as one of the economy's main issues. However, the behaviour of these two parties has shown a different picture; both institutions have not reached any agreement in Congress to completely open the electricity sector to private investors. The two parties could easily form a coalition to approve the federal government's market policy, but it has not occurred.

The electricity privatisation proposals were rejected twice. As we discussed in Chapter 4, in 1999 President Ernesto Zedillo publicly presented the first proposal. Zedillo's administration required the National Action Party (PAN)'s support to have a majority in Congress to implement this economic project. However, the PAN did not support him. The president of the Energy Regulatory Commission, Xavier Salazar, simply stated that the PAN did not support Zedillo because the party's candidate was very competitive and therefore it decided to discuss the proposal during the next administration. After President Vicente Fox took office, the PAN government presented its own proposal, but it was not supported by the different political actors, including the PRI.

We consider that the decisions to not privatise the electricity industry are confusing and contradict these political players' economic objectives (the implementation of a structural change in the electricity industry). The Party of the Democratic Revolution (PRD), Mexico's left-wing party, has always been against any change in the Mexican Constitution in terms of the energy sector. The PRD's position about reform will rarely be in support of modifying (from public to private ownership) the current status quo of the industry.

The decision whether to carry out a privatisation programme or not has to be well evaluated by policy-makers. If policy-makers take inefficient decisions, the process of transforming an industrial sector can be negatively affected and therefore be very costly for the country's economy (see the privatisation cases in Chapter 5). Consequently, a privatisation strategy has to be viewed as a risky choice. Under these conditions, we consider that policy-makers have to carry out their decision-making process by considering the context of the electricity sector.

By analysing how other Latin American economies have instituted market reforms, we find some evidence that shows that political leaders faced risky situations when

deciding to reform their economies. In Chapter 3 we discussed how countries such as Argentina, Brazil and Peru experienced certain factors that shaped the context of such decision-makers' and citizens' choices during the 1990s. More specifically, serious economic crises triggered the implementation of painful market policies. This means that they moved from relaxed economic policies to bold and risky neo-liberal measures, which promised to end with economic chaos in those countries. Under this logic, we consider that the Mexican case in terms of the electricity sector showed some characteristics similar to the above countries. This phenomenon attracted our attention and therefore led us to explore the decision-making processes of the debate about the MEI privatisation programme.

6.2.2. Research Questions and Models

This evidence led us to formulate the following research questions: what are the reasons behind the unwillingness of the PAN to support President Zedillo's electricity privatisation programme, and what explains the unwillingness of the political players to carry out the electricity privatisation programme proposed by the Fox administration? To understand why policymakers delayed the implementation of this economic measure, we propose the most influential behavioural theory of choice as our methodological framework, prospect theory (PT).

Our research suggests that political players tend to make their decisions according to their own interests and the context of the particular situation they are experiencing. Moreover, if these political players are "outsiders", their decisions can be strengthened by this condition. More specifically, politicians who are relatively unknown in the political arena tend to make important choices which are strengthened by people's support. Our research also suggests that only a severe economic-financial crisis in the MEI can trigger its privatisation. These alternative hypotheses rest on the robust psychological arguments of risk aversion in the domain of gains and risk seeking in the domain of losses of prospect theory developed by Kahneman and Tversky (1979). According to them, people tend to opt for risky choices when they are experiencing losses. On the other hand, people who have the chance to select from different alternatives of gains prefer to behave in a very cautious way. Another important feature of prospect theory is that people tend to frame their decisions around a "reference point".

We consider that PT offers an alternative perspective to analyse the policymakers' behaviour. The use of PT as the study's main methodological framework departs from

the evidence, which shows that traditional theories of choice, such as economic-structural, political-institutional and rational-choice theories, sometimes do not provide a satisfactory account of determined political phenomena (see Chapter 3). In this way, PT's features question whether expected utility offers an adequate theory of how people really make choices under situations of uncertainty and risk. We consider that PT recognises the valuable characteristics of rational choice models based on expected utility, but at the same time challenges their foundations.

Since rational choice theories have been playing a fundamental role in political science during the last thirty years, there has been a debate about the effectiveness of such theories for analysing countries' political dynamics. On the other hand, critics of PT consider that this theory has determined restrictions that limit its applicability in politics. For instance, they state that PT lacks a theory of frames, which makes it difficult for researchers to determine how people frame their choices. Moreover, the aggregation problem is another key criticism. However, scholars in the field of political science have solved these problems.

Our two PT models are based on the five complementary techniques developed by Mercer (2005a). In particular, these mechanisms provide a creative solution to the problem of the lack of a theory of frames in PT. These techniques allow the researcher to determine whether the decision-makers are in PT's domain of gains or losses. Mercer's five methods are: 1) the status quo as a reference point; 2) aspirations; 3) heuristics; 4) analogies; and 5) emotions¹⁴⁸. Moreover, the second model presented in this chapter considers the crisis argument developed by Weyland (2002), which states that adverse economic situations trigger market reforms.

We present two different models that apply prospect theory to explain the political dynamics in the MEI. Both models use documentary sources that help us to determine players' domains. However, in some cases, the domain can be a subjective assessment and therefore it is difficult to define it. Recall that one of the characteristics of PT is that it does not have a "unique way to operationalise" its application. Under these circumstances, McDermott (2001) states that we can use the "thermometer analogy" to solve this problem. "If it is a hundred degrees outside, you do not need to know a whole lot about a particular individual to assume that he is probably hot"

¹⁴⁸ In Chapter 3 we give a detailed discussion about the problems with PT and their solutions.

(McDermott 2001, p. 11). In other words, we can use incomplete information to indirectly determine people's domains.

In the first model, we use this thermometer analogy to determine players' domains. This means that the analysis employs a straightforward way of knowing how decision-makers frame their choices. Moreover, recall that another characteristic of PT is that it requires identifying people's domains but not the source of those domains. The model that answers the first research question has a dependent variable and different explanatory variables. The dependent variable can be the domain of gains or the domain of losses. The domain is defined by a number of different explanatory variables. These variables constitute the context of the situation or the events that the decision-makers use to frame their choices.

In this study, we use information from certain historical reviews and other discussions. More specifically, we employ information about the different key political and socio-economic events discussed in Chapter 5. Moreover, this information is complemented by other analyses from important scholars. The decision-makers involved in our study are the Institutional Revolutionary Party (PRI), the National Action Party (PAN), the Party of the Democratic Revolution (PRD), different presidents of Mexico, opposition leaders and the public (voters).

The analysis is divided into two main sections. The first section studies how specific factors deteriorated the PRI regime. In other words, it provides evidence of different key events and how players assimilated them during specific periods. In the second section, the previous analysis is used as a background to define how the players made important decisions, including the PAN's opposition to the government's electricity privatisation proposal. Our analysis mainly uses two techniques to define the players' domains: the status quo as the reference point and aspirations as the reference point.

It is important to indicate that before we answer the first research question, this chapter analyses the reform to the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act. We use two different approaches to explain this event in which President Salinas allowed partial participation by private investors in electricity generation. We explore the LSPEE reform from a political fragmentation perspective¹⁴⁹ and it is then complemented by prospect theory.

¹⁴⁹ This approach is explained in chapter 7.

Contrary to the first research question, the operationalisation of our second PT model is more detailed. In other words, it does not completely depend on McDermott's analogy and therefore expands the context of the variables that define the decision-makers' domains. The model for the second research question consists of two key sections. The first part develops six explanatory variables that capture the factors discussed by the decision-makers during the debate about the MEI's privatisation programme. In other words, they provide the documentary evidence that validate the decisions-makers' arguments about this policy. Moreover, the model attempts to determine the political players' domains in the value function of prospect theory. Consequently, we can define whether decision-makers take risky bets or behave in a risk-averse way.

These variables are related to two of the techniques developed by Mercer. Variables from one to four are connected to the method *status quo as reference point*, whereas variables five and six are connected to the technique *analogies as reference point*. The model is applied to the three main political parties in Mexico: The Institutional Revolutionary Party (PRI), the National Action Party (PAN) and the Party of the Democratic Revolution (PRD).

To determine each variable of the model we employed two different kinds of information sources. On one hand, we employ data from public pronouncements, press reports, etc. In particular, we use economic and financial information (e.g. balance sheets) from one of the two electric utilities: the Federal Electricity Commission (CFE). The reason we use information from only one utility is because CFE has much better databases, whereas most of the data from LyFC are incomplete and not well structured. Additionally, we did not obtain any response from the LyFC staff when we requested the company's financial information. Most of the CFE's financial data were found on its website¹⁵⁰.

Also, we used certain energy indicators from different periods (from 1980 to 2008); for instance, data on natural gas prices, electricity and oil prices, oil exports, oil revenues and non-oil revenues. The data were mainly obtained from the Mexican Petroleum Institute (IMP), the National Institute of Statistics and Geography (INEGI) and the Energy Regulatory Commission (ERC). The research uses information about

¹⁵⁰ www.cfe.gob.mx

California's electricity crisis and Argentina's energy crisis. In this case, we used analyses developed by scholars from the Cambridge-MIT Institute Electricity Project at the University of Cambridge. As part of the research project, I attended numerous seminars and lectures about competition and regulation in the international electricity market in this institution from 2005 to 2007.

The second source of information for the second model is based on face-to-face interviews. This kind of information represents a determinant factor for our research because it provides direct evidence from the main decision-makers involved in Mexico's energy agenda. Consequently, it strengthens the effectiveness of our PT model. In particular, we interviewed the heads of the Federal Electricity Commission (CFE), the Energy Regulatory Commission (ERC) and the Federal Competition Commission (FCC). Moreover, we interviewed the CFE's Director of Economic Analysis and a senator who was a member of the Senate's energy commission.

The interviews were carried out according to a protocol previously designed by the research student and his supervisors. The structure of the interviews allowed us to get very useful information from the decision-makers. For example, we structured general questions that let the interviewees analyse in depth the issues raised by the interviewer in order to obtain their complete ideas about the research problem. The objective of the questions was to discover the actors' positions on the electricity industry and the government's privatisation programme. Their arguments led us to understand how they framed their decisions and what aspects influenced them.

The second part of our PT model analyses how key leaders from Mexico's three main parties framed their choices. More specifically, the research evaluates how the explanatory variables influenced these players' perceptions. To develop this section, we mainly employed information from one of Mexico's leading newspapers, *La Jornada*. It is the only source of information that provides complete details of the actions, public pronouncements, behaviours, etc. of the political actors in the energy agenda. Consequently, it supplied an excellent amount of data for our model. It is important to highlight that in order for the analysis to be neutral we only used news reports and not editorial articles elaborated by *La Jornada's* columnists. In other words, our work is not influenced by the newspaper's editorial position.

As part of our research design, we contacted Jonathan Mercer¹⁵¹ from the University of Washington, Kurt Weyland¹⁵² from the University of Texas in Austin and Barbara Vis¹⁵³ from VU University Amsterdam for advice and comments about our research project. The explanatory variables are: financial conditions (EV₁); electricity tariffs (EV₂); MEI's current regulatory framework (EV₃); Mexico's oil bonanza (EV₄); California's electricity crisis (EV₅); and Argentina's Electricity Crisis (EV₆).

Explanatory variables 1, 2, 5 and 6 influenced the PRD decision-makers' positions. The PAN and the PRI were influenced by variables 1 and 3. It is important to indicate that we chose the interviewees (decision-makers) according to their relevant role in the energy debate from 2000 to 2005. For example, key economic advisors were the players that represented the PRD during the discussion of the MEI's privatisation programme. For the PAN, we considered the head of the Federal Electricity Commission (CFE) as one of its central decision-makers.

There are different political, economic and social sectors with certain interests that supported or opposed the MEI reform. We understand that by considering almost all the key sectors involved in this debate, our study can provide more detailed results. However, by including many factors, our research problem can become very complex to analyse. Consequently, we had to formulate an important assumption: we assume that all sectors of the economy are grouped and represented by the country's three main political parties.

6.3. CASE 1: WHY WAS PRESIDENT ZEDILLO UNABLE TO IMPLEMENT HIS ELECTRICITY PRIVATISATION PROPOSAL?

In this section, we offer the first PT analysis that attempts to explain the reasons behind the Zedillo administration's failure to implement its electricity privatisation project. As an introductory analysis, section 6.3.1 explores the factors that allowed President Carlos Salinas to reform the LSPEE – Electricity Act. It applies PT to discover how he framed his choices when he reformed this law. As we have previously stated, the main objective of this section is to understand the political dynamics of the first electricity privatisation proposal.

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6.3.1. The Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act

Absolute presidential power allowed Miguel de la Madrid (1982–1988) and Carlos Salinas (1988–1994) to easily implement this economic programme. As we observed in the previous chapter, the PRI is a political party that was structured by all the interest groups in the country. These groups unconditionally supported the presidents, who were the most important players in the political system. Even the private sector was subordinated to the presidential power. Private investors considered themselves to be part of the “PRI’s political army”. For instance, Emilio Azcárraga Milmo (1930–1997), who was the former owner of Televisa, part of the country’s television duopoly, publicly considered himself to be “a soldier of the PRI and a soldier of the President” (Meyer 2012). This statement clearly shows how the president’s power was stronger than that of the private sector elite.

The PRI regime reached its climax during Salinas’ administration. His government was one of the most powerful presidential periods in the history of Mexico. Moreover, he continued and strengthened the application of the neo-liberal agenda, which was implemented initially by President de la Madrid. Salinas sold a large number of SOEs because his privatisation strategy was successfully approved by all the political actors. There were three main reasons behind his success: the president’s excessive concentration of power, the lack of political competition and the Salinas administration’s technical skills. In other words, his government had the same advantages that all the previous PRI presidents used to rule the country. However, he had an additional advantage that his predecessors did not have: a strong technocratic structure.

There is a very important segment of the political economy literature that studies the connection between political power and the application of market reforms. This literature states that if a developing country’s political system is concentrated, there is a high probability to successfully apply the proposed economic policies (see Haggard and Kaufman 1995 and Nelson 1990). Conversely, if the political power is dispersed, there will be more incentives from the political opponents to delay or block the introduction of market reforms (Rodrik 1996). In the next chapter we offered a discussion of the political fragmentation perspective in Mexico.

We consider that the case of Salinas’ administration can be analysed under this theoretical framework. The country had a political system in which the president manipulated all the socio-economic structures, including the legislative power. Consequently, Congress was only seen as a ratifying mechanism which did not

participate in the decision-making process. The political opposition was not a problem for the PRI. Mexico's left-wing party, the Partido de la Revolución Democrática (PRD)¹⁵⁴ - the Party of Democratic Revolution – was only recently established and therefore it was not strongly positioned in the political system.

Although the Partido Acción Nacional (PAN) – the National Action Party – was founded at the end of the 1930s, it was still a weak opposition for the government of Carlos Salinas. The World Bank (1995, p. 221) states that the privatisations were “politically feasible in Mexico because reformers controlled the relevant policymaking entities and had the means to overcome resistance”. This confirms that our perspective adequately explains why Salinas' privatisation strategy could be approved.

What were the other “means” that facilitated the application of the government's neo-liberal policies? The PRI administrations used authoritarian mechanisms to protect the implementation of their market reforms. For instance, the regime imposed strict censorship of the printed media and there was absence of freedom of expression. Repression was also used to control political opposition. It is well known that during the government of Salinas, 500 PRD members disappeared or were murdered because they opposed the regime (Monsiváis 2008).

Another similar important case occurred when the Zapatista Army of National Liberation (EZLN) declared war against the Mexican government. The EZLN, which consisted mainly of rural indigenous people, opposed Salinas' North American Free Trade Agreement (NAFTA). According to the 1995 Amnesty International Annual Report, the Mexican army tortured and disappeared hundreds of Zapatista members. These two political repression cases are examples of how Salinas sent a clear message to those who were not aligned with the government: it served as a mechanism to induce fear in opponents who could put at risk the president's policies and therefore damage the political system's stability. For these reasons, the 2010 Nobel Prize Laureate in Literature, Mario Vargas Llosa, considered Mexico's political system as “the perfect dictatorship” (Vargas Llosa 1990).

¹⁵⁴ In May 1989, the PRD was founded by Cuauhtémoc Cárdenas (President Lázaro Cárdenas' son). It was formally established after Cárdenas lost the 1988 presidential elections against Salinas. The election results were severely questioned. The electoral fraud committed by the PRI has been well documented (Magaloni 2006).

Cuauhtémoc Cárdenas participated in the elections as the representative of a political organisation called the National Democratic Front.

Finally, the policy-makers who were part of the Salinas administration constituted a determinant factor in the privatisation process. The group of people that prepared and carried out the sale of the SOEs were mainly technocrats with foreign graduate degrees in economics. To adequately carry out his economic programme, Salinas had a team that understood the technical and administrative aspects of the privatisation process and guidelines from international financial institutions (IFIs). Williamson and Haggard (1994) and Bates and Krueger (1993) state that these “change teams” were very effective in facilitating the sale of the public companies.

Does the absolute presidential power explain the approval of the reform to the Ley del Servicio Público de Energía Eléctrica (LSPEE) – the Electricity Act – which allowed the partial participation of the private sector in the Mexican electricity market? In 1992, the Mexican Congress easily ratified the changes proposed by Carlos Salinas to the law. The political structure that approved part of Salinas’ neo-liberal agenda was also used to allow the IPPs to generate electricity in Mexico. During this period, the PRI controlled more than 60% of the Chamber of Deputies and more than 70% of the Chamber of Senators.

In which PT domain was President Salinas when he implemented his privatisation agenda, including the reform to the LSPEE? According to Mercer (2005a) and Taliaferro (2004), if a country’s position is in relative decline, then an aspiration becomes a reference point. During the De la Madrid administration, the country experienced one of the worst economic crises. For instance, oil prices collapsed, the inflation rate was more than 150% and there was an unpayable foreign debt of US\$100 billion; these were some of the factors that negatively affected the economy. As we have stated, De la Madrid implemented neo-liberal market policies to control the crisis.

When President Salinas took office, he continued with these adjustment policies. Under these conditions, Salinas’ reference point was an aspiration. In particular, he had the objective to continue with De la Madrid’s neo-liberal agenda. It was very clear that his aspiration was to carry on with the Washington Consensus policies designed by the International Monetary Fund (IMF) and the World Bank. The Salinas administration’s objective was to position Mexico as one of the leading economies in Latin America. In terms of the electricity sector, the government did not have a detailed plan to privatise the industry. Salinas mainly focused on selling other SOEs.

In Latin America, there were different reasons that led governments to carry out structural changes in their electricity sectors. For instance, some economies changed their electricity systems because they were experiencing adverse economic conditions. Other countries implemented these market reforms because they were inspired by the neo-liberal experiments applied in developed economies. Moreover, the international financial institutions (IFIs) played a key role in persuading developing countries to apply these measures. The IFIs offered to renegotiate countries' foreign debts subject to the application of the energy market policies of the Washington Consensus. Under these conditions, we consider that Salinas knew that countries were adopting these market reforms and decided to reform the LSPEE.

The reform to the LSPEE was a very risky decision. There was not enough information about the impacts of these market policies on economies. Moreover, Mexico did not have adequate institutions to regulate private investors. Although the Energy Regulatory Commission was created in 1993 (one year later than the LSPEE reform), it lacked the legal instruments to control private companies. In other words, the LSPEE represented a risky choice because there was uncertainty about the effects of the reform on the Mexican economy. Our analysis of the IPPs in Chapter 5 confirms that the choice made by Salinas was extremely risky. Private sector participation in electricity generation has been very costly for the country's public finances. Inadequate planning and corrupt practices are the main reasons behind this serious problem. In conclusion, Salinas could carry out the LSPEE reform because he still had the support of the PRI's hegemonic power. Salinas' aspiration put him in the domain of losses and therefore he took a risky choice.

6.3.2. President Zedillo's Failure to Implement his Electricity Privatisation Proposal

The first part of this section analyses the key historical factors that influenced the behaviour of Mexican society. It provides the general context of the PRI regime's deterioration during different periods. The following section then studies how the majority of the citizens framed their choices and how this situation influenced the decisions made by the PAN. In particular, we explain under the PT perspective why the PAN did not support the government's privatisation project.

6.3.2.1. The Deterioration of the PRI Regime and the Perception of a Domain of Losses

During the PRI regime, people were living under a political structure that controlled all the institutions in the country. Consequently, it was impossible for society to participate in the decision-making process. For instance, and as we observed in Chapter 5, the PRI had many corporate groups that were used to rule the country. The PRI's corporatist structure represented all the country's socio-economic groups (workers, peasants, etc.) and transferred their electoral participation to a clientelistic network, which was employed to benefit the political elite. This means that the decisions were only made by these organisations' leaders. In this way, people's socio-economic demands were subordinated to such groups' political interests.

One of the first popular reactions against the PRI regime was the 1968 Tlatelolco student massacre. Students from public universities carried out street protests against President Gustavo Díaz Ordaz (1964–1970). On 2nd October 1968, the government ordered the military to open fire on the students, who were congregated in the Plaza de las Tres Culturas – Square of the Three Cultures – within the Tlatelolco neighbourhood. The military repression of the students served as a mechanism to control people's aspirations. Society aspired to a change in the political system to end the PRI governments' authoritarianism.

People took a risk-seeking decision, which consisted of carrying out severe street demonstrations to put the regime under pressure. It was a risky choice because people knew that the government could respond aggressively. However, the government's violent reaction reframed people's reference point. The student massacre induced fear into society and therefore they had to accept their status quo (SQ). In other words, people moved from opposing the regime to accepting it again. The feeling of injustice led students to take an extremely risky choice that cost many human lives.

On the other hand, the government was also in the domain of losses. The demand for more democracy and the fact that the 1968 Olympic Games were about to start "led the government to choose the hardline once and for all" (Meyer 2008). The PRI wanted to make a good impression with the Olympics. "The whole world would have its eyes on Mexico, but behind the screen of the Olympics buildings there would remain extreme poverty, the stratification of a society that was hostile to those usually forgotten, the cruelty of a government willing to pretend anything" (Poniatowska 2008).

According to Loaeza (2005), President Díaz Ordaz was a person who had a very impulsive personality. Consequently, he was willing to do anything in order to protect his regime. Loaeza states that Díaz Ordaz felt that the American authorities considered that the Mexican government had serious political instability problems. The Minister of the Interior, Luis Echeverría, also played a key role in influencing Díaz Ordaz's behaviour. Loaeza indicates that there are unclassified documents from the Federal Bureau of Investigation (FBI) and the Central Intelligence Agency (CIA) that confirm that Echeverría was strongly connected to the American government.

This situation tells us that President Díaz Ordaz was under enormous pressure. He wanted to maintain the PRI government's status quo (SQ), and at the same time there were external forces that urged him to control the social crisis. This scenario put the Mexican president deeper into the domain of losses and therefore he opted for the risky choice. The tragedy weighed on the key decision-makers (Díaz Ordaz and Echeverría) involved in the planning and execution of the massacre. On the other hand, people were not able to modify the political system, but this situation strengthened people's perception about the political system's authoritarianism.

Another key event was the 1988 presidential election, in which there was evidence that showed how the PRI committed massive electoral fraud to favour Carlos Salinas (Meyer 1997). Consequently, the left-wing candidate Cuauhtémoc Cárdenas rejected the election's results and argued that it had to be annulled. However, Salinas was declared Mexico's new president. Cárdenas founded the Party of the Democratic Revolution (PRD) in order to oppose the PRI government and to unify the left in the country.

In these elections, Mexicans saw themselves in the domain of losses once more. The inadequate operation of the economy under the De la Madrid administration, the 1982 debt crisis and the application of neo-liberal policies deteriorated people's socio-economic conditions. Cuauhtémoc Cárdenas was considered to be an alternative and risky option. People saw him as a risky choice because they could not predict their future behaviour. He was an active political member of the PRI but decided to leave it to compete against Salinas. He was the son of President Lázaro Cárdenas and therefore this condition was a positive factor that strengthened people's aspirations. Moreover, his political plan had the objective of improving the country's socio-economic conditions and stopping the PRI's hegemony. These factors were seen by the majority

of Mexicans as an opportunity to aspire to a much better SQ, but they could not obtain it.

We consider that the PRI regime showed its last signs of weakness in the last year of Salinas' presidency and during the entire Zedillo administration. There were different key factors that contributed to the decline of the political system. Chapter 5 and the previous section offered information about such elements. For instance, in 1994 the Zapatista movement declared war against the Mexican government. In the same year, the PRI's presidential candidate Luis Donaldo Colosio and the PRI's secretary-general José Francisco Ruíz Massieu were assassinated. These events affected the financial markets and therefore led to capital outflows. There then followed a strong devaluation of the Mexican peso.

The peso devaluation was followed by a financial crisis. It erupted three weeks after President Ernesto Zedillo (1994–2000) took office and two years after the privatisation of the banking sector. The crisis was attributed mainly to the inadequate privatisation of this sector. The banks collapsed and the government bailed them out of the crisis, which was considered by many socio-economic groups as an illegal and very costly action. The cost of the financial rescue was US\$125 billion, which also paid all the bad loans used to finance the PRI's 1994 political campaign. The high interest rates strongly affected people's welfare because they were unable to pay their debts. As a result, the debtors carried out many street protests to try to persuade the government to reduce their debt burdens. Under these conditions, the American government and the International Monetary Fund (IMF) provided a credit line of more than US\$67 billion to Mexico to stabilise the economy (BBC Mundo 2009).

There were other corruption scandals in Mexico's privatisation programme. It is well documented that President Salinas' brother, Raúl Salinas de Gortari, participated in privatisations and government concessions. One of the most important scandals was the privatisation of the state television station, Instituto Mexicano de la Televisión (IMEVISION). The current owner of the privatised company, Raúl Salinas Pliego, obtained a loan from the president's brother at a low interest rate (Gordon 2009). The loan was paid by using the privatised company's profits. Raúl Salinas de Gortari was accused of illegal enrichment and money laundering. In February 1995, he was sent to jail but was released in 2005. Although there was strong evidence against him, he was declared innocent of such offences.

In line with the predictions of prospect theory, we can state that all these political and economic factors pushed a large proportion of citizens into the domain of losses. People were convinced that the PRI was unable to continue to rule the country. During the 1995 financial crisis, President Zedillo's popularity was 43% (ADN Político 2012), which is very low. According to Weyland (2002), opinion polls can also be used to determine the citizens' domain.

6.3.2.2. The Rise of the Political Outsiders and the Reasons that Led the PAN to not Support President Zedillo's Electricity Privatisation Proposal

The decline of Mexico's political system and the deterioration of people's welfare (described in the above sections) led an interest group to take the opportunity to participate in the political dynamics. In particular, a group of people led by Vicente Fox aspired to carry out a drastic elite renovation. We consider that the emergence of these political outsiders resulted from risk seeking in the domain of losses. In other words, since people were suffering from the PRI's authoritarianism, Fox and his group saw that they had an enormous chance to win the presidential elections. People were in the domain of losses and therefore they (the outsiders) knew that society was willing to take a significant risk.

We consider that they were outsiders for one main reason: they did not directly emerge from the PAN. They came from a group of businessmen that convinced other national and foreign investors to participate in this political game. This interest group was called Amigos de Fox (Fox's Friends), which was structured mainly by people who financially supported Fox's campaign. It was coordinated by his closest friends who were establishing the contacts with different industrial sectors and were in charge of designing the campaign's strategy. The strategy was based mainly on a strong manipulation of people's reference points. Prospect theory calls this phenomenon "strategic framing" (see Chapter 3).

One of the key elements of Fox's political campaign was based mainly on his particular personality. He was a folkloric politician who mocked his adversaries (Meyer 2003). People really liked this behaviour because they felt that he was challenging traditional politics. Another aspect of his strategic framing had the objective to make people believe that Mexico required a "real political change". The plan¹⁵⁵ consisted of creating an adequate political environment in which voters could have hope in only one

¹⁵⁵ Amigos de Fox designed Vicente Fox's electoral strategy, which was called the Millennium Plan. (Granados-Chapa 2000).

candidate (Granados-Chapa 2003). The PAN and Amigos de Fox presented him as the only opposition politician able to defeat the PRI, a typical Mexican rancher who “promised to kick the PRI out of Los Pinos” (Aguayo 2002; Granados-Chapa 2000).

The most important and interesting element in Fox’s campaign programme was his economic platform. He publicly offered to modify the way the economy operated. However, his economic strategy was extremely similar to Zedillo’s economic policy (Nadal 2000). Consequently, he proposed the identical project offered by the incumbent administration’s candidate. For instance, he offered to continue with the application of different neo-liberal policies, including the complete liberalisation of the electricity industry, which could not be implemented during the Zedillo administration. In other words, Fox was going to use the same economic policies that were strongly criticised by the majority of people. This demonstrates that the PAN was not willing to leave the status quo.

All these strategies generated extraordinary results. From 1998¹⁵⁶ to 2000, Fox’s popularity reached 70% (Parametría 2006). This strong support from the people put him in the domain of gains. At the same time, this positive scenario allowed him to view the PRI’s political system as unacceptable. As a result, Vicente Fox started to offer very ambitious political proposals, which strongly increased people’s expectations. For example, he promised to end the Zapatista uprising in “fifteen minutes” and to completely end the corruption in the country.

Mexicans had three political options. Francisco Labastida was the candidate of the incumbent government. Vicente Fox was the PAN candidate, who was the outsider of the elections and the riskiest option. The third option was Cuauhtémoc Cárdenas, who was the PRD candidate. He constituted a realistic alternative that offered a political change at lower risk than Vicente Fox. Why was Fox a risky option? According to the factors we have discussed, Fox was a risky choice because he had a vague, unclear and contradictory political platform. He offered little indication of a new economic project for solving the complex situation in Mexico. Voters see incumbents as “less risky than the challengers who are unknown and whose proposals could drastically modify the current trends, for better or for worse” (Quattrone and Tversky 1988, p. 724).

¹⁵⁶ In July 1998, Fox publicly announced that he was going to participate in the 2000 presidential elections.

Risk seeking in the domain of losses induced Mexicans to reject the incumbent government's candidate and the left-wing candidate. In other words, the combination of all the negative events we have discussed and the manipulation of people's reference points led 45% of the people (El Universal 2000) to choose Fox as the next president of Mexico. Labastida lost the elections because he represented the continuation of the PRI regime. Although Cárdenas offered a promising option with much lower risk than Fox, voters decided to ignore this alternative.

Why did the PAN not support the PRI's electricity privatisation programme? The above analysis leads us to state that the PAN members rejected cooperating with the PRI because they saw themselves in the domain of gains and therefore they were risk averse. In 1999, Zedillo presented his electricity privatisation project and expected to have the support of the PAN in congress. However, the PAN knew that a large proportion of citizens were in the domain of losses and were willing to opt for a newcomer. By not supporting the PRI, the PAN obtained the opportunity to develop and present its own privatisation strategy for the next presidential term. The president of the energy commission in the Chamber of Deputies, Francisco Salazar, stated "President Zedillo's electricity privatisation strategy was postponed because we were convinced that Fox was about to become the next president of Mexico. We had the chance to present our own proposal" (Interview with Salazar 2005).

If the majority of the people had not seen themselves in the domain of losses, the PAN would not have received political support from such a significant portion of the citizenry to win the elections. It also implies that the PAN would have cooperated with the government to approve the privatisation. This is because it was going to be difficult for the PAN to obtain the presidency and therefore its best choice was to support the PRI. The PAN always supported the very important economic policies that President Zedillo proposed, including the approval of the costly bailout of the banking sector and the value added tax (VAT) rise from 10% to 15%. This demonstrates that the PAN could be able to support the electricity privatisation strategy but its position in the domain of gains gave it the luxury to postpone this project.

6.4. CASE 2: WHY WAS PRESIDENT FOX UNABLE TO PRIVATISE THE ELECTRICITY INDUSTRY?

6.4.1. Analysis of the Explanatory Variables

In this section we develop the six variables of our second model. In particular, we analyse the key information that is connected to the two techniques used by the decision-makers during the electricity privatisation debate: the status quo as the reference point and analogies as the reference point. The section studies the financial information of the CFE and other important factors that are strongly connected with the MEI performance; for instance, the natural gas price fluctuations and the interviews with the key decision-makers.

6.4.1.1. The MEI's Performance: the Status Quo as the Reference Point

*(i) Explanatory Variable 1 (EV1): financial conditions
Balance Sheets (1999–2006)*

The current financial structure of the MEI was the first and most notable element perceived by the key decision-makers. The structure of the CFE's assets is as follows: from 1999 to 2006, the value of total assets increased from US\$43.0 billion to US\$66.0 billion, which represents an average annual growth rate of 6%. The CFE's current assets rose from US\$3.0 billion to US\$7.1 billion, which constitutes an average annual growth rate of 11%. The physical investment's value increased from US\$38.0 billion to US\$56.0 billion at a growth rate of 5% per year. Intangible assets moved from US\$0.5 billion to US\$1.0 billion at a growth rate of 15% per year.

During the same period, the company's liabilities had the following behaviour: current liabilities increased from US\$2.0 billion to US\$3.9 billion at an average annual rate of 8%; long-term liabilities moved from US\$3.0 billion to US\$6.9 billion at an annual growth rate of 11%; the retirement reserve fund increased from US\$4.0 billion to US\$19.1 billion at an annual rate of 22%; and the total equities increased from US\$32.0 billion to US\$35.2 billion.

**Table 6.1: CFE's balance sheets for 2006 and 2005
(Billion USD)**

| Elements | 2006 | | 2005 | |
|--|-------|-----|-------|-----|
| | value | (%) | value | (%) |
| Assets | | | | |
| Total current assets | 7.14 | 11 | 6.14 | 9.6 |
| Long-term employee loans | 0.27 | 0.4 | 0.27 | 0.4 |
| Plants, Infrastructure, equipment, net | 56.0 | 85 | 55.57 | 87 |
| Financial instruments | 0.51 | 0.7 | 0.55 | 1 |
| Other assets | 0.58 | 0.8 | 0.53 | 1 |
| Unamortised intangible assets | 1.40 | 2 | 0.52 | 1 |
| Liabilities | | | | |
| Total current liabilities | 3.96 | 6 | 4.14 | 6 |
| Long-term liabilities | 6.96 | 10 | 7.05 | 11 |
| Financial instruments | 0.61 | 1 | 0.61 | 1 |
| Employee retirement obligations | 19.18 | 29 | 17.32 | 27 |
| Equity | 35.21 | 53 | 34.45 | 54 |
| Assets = Liabilities | 65.95 | | 63.59 | |

Source: Elaborated with information from CFE-Estados Financieros Dictaminados 2005–2006

From Table 6.1 we can report the following analysis:

1. The CFE's physical investment represented 85% of total assets.
2. The relationship, total liabilities/liabilities and equity indicates that the CFE owns resources that account for just 54% of its total resources.
3. Dividing current assets over current liabilities, we obtain a result of US\$1.8, which indicates that for each dollar in current liabilities the company has \$1.8 to pay towards this debt. This represented a good advantage for the CFE, because it has eighty cents extra to compensate each dollar in current liabilities. In other words, the company has a strong liquidity position to meet financial contingencies within one year.
4. Similarly, if we divide the physical investment over long-term liabilities, we find that the CFE has US\$8 to pay one dollar from long-term liabilities. This means that in the event of a long-term financial crisis, the utility has \$8 to respond for each dollar in long-term liabilities.
5. The result of dividing total assets over total liabilities is US\$2. This value indicates that for each dollar of total liabilities, the CFE has two dollars to compensate it. In the event of an emergency, the company has a strong contingency fund to face it.

6. However, the company has a weak financial independence of 53%. In other words, for each dollar the firm has 53 cents belonging to it. This percentage is obtained by dividing its equity over its total resources.

Profit and Loss Statements (1999–2006)

From 1999 to 2006, the profit and loss statements show that revenue from electricity sales increased from US\$7.5 billion to US\$19.42 billion at an average annual growth rate of 14%. The operating expenses increased from US\$6.87 billion to US\$19.16 billion. In particular, in 2006 depreciations corresponded to 11%, the yearly employee retirement obligations decreased 11% and exploitations and administrative expenses declined 76% and 2% respectively. The operating expense growth was mainly caused by increases in exploitation and retirement obligations.

During the same period, the financial cost decreased from US\$0.42 billion to US\$0.33 billion at an annual rate of 3%. In particular, in 2006 the operating profit reached US\$0.26 billion and non-cash transfers from the federal government to supplement deficient rates increased from US\$2.92 billion to US\$4.76 billion. In this case, subsidies were greater than duties, leading to a shortfall of duties over non-cash transfers of US\$0.11 billion. Similarly, from 1999 to 2006, net profit decreased from US\$0.84 billion to US\$0.19 billion.

**Table 6.2: CFE's profit and loss statements for 2006 and 2005
(Billion USD)**

| Elements | 2006 | 2005 |
|---|--------|--------|
| Revenue from electricity sales | 19.42 | 17.53 |
| Costs and expenses: | | |
| Operating costs | 14.59 | 14.21 |
| Depreciation | 2.07 | 2.08 |
| Administrative expenses | 0.42 | 0.36 |
| Actuarial costs of employee retirement obligations | 2.06 | 1.79 |
| Operating loss (or profit) | 0.26 | (0.93) |
| Other income (expenses), net | 0.33 | 0.13 |
| Net comprehensive financing cost: | | |
| Interest expense, net | (0.42) | (0.49) |
| Foreign exchange loss, net | (0.10) | 0.33 |
| Monetary position gain | 0.19 | 0.20 |
| Income tax on distributable remnant | (0.80) | (0.75) |
| Loss before duties and transfers | 179.51 | (1.09) |
| Duties ¹⁵⁷ | (4.75) | (4.82) |
| Non-cash transfers from the government to supplement deficient rates ¹⁵⁸ | 4.76 | 6.42 |
| Shortfall of duties over non-cash transfers from the government to supplement deficient rates | 0.11 | 1.59 |
| Income (loss) before extraordinary item | 0.19 | 0.50 |
| Extraordinary item | - | (0.38) |
| Net loss | 0.19 | 0.46 |

Source: Elaborated with information from CFE-Estados Financieros Dictaminados 2005-2006

From Table 6.2, we can report the following analysis:

¹⁵⁷ "In accordance with Article 46 of the Mexican Electric Utility Public Service Law, effective December 23, 1992, CFE is required to pay a fee to the federal government for the assets it uses to render electric utility public service" (Deloitte, 2007, p. 12).

¹⁵⁸ "This item refers to resources that the federal government grants to users of the electric power service through CFE by applying by applying subsidized rates for energy sales. A significant part of these transfers is treated as non-cash transactions, because under the current Mexican Electric Power Public Service Law such transactions are credited against the duties payable by the entity. During 2006, CFE recorded only virtual transfers. These transfers are credited to results of the year in which they are presented and are shown in the statements of operations" (Deloitte, 2007, p. 12).

1. The accounts receivable represent 14% of total revenue from electricity sales. According to data from the company, we can state that it is a reasonable level, because this percentage corresponds to more than a month of billing.
2. Total revenue represents 26% of the value of physical investments, which can be considered a good level. However, if we divide total revenue minus operating expenses over total revenue, the result obtained is a loss of -6%. This negative result is caused by the huge amount of government non-cash transfers (US\$4.76 billion), which represents 24% of total revenue from electricity revenue. Since tariffs are subsidised, it is correct to expect a low level of profitability.
3. The administrative expenses and employee retirement obligations represent 2% and 11% of total operating costs respectively. Compared to exploitation costs of 76%, their levels can be considered as stable. Although the employee retirement obligations have been increasing at an annual rate of 18% since 1999, they do not represent a problem for the company because of its adequate liquidity position.
4. Income tax on the distributable remnant has been increasing at a rate of 16%, reaching US\$0.80 billion in 2006. It is not a problem for the company because it represents 0.4% of total revenue.
5. Another key element that the data show is that from 1999 to 2006, the amount of monetary resources used to pay interest has been increasing moderately. However, it does not negatively affect the company. This indicates that the CFE still has a long-term debt and it has not required more financing from external sources. Also, it shows that the utility has been financing its investments with its own resources during these seven years. The current value of the company's interests represents only 2% of total revenue.
6. If we divide the depreciation of the physical investment over physical investment, it is observed that the physical investment (e.g. plants, generators, etc.) depreciates at an average annual rate of 4%. This guarantees that under the current conditions, the CFE's installed capacity can continue to generate electricity for the next 17.3 years.

The analysis we carried out shows that since 1999, the CFE has been operating under normal financial conditions. In other words, the company's financial structure allows it to guarantee the country electricity in the short and long-term. Even the employee retirement obligations, which are considerably high, do not represent an important problem for the company, assuming current conditions continue.

Our study coincides with the information published by the Congress Federal Audit Office – Auditoría Federal de la Federación (ASF). The report “Análisis al Informe del Resultado de la Revisión y Fiscalización Superior 2002” states that the MEI has a good financial structure. Consequently, it does not require private investment to carry out its operations. Moreover, the analysis considers that the employee retirement obligations are not a problem for it in the short or long-term.

(ii) Explanatory Variable 2 (EV2): electricity tariffs

The tariff structure is another element that key political leaders consider to be an important subject surrounding the MEI and its reform. The MEI tariffs are high and, according to energy experts, this is due to the current private investor participation in electricity generation, particularly investors operating under the Independent Power Producers (IPPs) scheme. According to the Energy Regulatory Commission, ERC (2005), there are 271 permits for individuals to generate electricity; from this total, 21 contracts are for independent producers. Such IPPs generate 39% of the total electricity produced in the economy (see Chapter 5).

According to a report published by Observatorio Ciudadano de la Energía OCE (2005), which encompasses policymakers, scholars and former and current CFE executives, IPPs have been increasing the MEI costs, leading to higher electricity tariffs. For instance, they consider that in the last six years, the real average price of a kilowatt hour (kWh) has increased by around 37%. In 2000 (when the first IPP just started its operations), electricity prices in Mexico were 8% cheaper than in the US. However, in 2005, Mexican tariffs (average) were 15% higher than American tariffs.

One of the key factors behind the higher electricity prices is natural gas (NG). IPPs need it to generate electricity by using combined cycle plants. At the moment, Mexico produces no more than 5 billion cubic feet per day (Bcfd) of natural gas, and since 2000 this trend has not changed. The lack of investment in infrastructure has dramatically increased natural gas (NG) imports (see Figure 6.3).

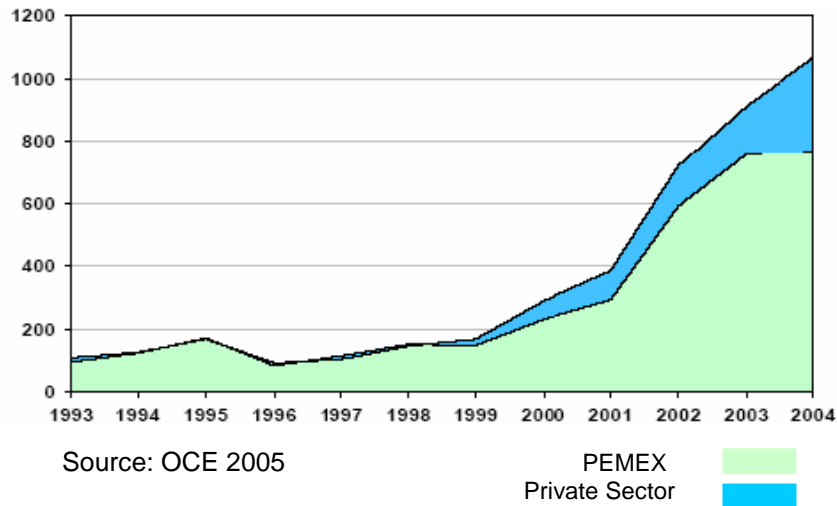
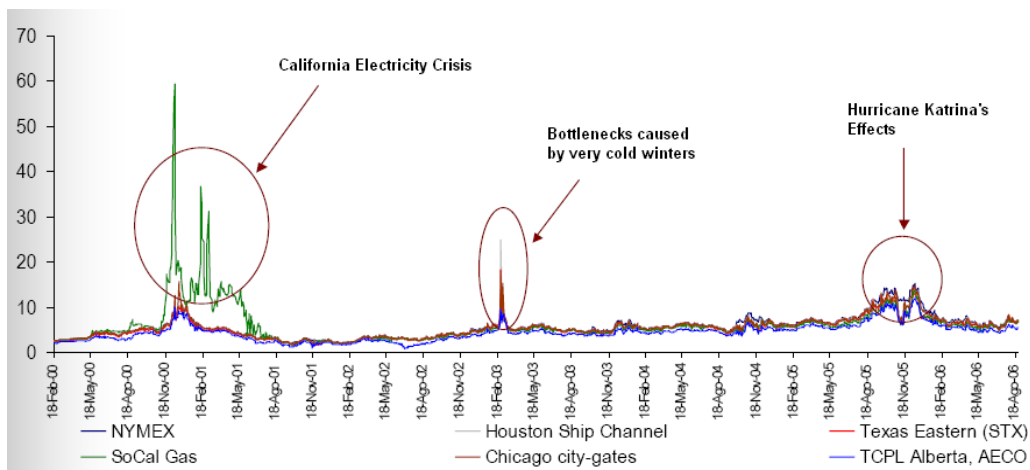


Figure 6.3: Natural gas imports in Mexico (Millions of Cubic Feet per Day)

According to Salazar (2004), the cumulative consumption of natural gas from 2005 to 2012 for electricity generation is 40% of the total national supply. The rest of the demand is distributed in the following sectors: Petróleos Mexicanos, PEMEX, (Mexico's state-owned oil company) 35%, industry 22%, residential 2%, services 1% and transport sector 0.1%. The OCE's report states that NG prices (national and import prices) are extremely unstable and therefore tend to increase due to any external shock.

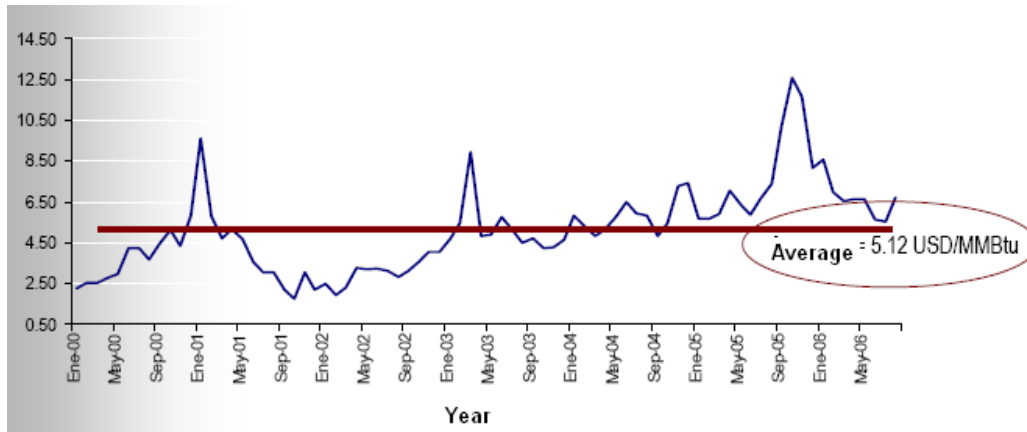


Source: ERC 2006
MMBtu = Million of British Thermal Units

Figure 6.4: Effects of external shocks on natural gas prices (USD/MMBTU)

Figure 6.4 shows how external shocks have affected different energy variables. For instance, we can see how prices of the Southern California Gas Company (SoCal)

were considerably affected by the 2000 California electricity crisis. The crisis had a stronger effect on NG prices than in the New York Mercantile Exchange (NYMEX), the world's largest trading forum for energy. In 2005, NG prices increased 54% more than fuel oil compared to 2004 prices (OCE 2005).



Source: ERC 2006
MMBTU= Million of British Thermal Units

Figure 6.5: Fluctuations in the American natural gas market's: TETCO South Texas (USD/MMBTU)

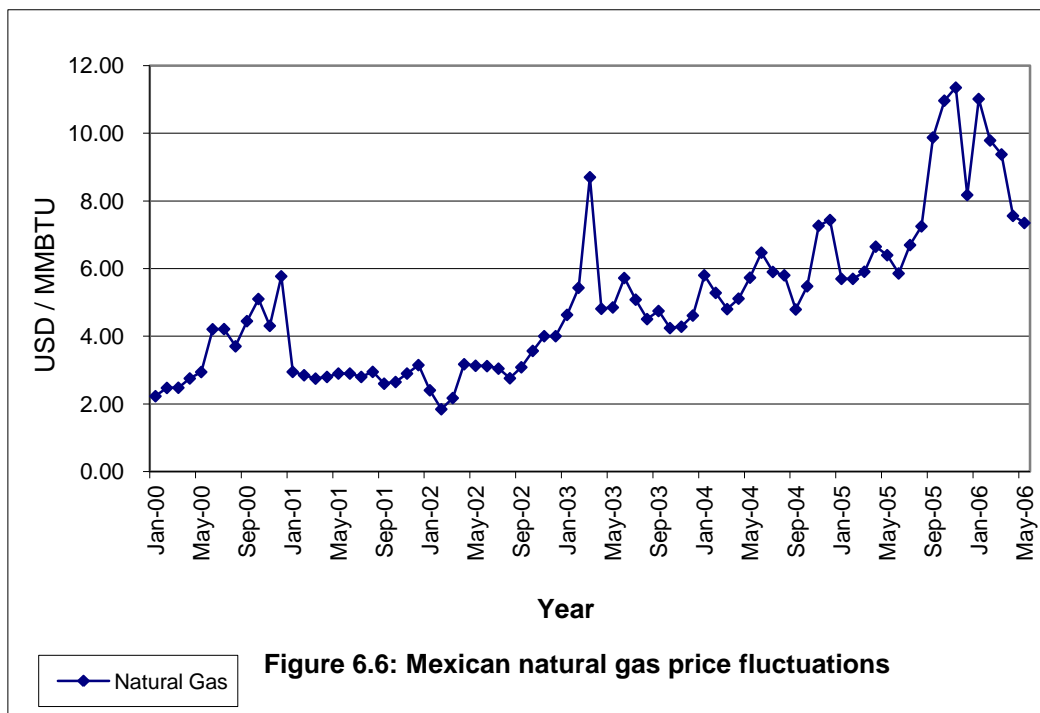
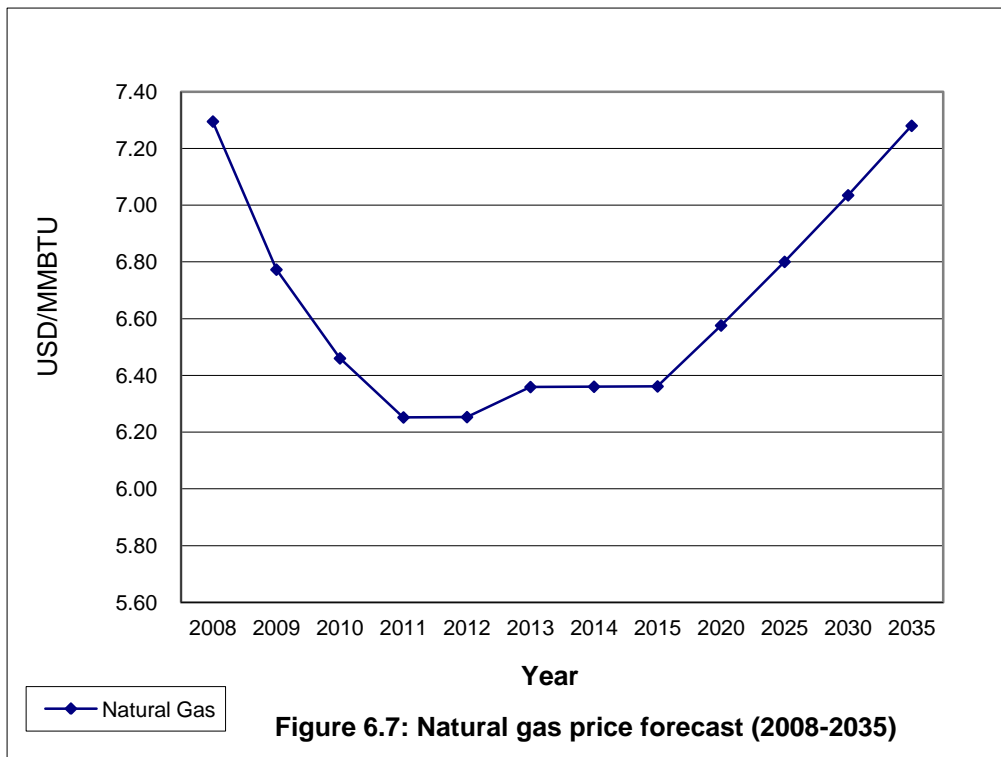


Figure 6.6: Mexican natural gas price fluctuations

Source: Own projections with data from the Mexican Petroleum Institute (IMP)

Mexican NG prices are high because they are mainly based on NG price fluctuations from the South of Texas (ERC 2006). In particular, these prices are defined by the Houston Ship Channel (e.g. TETCO)¹⁵⁹. According to ERC (2006), one of the advantages of such a price structure is to prevent Mexico from entering into conflicts with its main commercial partner, the US. Also, it promotes the rationalisation of energy consumption. On the other hand, one of its disadvantages is that it transfers the negative fluctuations of the American market onto Mexican consumers. NG import prices are not regulated and are completely determined by the American market. Figure 6.5 shows TETCO's price movements from 2000 to May 2006, and Figure 6.6 shows the Mexican NG price fluctuations during the same period. Both price variations follow a similar trend.



Source: Own projections with data from the IMP.

According to information from the Mexican Petroleum Institute (IMP), NG prices are expected to be high in the long term. More specifically, they could fluctuate at a level above 6.20 USD/MMBTU. This means that NG prices will continue to be at levels reached during 2005, which is high according to energy experts (see Figure 6.7).

¹⁵⁹ TETCO is a San Antonio company which deals with the distribution of petrochemicals.

For these reasons, analysts consider that electricity generation should not be focused primarily on combined cycle plants. They suggest that the CFE should take advantage of their steam-electric power plants based on cheap fuel oil. Moreover, they state that since 2000, the CFE has not been achieving the installed capacity of their plants. This situation increased electricity costs to US\$280 million in 2005. Similarly, if the CFE had used their coal-powered plants instead of opting for the combined cycle generators, it would have saved US\$650 million in the same year (OCE 2005).

Experts consider that energy expansion projects were not adequately analysed. For instance, the project amortisation of some IPP contracts granted to Iberdrola had a discount rate of 12.5% per year. This is double what the CFE would have obtained from the international financial market. In other words, the international market would have been a better option than receiving financial support from such contractors. If the government had carried out the projects under a direct investment programme (with the international financial market), it would have saved US\$280 billion¹⁶⁰. Moreover, the international unitary cost of combined cycle plants is \$500 per installed kilowatt, whereas the Mexican IPP programme's unitary costs are 20% higher¹⁶¹. This situation is generating considerable economic losses for the public finances. For instance, for the 8,251 installed megawatts at December 2005, the CFE lost US\$930 million.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

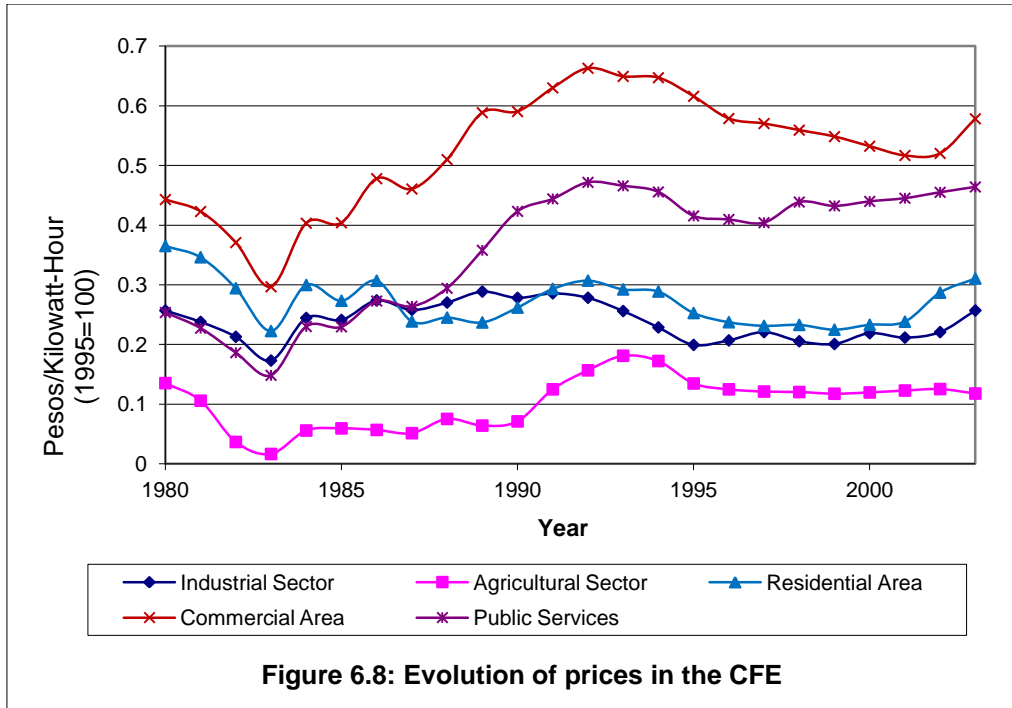


Figure 6.8: Evolution of prices in the CFE

Source: Own projections with data from INEGI and the President’s Report 2006

Figure 6.8 shows the evolution of the CFE’s average prices. We can see that the commercial sector has the highest electricity tariffs, followed by public service tariffs. We can observe how prices start to increase after 2000, when IPPs began to participate in electricity generation. Figure 6.9 shows the evolution of LyFC’s tariffs, which cover the states of Puebla, Hidalgo, Morelos, Estado de México and Mexico City.

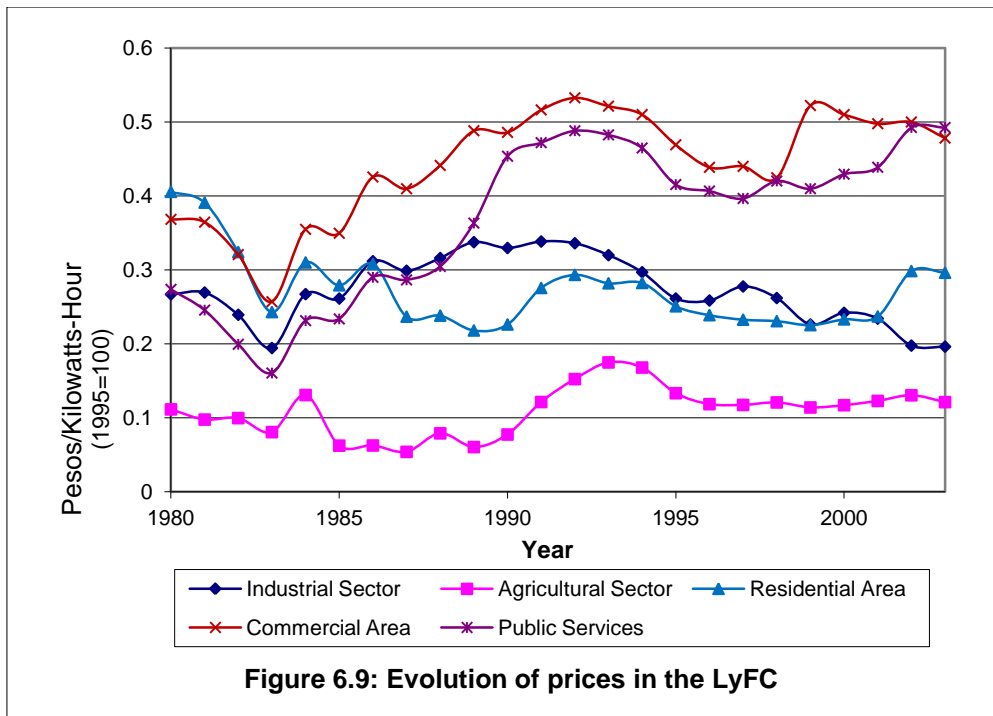


Figure 6.9: Evolution of prices in the LyFC

Source: Own projections with data from INEGI and the President's Report 2006

Finally, it is important to state that the Ministry of Finance and the Energy Regulatory Commission (ERC) form a committee to define the MEI tariffs (WEC 1998). By considering industry costs, hydrocarbon prices and inflation, these public institutions determine the tariff levels each month. The government has not published the method of setting electricity prices and it remains confidential.

In 2005, ERC carried out a detailed analysis of the utilities' real cost structure. However, and according to Reforma (2005), ERC has declared that the results of the study will be kept confidential for fifteen years. It is confidential because it determines why consumers pay high electricity prices and why they are not competitive compared to international levels. Also, it provides a new proposal for tariff structure, which recommends that current electricity prices need to be modified.

(iii) Explanatory Variable 3 (EV3): the MEI's current regulatory framework

What are the current conditions of the MEI's regulatory framework? This section presents direct quotations from the people responsible for Mexico's energy policy. Recall that for our PT model, this kind of information is extremely important to directly know how people choose their domains. According to interviews carried out during our fieldwork, Mexico does not have adequate conditions to regulate the current private

participation in the electricity sector. The position of the main actors in this situation is as follows:

Francisco Salazar

(The former President of the Chamber of Deputies' Energy Commission 2003–2005 and the current president of the Energy Regulatory Commission)

He stated that: “the economy does not have an adequate regulatory body that can guarantee the privatisation’s success. In particular, CFE regulates itself, the Energy Regulatory Commission (ERC) lacks power, and the current regulatory framework must be correctly re-designed since the independent power producers (IPPs) regulate themselves. What is more, their contracts give them too much authority.”

“The electricity demand did not increase as the federal government expected because of the lack of a strong economic growth.”

Alfredo Elías-Ayúb

(The CFE’s Executive Director since 1999)

“Regulation does not exist. In other words, Mexico does not have a regulatory framework nor the institutions that can guarantee the sector’s adequate operation.”

Eduardo Pérez-Motta

(Federal Competition Commission’s President)

“The Federal Competition Commission (FCC) has not been participating in the energy agenda. We have not been invited by the Ministry of Energy to express our position ... electricity concessions have not been rigorously studied. In fact, projects have not been correctly licensed.”

“Electricity producers must be separated from CFE. In other words, CFE must not work as a regulator ... contracts allow producers to self-regulate; however, the FCC is unable to intervene in this failure. What is more, the ERC and the FCC are not coordinated to work together in energy issues.”

“For Mexican authorities, regulation is not considered an important issue ... the FCC is not strong. So authorities should give it more powers and an adequate regulatory framework.”

(iv) Explanatory Variable 4 (EV4): Mexico’s oil bonanza

Contrary to the negative effects of high NG prices on the electricity tariffs, Mexico’s oil industry has been considered the key determinant of the economy’s growth. In particular, oil export revenues have been the main financing source of all the government’s socio-economic programmes, including the energy sector.

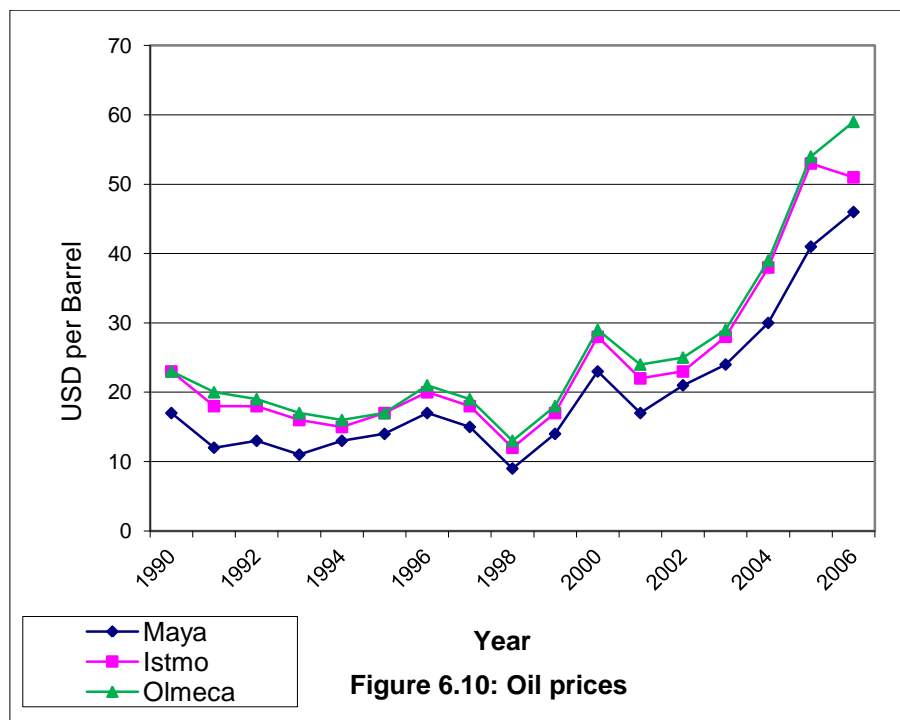


Figure 6.10: Oil prices

Source: Own projections with data from the President’s Report 2006

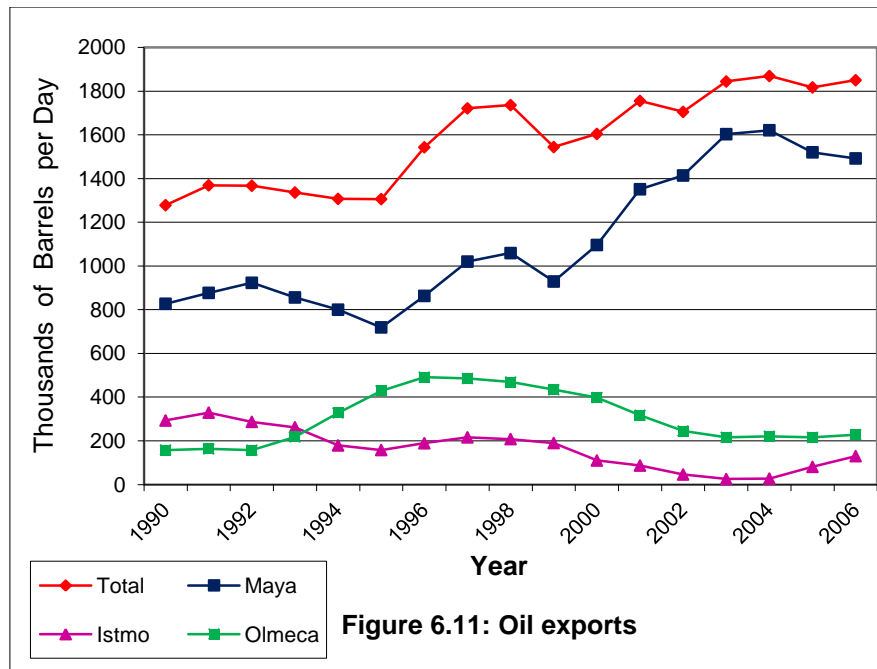


Figure 6.11: Oil exports

Source: Own projections with data from the President's Report 2006

Figure 6.10 shows how Mexican oil prices have been behaving during the last sixteen years. We can see that prices for the three oil export varieties, Maya, Istmo and Olmeca, have followed a similar trend. In particular, it indicates that from 1990 to 1994, prices decreased at an average of 30%. From 1994 to 1996, prices slightly increased, but then in 1998 had a considerable fall. Also, from 1996 to 1998, the pattern was repeated. However, since 2001, the three oil prices have been strongly increasing at an annual average rate of 20%. In other words, Maya, Istmo and Olmeca crude oil prices have increased from US\$17, US\$22 and US\$24 to US\$46, US\$51 and US\$59 respectively.

Figure 6.11 shows PEMEX's oil exports. We can see how, after 2000, Maya oil production started to increase considerably at an average rate of 5% per year. This represents an increase from 1,096 to 1,492 million barrels per day. Conversely, Istmo oil exports just increased from 110 to 130 thousand barrels per day. In 2006, total oil production reached 1,850 million barrels.

Table 6.3: Oil price differences

| Year | Estimated Price | Reached * Price |
|------|-----------------|-----------------|
| 1998 | 10 | 10 |
| 1999 | 15 | 15 |
| 2000 | 15 | 24 |
| 2001 | 18 | 19 |
| 2002 | 17 | 21 |
| 2003 | 17 | 25 |
| 2004 | 20 | 31 |
| 2005 | 23 | 42 |
| 2006 | 31 | 47 |

Source: SHCP-CGPE (1998–2006)

* Prices for Mezcla Mexicana de Exportación

Table 6.3 shows the difference between the estimated and the real market oil prices from 1998 to 2005. Since 2000, actual prices have been higher, providing the government with extra financial resources. For instance, the official estimated oil price in the 2005 national budget was US\$23. However, Mezcla Mexicana’s market price reached US\$42. As a result, the economy received US\$19 more for each barrel sold. Moreover, if we consider that the real cost of producing a barrel of oil is between \$2.50 and \$3, we can conclude that the country has been receiving a substantial amount of economic resources.

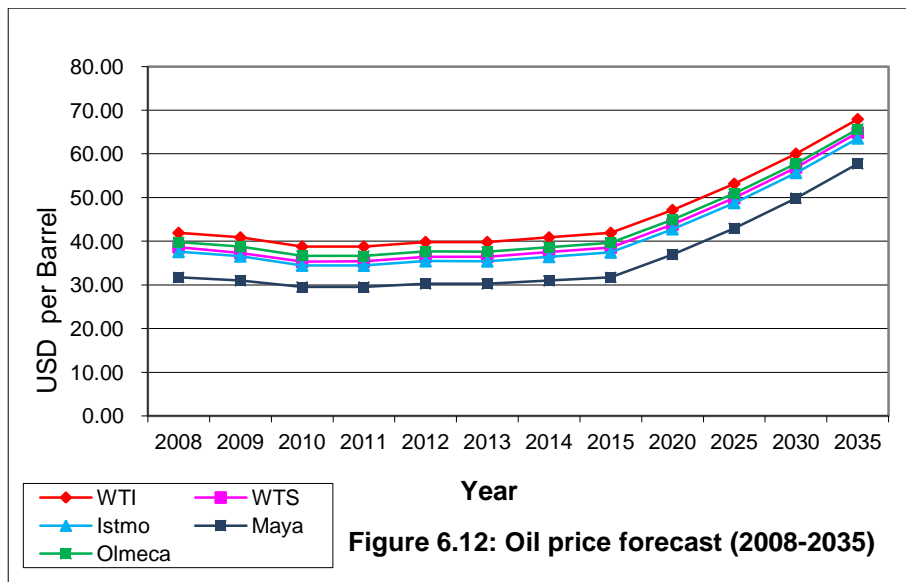


Figure 6.12: Oil price forecast (2008-2035)

Source: Own projections with data from the Mexican Petroleum Institute (IMP) 2007

WTI: West Texas Intermediate

WTS: West Texas Sour

According to information from the Mexican Petroleum Institute, oil prices will continue to be high in the long term (see Figure 6.12). It is predicted that the minimum price range may be between \$30 and \$40 for the next eight years. Prices are not expected to drop below \$20, unlike the levels reached during the 1990s when the Mexican government was forced to carry out budget plan cuts due to low oil prices.

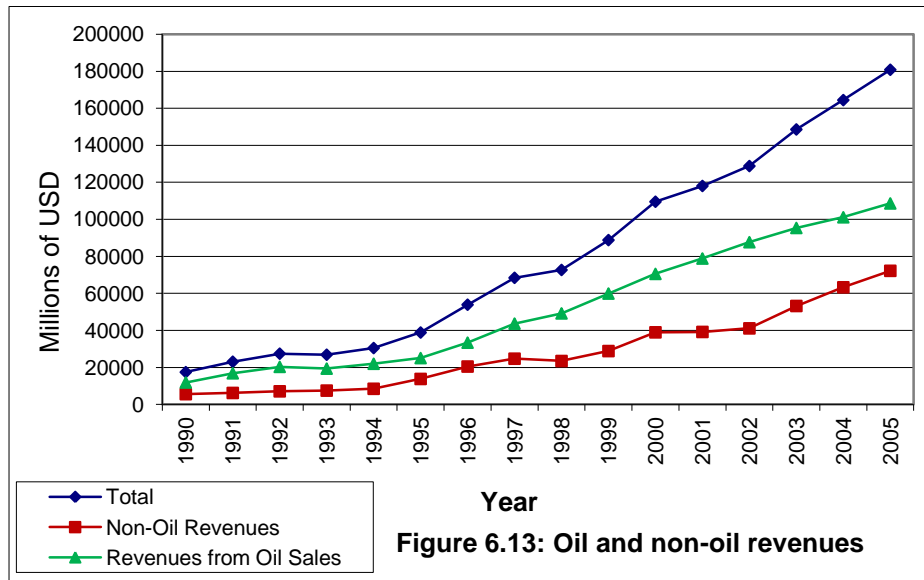


Figure 6.13: Oil and non-oil revenues

Source: Own projections with data from the President's Report 2006

Figure 6.13 shows the oil and non-oil revenues. From 2000 to 2005, non-oil revenue increased from US\$70 to US\$109 billion. During the same period, oil revenue increased from \$38 to \$72 billion at an annual average rate of 13%. Thus, in 2005, oil sales represented 40% of total government revenue. These figures demonstrate how the economy is highly dependent on PEMEX oil exports.

6.4.1.2. Past Privatisations: Analogies as the Reference Point

(i) Explanatory Variable 5 (EV5): California's energy crisis

The case of California's electricity supply industry has been considered as the world's main catastrophe in the field of international energy reforms. It provides a sound example when regulation is not well developed (Joskow 2001). During this crisis, wholesale prices increased by 500% between the second half of 1999 and 2000; customers were required to reduce their electricity consumption; California's two largest electricity utilities (Pacific Gas & Electric PG&E and Southern California Edison SCE) had to pay higher prices for wholesale power; and by 2001, PG&E stopped

paying its bills and other financial instruments, ending this situation with its declaration of bankruptcy.

In the early 1990s, the Californian economy was buying electricity at tariffs 50% higher than the national average (Brand and Scheffran 2005; Joskow 2001). Higher prices were attributed to the considerable costs of nuclear plant construction. This situation, as well as the lower prices offered by Independent Power Producers (IPPs), led large consumers such as the steel industry, cement manufacturers and the mining sector to persuade the government to initiate a structural change in the electricity industry¹⁶². In 1998, the reform went into effect by allowing large users to buy electricity from IPPs. One of the main characteristics of the programme was that retail prices were fixed, whereas wholesale prices could fluctuate freely.

By 1999, difficulties started to arise. Electricity demand increased rapidly due to industrial consumption and the digital revolution (*The Economist* 2001a). Moreover, wholesale prices increased dramatically, which led the two utilities (PG&E and SCE) to buy electricity at a higher price than they were able to resell it for (Joskow 2001)¹⁶³.

This situation forced the utilities to stop paying their bills and start buying electricity on credit. Since the utilities' financial situation had worsened, the unregulated wholesale suppliers stopped selling electricity to them. In June 2000 and January and May 2001, the electricity services were interrupted due to the limited generation capacity. To solve this problem, the state government had to intervene and pay US\$7 billion to electricity suppliers (*The Economist* 2001b).

The unsuccessful reform was attributed to different elements. On one hand, and according to Joskow (2001), the main problem was caused by the retail prices and the liberated wholesale prices. Instead, retail rates could be determined by the demand fluctuations. Also, he states that electricity suppliers were not regulated, so they could stop supplying electricity to utilities whenever they wanted. Finally, California adopted the UK model without considering the specific conditions of the local economy.

On the other hand, Brand and Scheffran (2005) consider that there were irregularities from the regulators. First, the fixed customer rates were artificially high in order to

¹⁶² Ibid.

¹⁶³ Both utilities generated a specific amount of electricity. The rest was imported from suppliers located in other states such as Arizona, Nevada, Oregon and Washington. Since these states were also experiencing higher demands, the amount of electricity supplied to California was restricted.

guarantee investors a higher rate of return. Secondly, local authorities did not force utilities to invest in electricity generators. What is more, the regulations allowed PG&E and SCE to sell part of their existing electricity generators without considering the negative effects on the economy's electricity demand. These situations show that the authorities protected private investors and therefore behaved in a corrupt manner.

(ii) Explanatory Variable 6 (EV6): Argentina's electricity crisis

Mexican political leaders consider that the Argentinean case could be reflected in Mexico for two main reasons: 1) the country lacks a strong regulatory framework; and 2) if the MEI is more open to private investors, the country's bad economic structure could trigger an energy crisis.

In 1999, President de la Rúa took office with support from a political coalition that succeeded in removing Menem's¹⁶⁴ Peronist party from the Argentinean presidency (Núñez-Luna and Woodhouse 2005). In December 2001, de la Rúa was forced to leave the presidency because of his inability to control the country's bad economic situation.¹⁶⁵

After the economic and financial crisis, the economy also started to develop an energy crisis. Substantially privatised in 1992, the Argentinean electricity industry¹⁶⁶ did not have sufficient installed capacity to meet the electricity demand. Since the industrial sector started to recover, it required higher amounts of electricity to maintain production levels. However, private electric utilities were unable to satisfy that demand (La Jornada 2004). Consequently, the government forced large electricity consumers to reduce their electricity consumption. Thirty electricity users, including carmakers such as Peugeot and Citroën, and petrochemical-chemical companies (e.g. Total and Praxair) were forced to reduce their electricity demand by 20%.¹⁶⁷

During the Menem administration, private utilities were not forced to expand their installed capacity. As a result, from 2003 to 2005, electricity tariffs were frozen to compensate this situation. This action and other measures, such as the review of contracts, pushed some private investors to leave the country. For instance, National

¹⁶⁴ President Carlos Menem (1989–1999).

¹⁶⁵ Under Eduardo Duhalde, the interim president (January 2002 to May 2003), the government eliminated the artificial pegging of the Argentinean peso to the American dollar. Also, he devaluated the peso, which lost 200% of its value against the USD. He then stabilised it at about 3:1 (Núñez-Luna and Woodhouse 2005).

¹⁶⁶ See Pollitt (2004) for a complete analysis of the electricity project in Argentina.

¹⁶⁷ Ibid.

Grid, a British electricity company that owned Transener, was the last firm to leave Argentina after investing US\$100 million in electricity transmission¹⁶⁸.

In April 2005, utilities could increase their tariffs again. President Kirchner's administration allowed companies to raise their prices only if they were willing to carry out investment programmes to expand electricity generation and improve the quality of their services. This situation showed that privatisations were implemented without structuring an adequate regulatory framework. Daniel Montamat, a former Argentinean Minister of Energy (2000 to 2001) stated "You cannot play a football match without first constructing an adequate pitch and the game's rules".¹⁶⁹

6.4.2. Defining the Domains of the Key Decision-Makers

In this section we analyse how the key decision-makers from the three political parties framed their choices under the PT perspective. The information we discussed in the last section provided a background that helps us to understand how these players saw themselves in PT's value function. Moreover, this analysis finds evidence of the endowment effect in one of the political parties.

6.4.2.1. The Party of the Democratic Revolution (PRD)

(i) Effects of EV1 and EV2 on the behaviour of decision-makers

Since President Zedillo (1994–2000) announced the MEI's privatisation programme, the PRD declared its strong opposition to it. In fact, it has been the only player that has showed complete satisfaction with the MEI's status quo (SQ). In other words, they are convinced that the industry should be maintained as a public structure.

In terms of the MEI's financial structure, the PRD considered that the industry is in very good condition. For instance, some PRD key economic advisers faced positive prospects when they carried out a financial analysis of the MEI. In a document presented during a debate on the reform in October 2002, Deputy María del Rosario Tapia, the secretary of the Chamber of Deputies' Energy Commission, and Ifigenia Martínez, a PRD economic advisor, stated that the company was profitable, stable and had enough physical capacity to satisfy the country's electricity demand in the long term. Particularly, they indicated that the utility generates more than US\$2 billion annually that can be used for its investment programmes (La Jornada 2002a). These

¹⁶⁸ Ibid.

¹⁶⁹ Ibid.

arguments clearly correspond to our own financial analysis (Explanatory Variable 1) in which we demonstrate the company's sound economic bases.

Martínez and Tapia did not see any critical situation in the industry that could place them in the domain of losses. For instance, a rise in the country's growth level would have triggered electricity demand. One of the federal government's arguments for MEI reform was that the economy was going to grow at 7% in the following six years. Consequently, the authorities considered that the MEI needed to be completely open to private investors to satisfy these requirements generated by such economic growth.

The PRD advisors rejected this assumption because the American economy was slowing down at that time. Consequently, it was impossible to increase Mexico's GDP at that level due to the country's strong dependence on the US. This situation made the PRD economic advisors see Mexico's status quo as acceptable by using the US economy as their reference point. This means that the decline in the American economy was a good reason not to take a risky decision, such as the MEI's privatisation.

Oil exports were also a reference point for Mexico's left-wing party. As we pointed out in EV4, 40% of the country's total revenue comes from oil sales. Since 2000, oil prices have been very high, providing the market with extra economic resources that have been channelled into various sectors including the energy industry. The PRD considers that employing these resources can strengthen the electricity sector. This is another reason why the PRD economic advisors were not willing to accept the privatisation as an alternative capitalisation programme for guaranteeing the economy's electricity supply.

Finally, high natural gas prices led the PRD to be unsatisfied with the IPPs' SQ. According to Antonio Rojas-Nieto (the CFE's Director of Economic Analysis and the PRD's advisor), the PRD knew that the natural gas prices were going to be a problem for the electricity tariffs in the long term. He considers that if the privatisation were carried out, there would be no control over the tariff structure, because IPPs have already invested in very sophisticated power plants that utilise expensive natural gas. Rojas-Nieto states "The only actors that obtain benefits from this situation are the private investors because they are natural gas producers as well ... I consider that we can use the money from oil export sales to expand the installed capacity in partnership with the private sector ... there is no need to privatise it". Similar to Martínez and Tapia,

Rojas-Nieto's dissatisfaction with the IPPs status quo is a consequence of being in a domain of gains¹⁷⁰.

(ii) The endowment effect

According to Antonio Soto, a PRD senator and member of the Senate's Energy Commission, the electricity industry cannot be privatised because it has been a key element in Mexico's development. He stated the following: "the electricity industry is part of the country's legacy, it is part of the strategic resources we have been using to transform the economy ... if it changes from public to private ownership the society's socio-economic welfare will be severely damaged ... the Mexican society is very attached to the energy sector, people feel they have the right to decide what is best for it ... the Constitution gives us the right to keep it as a public sector ... we have been educated under a strong nationalistic perspective ... we cannot get rid of the industry too easily. We are the only party that can protect what other historical leaders have reached".

Under this situation, we consider that PRD's position towards the energy sector is connected strongly to certain historical events that helped to build the nation-state. As we discussed in the previous chapter, President Lázaro Cárdenas' role in expropriating the oil industry in 1938 and starting the nationalisation of the electricity sector by creating the Federal Electricity Commission (CFE) in 1937 was particularly important. These events have led the PRD and most of the social sectors to overvalue the MEI and, as a result, they are not willing to lose it.

We consider this to be a clear example of the *endowment effect* (Thaler 1980). This occurs when people tend to value their possessions at higher prices than objects they do not own. In other words, people overvalue goods or services once they obtain the property rights to such assets. In Chapter 3, we stated that people's choices depend on the state of their current endowments. Kahneman, Knetsch and Thaler (1990) carried out different experiments that proved it (see Section 3.3.2.1).

After the oil expropriation, the whole energy sector (including the electricity industry) became a symbol that represents Mexico's economic progress, its social unity via labour unions and a victory of nationalism over foreign interests. These were the elements that the PRI regime employed to build part of its hegemony. In some way,

¹⁷⁰ Recall that in Chapter 3 we discuss that dissatisfaction with the SQ may have been a result of being in a domain of gains.

people saw that the energy sector was a real factor that contributed to the improvement of society's economic structure. For instance, many social programmes that depend on oil resources and access to rural electrification have been important factors that made people feel comfortable with the energy industry's benefits. Moreover, the strong promotion of pro-nationalist information in society strengthened a common feeling of property rights.

Huesca (1988) provides examples of how the Mexican government and the National Revolutionary Party, which later became the PRI, implemented a strong pro-nationalist campaign against foreign interests after the oil expropriation to shape public opinion. Books, public pronouncements, the press and radio reports reflected feelings of anti-imperialism and national sovereignty. Also, social events were used to promote such sentiments. During the expropriation celebrations, "messages of economic health and freedom accompanied anti-imperialist themes ... the masses paraded through the streets with cheers and music and with banners that proclaimed: The Wealth of Mexico Must Be Possessed by Mexico!" (Huesca 1988, p. 6).

The above elements have reinforced people's emotional attachment to the electricity industry and therefore they refuse to lose something they possess. Consequently, if the status quo is modified, it will be severely damaged by the losses caused by such an alteration. Levy (2003) states that an "endowment effect's implication" suggests that gaining something and then losing it does not put people in the same place in terms of the psychological value of their assets.

According to Kahneman et al. (1986), fairness can be determined with respect to some "reference transaction". In terms of companies and consumers, the market price is the reference point. So people tend to believe that companies behave in an unfair way when they raise prices during a sudden increase in demand. "Price increases are considered legitimate only if they are necessary to offset new costs for the seller, firm, or landlord" (Levy 2003, p. 229). It explains why the PRD, represented by deputy María del Rosario Tapia and Ifigenia Martínez, is not willing to accept the privatisation, because the industry is in good condition, as confirmed by our analysis of EV1. In other words, the PRD considers that it is illegitimate to expand the electricity supply when there are no real reasons to do it.

Atiyah (1979)¹⁷¹ states “to deprive somebody of something which he merely expects to receive is a less serious wrong, deserving of less protection, than to deprive somebody of the expectation of continuing to hold something which he already possesses”. Levy (2003) considers that when somebody breaks a contract to obtain gains, he is more likely to be held to the contract’s original terms. In this sense, if we assume that the Mexican Constitution, which considers the energy sector as a strategic activity strictly reserved to the state, is the contract that establishes the terms and conditions of the MEI’s structure, we can see that the PRD does not accept the privatisation, as it contradicts the Constitution. People will experience a deprivation of property as a reduction of their wealth. Consequently, their new status quo will be a loss, whereas the new possessor will increase his wealth.

According to some surveys from Parametría (2002) and Consulta Mitofsky (2003), between 2002 and 2006, more than 60% of the population in Mexico opposed the MEI privatisation because they considered that it would only benefit foreign private investors. Similarly, more than 60% consider that prices will dramatically increase if the privatisation is carried out. This evidence demonstrates a strong consumer unwillingness to accept the economic losses of this policy. So, at what price can the PRD allow a change of ownership in the electricity industry? PRD Senator Antonio Soto states that the energy sector is not subject to any negotiation. He argued that “if the government expects to increase the private investment level, there are determined conditions that it has to guarantee. For example, the industry’s public ownership has to be maintained, electricity tariffs have to decrease, and the labour force’s rights have to be respected”. This shows that PRD’s acceptable selling price exceeds any private company’s expectations in terms of the project contract conditions of an energy investment.

(iii) Effects of EV5 on the behaviour of decision-makers

PRD leaders also used analogies to choose their domain. While the different actors were debating the MEI reform, California was severely affected by an electricity crisis. This situation strengthened the PRD’s opposition of the electricity industry privatisation and therefore accepted the CFE’s current SQ – to maintain it under public ownership.

During different political discussions in 2002, key PRD leaders showed their aversion to losses. Particularly, the three-times presidential candidate and the party’s founder,

¹⁷¹ He provides a survey of the history of the contract. He is cited in Cohen and Knetsch (2000).

Cuauhtémoc Cárdenas, and party coordinator in the Chamber of Deputies, Deputy Martí Batres, opposed the reform because they considered that Mexico could experience a problem similar to California's. The direct events that occurred in California influenced Cárdenas and Batres' perceptions, but there were other factors that helped define their domain's position. For instance, they had a private meeting with California's democrat congressman, Robert Filner, who recommended that the PRD should not support the MEI privatisation (*La Jornada* 2002b).

In an interview with *La Jornada*, Filner stated "The California crisis demonstrated that privatised electricity companies cannot entirely guarantee the supply of electricity to any economy ... Mexico is trying to increase its installed capacity but it does not need to privatise ... Moreover, Mexican authorities must regulate private companies' operations because it was the lack of regulation in California that caused the current crisis"¹⁷².

In the same way, Antonio Rojas-Nieto reflected the MEI's current conditions in the California case. In *La Jornada* (2002c), he stated that leading scholars in the field of electricity economics such as Paul Joskow and David Newbery¹⁷³ severely criticised California's inefficient regulatory framework (Explanatory Variable 5). Rojas-Nieto used the well-respected arguments from these two scholars as availability heuristics¹⁷⁴ to define the risks of Mexico's weak regulatory framework, drawing immediately on the California analogy. Since Enron¹⁷⁵ had a relevant role in the California crisis and some of its subsidiaries were interested in the MEI, it pushed Rojas-Nieto deeper into the domain of gains.

California was not the only case that strengthened the PRD's perception of a domain of gains. The Argentinean energy crisis had exactly the same effect as the one we described above. Particularly, Antonio Rojas-Nieto employed Argentina's corruption levels to reflect the Mexican case. They framed this situation as a relative scenario of gains. What prospect theory tells us is that the above energy experts saw Mexico's current SQ as acceptable in terms of its corruption level. In other words, they recognised that combining Mexico's corruption problems with a possible reform in a

¹⁷² Ibid

¹⁷³ Paul Joskow, Massachusetts Institute of Technology (MIT), and Paul Newbery, University of Cambridge.

¹⁷⁴ See Chapter 3 (Section 3.3.3.1).

¹⁷⁵ Enron was the world's largest energy-trading company. In 2001, it got involved in different corruption and financial scandals. For instance, Enron had problems in terms of a lack of transparency in its financial statements, which was one of the reasons behind its bankruptcy on 2nd December the same year. See *The Economist* (2001c) for more information about this case.

strategic sector such as the energy industry could lead to a worse scenario. This means that they preferred the current SQ rather than a stronger crisis created by the combination of corruption and a poorly regulated industry¹⁷⁶.

Although PT is not concerned whether analogies explain domain or domain explains analogies, the interesting point is that all these actors directly used analogies as a means to locate their domain. If California and Argentina had not experienced such crises, the PRD would be unable to strongly frame its domain. In the interviews, each PRD adviser, including Rojas-Nieto, made reference to these circumstances.

6.4.2.2. The National Action Party (PAN) and the Institutional Revolutionary Party (PRI)

(i) Effects of EV1 and EV3 on the behaviour of decision-makers

What was the PAN's domain in the PT's value function? The people responsible for designing and carrying out the electricity reform found themselves in a position of satisfaction with the SQ in the MEI. In fact, the elements that located the PRD in the value function's right latitude are almost the same as those that placed the PAN in the domain of gains.

In terms of the MEI's financial and economic structure, the PAN accepted that the industry is in very good condition. The CFE's executive director, Alfredo Elías-Ayúb, stated during an interview that the company had not been privatised because it was in an excellent financial and economic situation. Thus, his position immediately led the PAN to frame the situation as a positive prospect. Also, it coincided with our arguments defined in EV1.

The CFE's executive director was not the only decision-maker to accept that he was in the domain of gains. Francisco Salazar, former president of the Chamber of Deputies' Energy Commission and current president of the Energy Regulatory Commission (ERC), also accepted it. In the interview, he stated that the industry was not privatised because it is in good condition and also because they used a "wrong strategy". He said that the reform was based on making people believe that electricity demand was going to increase in the long term.

¹⁷⁶ Recall that during the Menem administration, private utilities were not forced to expand their installed capacity, which later obligated large electricity consumers to reduce their demand. See Section 6.4.1.2.

It was a “strategic framing action” (Levy 2003) that tried to manipulate people’s reference points about the country’s economic condition. In particular, they tried to convince people that the economy needed to strengthen the country’s electricity generation capacity because the industry was growing. According to Vis (2009), under the PT perspective, politicians use strategic framing to obtain people’s support for very risky policies by inducing fear as a convincing factor (see Section 3.3.2.2). The PAN’s argument was that without privatisation, the country was going to experience a severe energy crisis.

However, he stated that the strategy was not successful for three main reasons. First, they overestimated the forecast of electricity demand. Secondly, the Mexican economy slowed down due to different internal and external factors, including a decrease in the economic growth of the US, which reduced the electricity demand. The third reason is common to the arguments that the PRD advisors stated in the last section.

Francisco Salazar stated that “the reform was not adequately sold. Now, the strategy is to make people believe we need a very competitive industry which can provide lower tariffs.” This is a very interesting situation because the government tried to artificially create the conditions of an adverse scenario about the MEI’s SQ. Recall that Weyland’s (2002) condition for Latin American countries to implement drastic economic reforms is that people have to be in the domain of losses and therefore behave in risky way (see Section 3.3.4.2). This was characteristic of the PAN’s strategy to privatise the electricity industry.

Also, Elías-Ayúb and Salazar recognised that the MEI lacks a regulatory framework¹⁷⁷. In particular, Salazar stated “IPPs regulate themselves and have almost the complete authority in this matter ... We need to strengthen the Energy Regulatory Commission (ERC) because it does not have any faculties for controlling investors”. This comment shows that there is something wrong with the industry and it needs to be adjusted. This situation put Salazar deeper into the domain of gains, because he knew that a privatisation programme requires an adequate regulatory structure before it is implemented. He preferred the current SQ rather than moving ahead to the next phase, privatisation.

¹⁷⁷ See explanatory variable no. 3 (EV3).

The president of the Federal Competition Commission (FCC) supported Salazar and Elías-Ayúb's views. As was pointed out in (EV3), the head of this institution directly admitted that the participation of private investors in the MEI is not regulated. Moreover, he stated that the FCC had been excluded from the debate and was not collaborating with the Energy Regulatory Commission (ERC) to analyse the reform. The PRI's key leaders saw themselves in the domain of gains as well. It is important to highlight that the policy-makers behind the MEI's reform are PRI members, including Elías-Ayúb, who has been the CFE's executive director since the Zedillo administration (1994–2000). In this way, the PRI's perception of the MEI's SQ coincides with the PAN's position.

Other key decision-makers such as former Senators Manuel Bartlett-Díaz and Laura Garza-Galindo were some of the PRI's main players in the reform debate. During the privatisation programme analysis, these politicians considered that the regulatory framework is a big issue that requires special attention before any action is taken (La Jornada 2002d and 2003b). Similar to Elías-Ayúb and Salazar, they showed their satisfaction with the industry's SQ. PRD Senator Antonio Soto stated that key PRI members agreed with the PRD's views about the MEI's SQ. He said: "many PRI colleagues support our views about the MEI's current conditions".

6.5. CONCLUSIONS

This chapter demonstrated that PT can be applied in political science. More specifically, it can explain the political dynamics of Mexico's energy sector. In our first case, we explained why President Zedillo was unable to implement his privatisation proposal. According to the president of the Energy Regulatory Commission and PAN member Xavier Salazar, the reason that his political party decided to postpone the debate on the electricity sector privatisation was because of Vicente Fox's popularity. Consequently, the PAN opted to analyse the proposal in the next presidential term. The explanation provided by Salazar was very simple and did not offer additional details.

This study used PT to clearly understand what factors led the PAN to make that decision. Our methodological approach showed how the adverse political and socio-economic conditions generated by the PRI regime dramatically deteriorated Mexican society. All these events, which occurred during different periods, put people in the domain of losses, which led them to make risky choices. More specifically, the decisions taken mainly at the end of the 1960s and 1980s had the objective of ending the PRI's hegemonic power. However, these actions failed and as a result society

continued to suffer from the bad PRI governments. At the end of the 1990s, an outsider emerged who was seen by the majority of the citizenry as a person who could change the status quo. As part of his political campaign, this newcomer strongly manipulated people's perceptions and promised to "save" the country from the PRI's authoritarianism.

The scenario presented during the 2000 presidential elections constituted a historical event for Mexican society. People observed that they had an exceptional opportunity to put Mexico on the path to democracy. The PAN and its candidate were the players who could reach that aspiration. These positive conditions gave the PAN the luxury to make important decisions that could only be carried out because they were in the domain of gains. What would have happened if the scenario presented in this analysis had been different? One of the key characteristics of prospect theory is the dynamic nature of its predictions. In other words, PT predictions can change over time if the explanatory variables also change (McDermott 2001).

If we modify the context in which the different players were acting, we can obtain other results. For instance, if we exclude the role of the outsider from the 2000 presidential campaign, it would be difficult for the people to reach a new status quo. Similarly, if President Zedillo had managed the economy adequately, Mexicans would have felt satisfied with the PRI regime. These factors could have led the PAN to support the PRI's electricity privatisation project.

In the case of the second research question, this chapter demonstrated that PT's core findings coincide with the behaviour of leading decision-makers. In particular, official information, economic data and interviews suggest that risk avoiding in the domain of gains justifies why the MEI has not been completely opened to private investors. Mercer's (2005a) framework led us to structure the data and information in a way that enabled us to logically explain the reform's decision-making process under PT's perspective.

The three political parties were in the domain of gains. The CFE's executive director stated that the MEI is in good economic condition and it has not been privatised for that reason. Also, official authorities in regulation and competition stated that the industry's regulatory framework has to be strengthened before more private investment is allowed. In the case of the PRD and the PRI, both parties were also extremely concerned about this issue. They used the cases of Argentina and California as

analogies to show their dissatisfaction with the regulatory framework's weaknesses. Moreover, they used the high oil export prices as a reference point, so they considered that such resources could be employed to capitalise the industry instead of allowing more private investment.

The privatisation could not be implemented because Weyland's PT/crisis argument was not present in the MEI. In other words, the industry's SQ was not deteriorating and therefore it did not allow the decision-makers to make a risky choice. During Fox's administration, the strategy to manipulate people's reference points, known as strategic framing, was employed. The strategy of making society believe that the electricity demand was going to increase in the long term did not work as they planned. We consider it was not successful because the positive conditions that surrounded the MEI placed the political leaders (who opposed the privatisation) deeper in the domain of gains. Consequently, the PRI, the PAN and the PRD could not reach any agreement about the electricity project.

The endowment effect was another interesting element in our PT analysis. The energy sector has been considered by Mexican society as part of the national legacy. It is a very strong feeling that was the result of the actions carried out mainly by President Cárdenas. He declared the oil and electricity industry as strategic sectors which can only be controlled and owned by the Mexican state. These particular elements of such industries were established in the Constitution. Since then, these sectors have historically played a key part in the country's economic development.

These conditions led people, including political leaders, to refuse the privatisation of the energy sector. The importance of oil expropriation and electricity nationalisation for Mexico has been passed down through generations. Consequently, this feeling is positioned strongly in Mexican society. According to Harbaugh et al. (2001), the endowment effect does not decrease with the passing of time. What does this mean in terms of our particular case? It indicates that people's unwillingness to part from assets that belong to them will not decrease. As a result, it will be difficult for the policy-makers to change the energy sector's structure from public to private ownership. People will defend it against any threat, because "losses loom larger than gains" (Kahneman and Tversky 1979, p. 279).

In Chapter 5, we analysed the private sector's partial participation in the MEI. The study found that the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act – has severely damaged the country's public finances. In particular, the electricity

generated by the Independent Power Producers (IPPs) has been very costly for the economy. Moreover, there is evidence that the CFE has intentionally awarded a very costly contract to a private company for the supply of natural gas. According to an analysis carried out by the Economic Commission for Latin America and the Caribbean (ECLAC), Mexico is the only country in Latin America that has a very high electricity generation capacity, which has been underused by the government. The organisation states that the Mexican authorities greatly overestimated the electricity demand. Moreover, ECLAC indicates that the private companies that supply natural gas to the CFE are not affected by the high natural gas prices (González 2012). In other words, the CFE absorbs gas price increases. All these elements coincide completely with our study of the IPPs in Chapter 5.

Under these circumstances, is it possible to privatise the MEI? We consider that the different irregularities in the MEI can lead decision-makers to accept the SQ. In other words, they will not be willing to accept privatisation because it can be very costly for the economy. Moreover, the MEI is in good condition and has a very high electricity generation capacity. The endowment effect is another variable that plays an important role in the political dynamics. People will not easily accept a change of the SQ. So, if people consider the electricity sector to be part of their assets, why have they accepted the partial participation of the private investors in the MEI?

As we explained, the LSPEE could be changed because the PRI still had a hegemonic control over the political system. This means that there was a lack of debate between different political players and therefore that decision was directly imposed. Under the PT perspective, we found that Salinas' aspiration was the factor that led him to reform the LSPEE. Although the IPPs participate strongly in the MEI, the Constitution still considers the CFE as a state-owned company. This condition makes people feel that this industry is still part of their assets.

Finally, the two models presented in this chapter offered different ways to operationalise prospect theory. In the first model, we used a structure that did not have a detailed analysis of the explanatory variables. Conversely, the second model developed these variables in more detail. The reason that we could carry out that operation is because one of the key characteristics of PT is that it does not have a standard structure for its application in political science. This condition allows the researcher to design her own structure to determine people's domains. Moreover, to apply PT we only need to identify individuals' domains but not the source of those

domains. In the following chapter, we offer an analysis of further alternative approaches that explain the delay of the MEI's privatisation.

CHAPTER 7: ALTERNATIVE PERSPECTIVES ON THE NON-PRIVATISATION OF MEXICO'S ELECTRICITY INDUSTRY

7.1. INTRODUCTION

What are the alternative arguments behind the delay in the Mexican Electricity Industry's (MEI) privatisation project proposed by President Vicente Fox? This chapter offers an analysis of selected approaches based mainly on expected-utility models that attempt to explain this question. The selection of these alternative explanations is based on their important role in political science literature and in terms of the political dynamics' decision-making processes. These models contrast well with prospect theory and offer a different perspective from the analysis developed in the previous chapter.

The chapter is divided into six main sections. Section 7.2 discusses the political fragmentation model. We consider this model to be a very interesting approach that challenges our PT analysis. It states that political parties have not been able to reach agreements about the reform because the country has a political structure based on a consensus system. Section 7.3 provides an analysis of the interest groups. It considers that the MEI privatisation project has not been realised, as political groups, particularly the PRI, are waiting to privatise it once they recover the presidency. As a result they alone will reap the political benefits. Also, it proposes that the industry's two unions are mainly responsible for the proposal's lack of progress.

Section 7.4 provides a political game theory approach. Section 7.5 discusses an analysis that considers that political parties are not entirely willing to support the privatisation because it will affect the middle classes. Thus, political parties will have less support from this segment. Section 7.6 discusses people's attitudes to the privatisation project. Finally, section 7.7 offers an interesting analysis of prospect theory and the approaches presented in this chapter.

7.2. POLITICAL FRAGMENTATION

An interesting and alternative perspective that can explain why the federal government could not implement the privatisation is based on the country's *political fragmentation*. "It has been established that democracy somehow constitutes an obstacle for the

country's development" (interview with Rojas-Nieto 2005)¹⁷⁸. According to Rojas-Nieto, Mexico's democracy is a factor that does not allow political actors to reach technical and political agreements.

In particular, he considers that the economy's political system is young, lacks political maturity and is not interested in big issues such as the energy sector. Consequently, he considers that such elements have delayed the MEI privatisation. Moreover, he states that when the PRI was in power, the political system was more organised and much better prepared. Agreements were easier to reach when the PRI governed the country.

As we have already mentioned, the PRI governed Mexico for seventy years. In terms of the legislative power before the 1997 elections, the economy had a majoritarian congress. In other words, PRI governments had absolute control with the largest number of seats in the lower and upper house. So the federal government had the support of the legislative branch to approve any kind of initiative.

However, in 1997, the political structure dramatically changed. According to Carreón et al. (2003), the bad economic conditions generated by the 1995 financial crisis under a PRI government modified the electorate preferences. People decided to punish the PRI because of the bad economic situation and therefore gave their votes to other political parties. See Table 7.1.

¹⁷⁸ Recall that Rojas-Nieto is a PRD's economic advisor and chief of the CFE's Economic Studies Department.

Table 7.1: Mexico's political structure (%)

| Elections | Deputies | | | | Senators | | | |
|-----------|----------|-----|-----|--------|----------|-----|-----|--------|
| | PRI | PAN | PRD | Others | PRI | PAN | PRD | Others |
| 1964 | 83 | 10 | 0 | 7 | 100 | 0 | 0 | 0 |
| 1967 | 83 | 9 | 0 | 8 | 100 | 0 | 0 | 0 |
| 1970 | 84 | 9 | 0 | 7 | 100 | 0 | 0 | 0 |
| 1973 | 82 | 11 | 0 | 7 | 100 | 0 | 0 | 0 |
| 1976 | 82 | 8 | 0 | 10 | 100 | 0 | 0 | 0 |
| 1979 | 74 | 11 | 0 | 15 | 100 | 0 | 0 | 0 |
| 1982 | 75 | 13 | 0 | 12 | 100 | 0 | 0 | 0 |
| 1985 | 72 | 10 | 0 | 18 | 100 | 0 | 0 | 0 |
| 1988 | 52 | 20 | 0 | 38 | 94 | 0 | 6 | 0 |
| 1991 | 64 | 18 | 8 | 10 | 95 | 2 | 3 | 0 |
| 1994 | 60 | 24 | 14 | 2 | 74 | 20 | 6 | 0 |
| 1997 | 48 | 24 | 25 | 3 | 60 | 26 | 12 | 2 |
| 2000 | 42 | 42 | 10 | 6 | 47 | 36 | 12 | 5 |
| 2003 | 45 | 31 | 19 | 5 | 47 | 36 | 12 | 5 |
| 2006 | 21 | 41 | 25 | 12 | 26 | 41 | 20 | 13 |

Source: Carreón et al. (2003) and Chamber of Deputies and Senators' website.

Table 7.1 shows the country's political structure. It illustrates the political fragmentation generated since the 1997 elections. Particularly, it indicates how the economy moved from a majoritarian, or cabinet system, structure to a fragmented political system, or consensus system, in which no political party has sufficient power to approve their own reform proposals. Moreover, the number of small parties, which has increased in the last few years, has made the decision-making process more difficult. At the moment, there are five small parties: Convergencia, Partido Verde Ecologista de México (PVE), Partido del Trabajo (PT), Nueva Alianza and Alternativa. They all tend to collude with the big parties according to their political interests.

The Economist (2005) states: "anyone who complains of the lack of civility in public discourse in the United States or Europe should visit the lower house of Mexico's Congress". The article indicates how Mexican political parties have not been able to reach agreement about reforms, even when all these organisations believe that they are required. Moreover, it states that former President Vicente Fox (2000–2006) and the PAN were unable to build a consensus with either the PRI or the PRD because they blamed congress for obstructing any of their proposals without any reason. Under these circumstances, the PRI, the PAN and the PRD had to negotiate any decision according to their own interests.

Table 7.2: The legislative dynamics in the Chamber of Deputies under a cabinet system 1991–1997^a

| Source | Bills introduced | | Bills approved | | Contribution ^b | | Success rate ^c | |
|---|------------------|---------|----------------|---------|---------------------------|---------|---------------------------|---------|
| | 1991-94 | 1994-97 | 1991-94 | 1994-97 | 1991-94 | 1994-97 | 1991-94 | 1994-97 |
| Executive | 124 | 84 | 122 | 83 | 81.9 | 76.9 | 98.4 | 98.8 |
| PRI | 30 | 19 | 11 | 7 | 7.4 | 6.5 | 36.7 | 36.8 |
| PAN | 26 | 79 | 4 | 8 | 2.7 | 7.4 | 15.4 | 10.1 |
| PRD | 32 | 45 | 2 | 3 | 1.3 | 2.8 | 6.3 | 6.7 |
| PT | - | 8 | - | 3 | - | 2.8 | - | 37.5 |
| PARM | 9 | - | 1 | - | 0.7 | - | 11.1 | - |
| PPS | 5 | - | 0 | - | 0 | - | 0 | - |
| PFCRN | 4 | - | 0 | - | 0 | - | 0 | - |
| Independent State legislatures ^d | 1 | 12 | 0 | 2 | 0 | 1.9 | 0 | 16.7 |
| Other | 2 | 2 | 1 | 1 | 0.7 | 0.9 | 50 | 50 |
| TOTAL | 243 | 251 | 149 | 108 | 100 | 100 | 61.3 | 43 |

Source: Lehoucq et al. (2005)

^aThe information includes legislative bills originated in the Chamber of Deputies, such as permits, and symbolic legislation. Senate's bills are not included.

^b(bills approved by source/total of bills approved) x 100.

^c(bills approved/bills introduced) x 100.

^dIncludes Mexico City's Representatives Assembly.

Table 7.2 shows very interesting information on the legislature dynamics during the 55th (1991–1993) and the 56th legislatures (1994–1997) in which the country still had a cabinet system. According to Lehoucq et al. (2005), the first two columns provide data on the bills introduced by the different political parties and approved by the Chamber of Deputies¹⁷⁹. The other columns provide two indicators: the first shows the proportion of each source in relation to the total volume of legislation approved by the Chamber; and the last column indicates the success rate of each source¹⁸⁰.

The table indicates that the president had the highest success rate, 98% and 99% respectively. This means that almost all the bills introduced by the country's executive branch during these legislatures were successfully approved. In other words, the Congress supported 82% and 77% of the executive's proposed bills (see fourth column). Even the executive's legislative contribution was higher than the contribution made by the PRI itself. This demonstrates how the executive had absolute control over

¹⁷⁹ The Senate analysed and approved such bills.

“The data includes the bills involving changes in law and constitutional amendments, but excludes permits and symbolic legislation. They also treat each bill as if they were equal value and do not contain the number of amendments to which bills were subject during the process of legislation in the Chamber of Deputies. Despite these limitations, the data reveal important outcomes of executive-legislative relations in the last two legislatures under single party rule” (Lehoucq et al. 2005, p. 30).

¹⁸⁰ Ibid.

Congress, and therefore no political party was able to delay or block the president's bills.

Also, Table 7.2 demonstrates the opposition's legislative dynamics. According to the data, the opposition contributed 32% and 57%¹⁸¹ of the total volume of bills during these legislatures. However, the vast majority of their bills were not approved; only 5% and 15%¹⁸² of such bills were successful. This information indicates that the PRI delegated lawmaking duties to the executive because only 19% of the PRI government's bills came from PRI legislators.

Table 7.3: The legislative dynamics in the Chamber of Deputies under a consensus system 1997–2003^a

| Source | Bills introduced | | Bills approved | | Contribution ^b | | Success rate ^c | |
|---------------------------------|------------------|---------|----------------|---------|---------------------------|---------|---------------------------|---------|
| | 1997-00 | 2000-03 | 1997-00 | 2000-03 | 1997-00 | 2000-03 | 1997-00 | 2000-03 |
| Executive | 32 | 61 | 28 | 50 | 20.4 | 18.2 | 87.5 | 82 |
| PRI | 86 | 306 | 15 | 54 | 10.9 | 19.6 | 17.4 | 17.6 |
| PAN | 168 | 265 | 31 | 65 | 22.6 | 23.6 | 18.5 | 24.5 |
| PRD | 157 | 294 | 20 | 45 | 14.6 | 16.4 | 12.7 | 15.3 |
| PT | 23 | 41 | 7 | 6 | 5.1 | 2.2 | 30.4 | 14.6 |
| PVEM | 44 | 74 | 8 | 14 | 5.8 | 5.1 | 18.2 | 18.9 |
| State legislatures ^d | 25 | 86 | 1 | 15 | 0.7 | 5.5 | 4 | 17.4 |
| Independent | 10 | 11 | 2 | 1 | 1.5 | 0.4 | 20 | 9.1 |
| PAS | - | 13 | - | 0 | - | 0 | - | 0 |
| PSN | - | 8 | - | 0 | - | 0 | - | 0 |
| CDPPN | - | 6 | - | 0 | - | 0 | - | 0 |
| Joint | - | 42 | - | 25 | - | 9.1 | - | 59.2 |
| Other | 61 | - | 25 | - | 18.3 | - | 40.9 | - |
| TOTAL | 606 | 1207 | 137 | 275 | 100 | 100 | 22.6 | 22.8 |

Source: Lehoucq et al. (2005)

^aThe information includes legislative bills originated in the Chamber of Deputies, such as permits, and symbolic legislation. Senate's bills are not included.

^b(bills approved by source/total of bills approved) x 100.

^c(bills approved/bills introduced) x 100.

^dIncludes Mexico City's Representatives Assembly.

Table 7.3 reports information regarding the initial fragmentation of the political system. In particular, it shows that there has been a considerable increase in the number of the opposition's bills and a significant decrease in the executive's bills since the mid 1990s.

¹⁸¹ These figures are obtained by adding all the bills (expressed as percentages) introduced by each opposition party (PAN, PRD, PT, PARM, PVEM, PPS, PFCRN and independent). Then, the result is divided by the total.

¹⁸² These figures are obtained by adding all the opposition parties' bills (expressed as percentages) approved by Congress. Then, the result is divided by the total.

For example, President Ernesto Zedillo's bills (1994–2000) decreased from 84 to 32 (see Tables 7.2 and 7.3) and he had a success rate of 87%.

When conservative President Fox assumed the presidency, the legislative process became more dynamic. The executive's bills increased from 32 to 61. However, the executive's contribution to the legislative process decreased from 77% to 18% during the 56th and the 58th legislatures. This clearly shows that the president had lost his absolute power in Congress.

According to Lehoucq et al. (2005), the legislative outcome did not decrease even though the political structure became a consensus system. Even though the political actors did not reach any agreements regarding structural reforms, the number of bills approved by Congress was higher than the number of bills during the last two legislatures in which the PRI controlled Congress and the executive power.

Lehoucq et al. (2005) establishes that in addition to the growth of opposition parties, there are other elements that lead the Mexican consensus system to prevent the realisation of agreements. For instance, the various committee chairs and secretaryships, which are allocated on a proportional bases, are multi-committee structures. This means that all deputies must work on at least three legislative groups. This situation prohibits deputies from specialisation in determined policy areas, such as energy. The Chamber of Deputies has 44 basic commissions such as science and technology, social development, etc. The energy commission comprises 29 deputies: one president, eight secretaries, and twenty members. Most of the deputies from this commission are members of two other committees.

Another interesting piece of information provided by Lehoucq et al. (2005) is their Rice index analysis¹⁸³. According to their study, this indicator of party unity shows that political parties in Congress vote *en bloc* because it gives a result of 90% for all parties. This index suggests that Mexican congressmen are not independent in terms of the decision and policy-making process. In other words, deputies and senators cannot individually make decisions, because their veto power is controlled by their coordinates in the Senate and Chambers of Deputies and by their parties' presidents. If a PRD

¹⁸³ "The Rice index is a simple indicator of party unity that consists of the difference between the percentage of party members voting against and for a specific motion. The maximum value of 100% means that the total party membership votes the same way. The minimum value of zero means that the party membership split into halves on a specific bill. The Rice index takes account of absentees nor those who abstain" (Lehoucq et al.2005, p. 40).

deputy agrees with the privatisation, he cannot vote in favour because the party's coordinator instructs them to accept or reject bills. In this way, from March 1998 to April 2000, the PRI had an index of 99.7%. After the PAN obtained the presidency, its Rice index increased from 92.8% to 97.6%. However, after the PRI lost its political power the index decreased to 94.8% on average (Casar 2000; Weldon 2004).

The above information suggests that the privatisation appears to be delayed by the country's political fragmentation. As the theory predicts, this situation occurs when the political system is a consensus structure, which tends to disperse decision-making power among various actors (Bortolotti and Pinotti 2004).

7.3. INTEREST GROUPS

The privatisation delays may also have been due to electoral considerations. Political leaders played with the prospect of an electricity privatisation in order to obtain marginal gains in the intense period that Mexico experienced during the 2000 presidential elections. Castañeda (2006) considers that the federal government could not implement this policy due to the Institutional Revolutionary Party's (PRI) electoral interests.

According to him, the PRI has a strong sector, led by former Senator Manuel Bartlett, who considers that the PRI must wait until it gets the presidency to privatise the MEI. He considers that if President Fox had approved the MEI privatisation with the PRI's support, the political gains would have been for Fox and the PAN, whereas the costs of that action would have been distributed between the PAN and the PRI.

There is truth in Castañeda's comments. In fact, we can establish that Mexico's political-electoral dynamics have a very strong influence on the way the economic policy is conducted. In this sense, Mexico's electoral cycle occurs every six and three years. Every six years the economy renews its senators, state governors and president. Every three years it renews deputies and local governments. None of them have the right to be re-elected.

Gonzalez (2002) demonstrates that Mexican politicians exhibit opportunistic behaviour every time elections occur. Her analysis details how PRI federal governments have manipulated the fiscal policy to get political benefits before elections take place and it clearly captures the idea expressed by Castañeda. Even if the presidency did not belong to the PRI during the privatisation debate, it has a strong presence in Congress

and is the only party that rules more state governments in the country. What is more, PRI members occupy different key posts in the economic policy area in the former and current PAN federal government.

For instance, President Fox's Minister of Finance, Francisco Gil-Díaz, and the current Minister of Finance, Agustín Carstens, are PRI members. Also, the Bank of Mexico's governor, Guillermo Ortíz, is an active member of the same political organisation. This situation has led the PRI to have a very strong influence on the economy's policy-making process, a strong bargaining power, and therefore the power to manipulate any kind of decision, such as the federal budget structure, without holding the presidency.

Gonzalez's (2002) political business cycle analysis considers that before important elections are held, the government implements a considerable number of investment programmes to influence people's perceptions and consequently induce their votes toward the incumbent government. She establishes that, in theory, the more democratic the elections, the more transparent the electoral process. However, in the case of Mexico, when the incumbent political party feels that its interests are in danger, it tends to manipulate the budget and consequently influence, or increase, the spending level.

The most relevant finding of this study that can be adapted to Castañeda's (2006) argument regarding Senator Bartlett's electoral strategy is that the PRI tends to play with the country's important decisions to get political benefits. In terms of the electricity privatisation project's political dynamics, the PRI could take advantage of it and therefore try to manipulate the outcome of the reform's bargaining process as they are used to doing it, especially because of the very competitive 2006 presidential elections in which the PRI wanted to resume power. In other words, the PRI is waiting until it obtains the presidency to carry out the privatisation, understood as a key investment programme in which a party would gain the preference of middle-class voters. Thus, they will be able to protect and strengthen their political capital (Castañeda 2006; Gonzalez 2002). This behaviour is typical of an imperfect democracy in which political parties opportunistically manipulate the economic policy (Gonzalez 2002).

Also, Castañeda (2006) states that political parties, including the PRI and the PRD, blocked the MEI privatisation because they did not want to be the potential "losers" of this process. Particularly, he considers that the industry's workers, who are grouped in the sector's two unions, the Mexican Electrical Workers Union – Sindicato Mexicano de

Electricistas SME (LyFC's union) – and the Sole Union of Electrical Workers of the Mexican Republic – Sindicato Unico de Trabajadores Electricistas de la República Mexicana SUTERM (CFE's union) – obtain very good economic privileges from the MEI. Moreover, both organisations play a key role in these political parties: the SME is strongly linked to the PRD and the SUTERM is part of the PRI's political bases.

According to Castañeda (2006), there are two main reasons behind their opposition to the electricity privatisation. The first is related to the political benefits that can be lost if the sector is privatised. In other words, the PRD and the PRI could stop receiving electoral support from union workers. The second motive, which he considers the most important, is about worker pensions. His analysis suggests that the worker pension scheme provides the workers with greater economic resources than an average worker in the country.

The benefits they obtain are as follows. According to the employment contract between the CFE and its union, workers have the right to get a pension equal to 100% of the last salary they received before retirement. Such a pension is dynamic, in that it automatically adjusts in respect to a worker's current active salary. In this sense, workers can retire after 25 years of service, provided that they are 55 years old. What is more, they can retire if they have been working with the company for 30 years, regardless of age. Another benefit is free electricity for all the workers.

Table 7.4: Rate of repositioning

| 25 years of Service | LyFC | CFE | Average Worker |
|---------------------|------|-----|----------------|
| | 2.1 | 1 | 0.6 |

Source: Castañeda (2006).

Table 7.4 shows the rate of repositioning. It compares an MEI worker's rate of repositioning with respect to an average worker's rate, which is calculated by obtaining the pension's quotient with respect to the worker's salary when they were active. A rate of 100% signifies that workers get the same income as the salary they received when they were active.

According to Table 7.4, a LyFC worker has the right to get a pension of 210%. On the other hand, an ordinary worker who contributes 4.5% of her salary to the pension fund¹⁸⁴ for 25 years obtains just 60% of her salary when she retires. A CFE worker gets a pension of 100% with respect to her last salary. In other words, an average pension from LyFC is approximately US\$1,589 per month, whereas a normal worker gets US\$205 monthly. These data highlight the extremely high benefits the MEI workers get and therefore constitute the reason they have blocked the reform.¹⁸⁵

Table 7.5: Contingent liabilities: LyFC and CFE (Million USD)

| Company | Assets (A) | Debt (B) | Current employee ^a retirement obligations (C) | Projected employee Obligations | | |
|---------|---------------|-------------|--|--------------------------------------|-------|-------|
| | | | | Status quo ^{b c} | B+C/A | B+D/A |
| CFE | 57,696 | 2,365 | 13,603 | 28,504 | 0.277 | 0.535 |
| LyFC | 8,272 | n.a | 3,700 | 9,869 | 0.447 | 1.19 |

Source: Castañeda (2006).

^aThe retirement obligations including all the benefits that workers deserve.

^bThe projections are calculated to fifty years at a discount rate of 6%.

^dThe projected retirement obligations give the total debt that a company generates if the status quo is not modified in the future.

Table 7.5 shows how the MEI's high worker benefits have led the two utilities to be extremely indebted. During this period, the information indicates that the CFE's retirement obligations represent 54% of the company's total assets. The case of the LyFC is ridiculous.¹⁸⁶ The value of the company's obligations is higher than its own assets.

By using a political economy framework, Carreón et al. (2003) coincide with Castañeda (2006) concerning the role of the unions in the reform debate. They state that these organisations have worked together to block any change in the industry's structure that can damage their interests. Moreover, they consider that the SME and the SUTERM are well-structured unions. So, they have enough means to get the support and, more

¹⁸⁴ The pension scheme has two systems. In the first system, the worker gets a pension which is generated by the economic resources she saved while she was working. In the second system, the workers who retire receive the funds generated by the active young workers. The first system is called Administradoras de Fondos para el Retiro (AFORES). The worker, the company where she works and the government contribute 4.5% of the worker's salary to the AFORE.

¹⁸⁵ Ibid.

¹⁸⁶ Ibid.

importantly, the votes of the working class. It concerns all of the political parties, because no one wants to face the political costs of changing the sector's status quo.

Although the above information has been captured under a political economy framework, we consider that prospect theory can also explain union behaviour. If we use Castañeda's arguments we can establish that the two unions are satisfied with their SQ. The benefits they get from the industry lead them to be in the domain of gains. Consequently, since the MEI workers obtain extremely high pensions and other economic benefits, such as free electricity, they are unwilling to accept a change in their SQ.

7.4. POLITICAL GAME THEORY

Castañeda (2006) also considers that the federal government failed to privatise the MEI because there was a strategic game between the ruling party and the opposition. He states that political parties tend not to cooperate before elections. On the other hand, he states that they tend to collude when there are no political campaigns ahead.

Castañeda states that by using a game theory approach we can explain why the three main political parties (the PRI, the PAN and the PRD) could not reach an agreement about the electricity reform. According to him, the PRI and the PAN have periodically cooperated and not cooperated with each other over the last seventeen years. For instance, the PAN supported the 1988 presidential election, which has been strongly questioned. In these elections, the PRI prevailed, with Carlos Salinas de Gortari as the presidential candidate. During his mandate, the PAN supported and colluded with the PRI in order to approve all the structural reforms proposed by Salinas.

Then, in 1994, the PRI won the elections with Ernesto Zedillo. During the Zedillo administration, the PAN supported the PRI's main bills in Congress. For instance, both parties approved a pension reform and the Fondo Bancario de Protección al Ahorro (FOBAPROA) – the Banking Fund for the Protection of Savings. It was a very controversial fund with the objective of recapitalising the banking system after the 1995 financial crisis, using public economic resources. The PRD always opposed such measures.

The PRI and the PAN have the same economic platform; both political organisations consider the MEI privatisation to be one of the economy's main issues. During Zedillo's last year (1999), a proposal to privatise the MEI was presented in Congress. However,

the PAN and the PRD rejected the project. Publicly, the PRD stated that private investor participation in the sector was acceptable without changing the industry's current structure¹⁸⁷. In other words, the PRD is not willing to accept a change in the Constitution, so the industry can be completely maintained under public control.

Although the proposal included positive conditions that the PAN had already accepted, it was rejected and both parties opted to discuss it during the Fox administration, Vicente Fox being the PAN's winning candidate. It is important to indicate that the privatisation project was not presented and discussed in any official session in Congress. The PAN and the PRD simply decided not to discuss it; in other words, there were no sessions to even vote against it. During the Fox administration the reform project was discussed several times; however, it was again rejected. This time, the PRD and the PRI colluded to oppose the reform. In this case, the PRI took the place the PAN had when Zedillo presented his proposal. Since then, the MEI privatisation has not been successfully approved.

According to Castañeda (2006), the above situation can also be attributed to the fact that political parties behave like firms when they face determined conditions. In other words, he states that companies' collusive behaviour is more common when market growth rates are higher, whereas they do not cooperate when the economic cycle is in its contraction phase. In terms of the political dynamics, the economic cycle's expansion and contraction phase can be understood as the political cycle's electoral periods. The changes in the parties' collusive behaviour depend on the upcoming electoral campaigns. The closer the elections are, the more the dynamic the political game.

If voters perceive reforms as costly measures, the political losses of approving them in electoral periods will be costly as well because of the discount factor¹⁸⁸. Consequently, political parties do not cooperate much during electoral campaigns if the reform costs are high.

The Austen-Smith and Bank's (1988) model of coalition formation illustrates how political dynamics can be developed in Congress. This model provides the framework in which determined political parties try to build a coalition in order to define a policy. Each party wants its own policy to be approved in Congress. Since no one has the

¹⁸⁷ Ibid.

¹⁸⁸ Ibid.

majority in the Chamber of Deputies, they have to form a coalition, but there is a bargaining process in which all parties have to negotiate the final outcome or the policy.

Table 7.6: Political dynamics of electricity privatisation

| Reform proposed by: | Colluding parties: | Outcome |
|---------------------|--------------------|--------------|
| PRI (1999) | PAN PRD | Not approved |
| PAN (2000-2006) | PRI PRD | Not approved |

Table 7.7: The Austen-Smith and Bank’s model applied in the MEI

| Cases | Governing coalition | Policy |
|--------------------------------------|---------------------|-------------------------------|
| PRI (<i>formateur</i>) > PAN > PRD | PRI PRD | $\frac{P_{pri} + P_{prd}}{2}$ |
| PAN (<i>formateur</i>) > PRI > PRD | PAN PRD | P_{pan} |

Table 7.6 shows how the three political parties behaved during the debate on electricity privatisation. Table 7.7 indicates the ideal outcomes under the Austen-Smith and Bank’s (ASB) model. In particular, it states that had the PRI negotiated part of the benefits from the reform with the PRD, the reform would have been approved but it would have shared the reform’s structure, $\frac{P_{pri} + P_{prd}}{2}$, with the PRD. On the other hand, during the Fox administration, the best strategy for the PAN was to form a coalition with the PRD as well. In this situation, the reform’s design is carried out by the PAN, P_{pan} . In the first case, the PRI was the *formateur* (the Zedillo administration); in other words, it was the party with the capacity to elect its coalition party because it was in power and had the majority of votes in Congress (see Table 7.1; year 1994 and 1997)¹⁸⁹. The PRI’s best choice was the PRD because it was the smallest party in the Chamber of Deputies. To consolidate a potential coalition with the PRD, the PRI had to share part of the privatisation’s political gains. According to the theory, a small party demands a lower level of political gains than a larger party.

¹⁸⁹ Recall that federal deputies are renewed twice during a presidential term.

In the second case, the PAN became the *formateur* under the Fox administration, and its best choice was the PRD. However, the PAN had to provide more of its political gains to the PRD because it was the second largest party in Congress (see Table 7.1; year 2003). In exchange for receiving a larger proportion of political gains, the PRD had to let the PAN be the only player in the decision-making process. The benefits offered by the PAN to the PRD are less than the proportion the PRI is willing to provide to it. The key point of this game is that all three parties want to maximise their utility functions by obtaining political gains from each other.

According to the model, the above can be avoided if the coalition partner just accepts the conditions proposed by the party that holds the largest vote share, the *formateur*. There are two conditions for this: 1) the coalition partner has to accept the policy, such as electricity reform; and 2) it has to reach an agreement with the *formateur* in terms of the political benefits they are both willing to accept. If the coalition partner accepts, the game ends. Although the model does not reflect the real situation of the MEI's political dynamics, it offers good elements for understanding them.

Carreón et al. (2003) considers two strategies to solve the above game. The first would be to wait until the Congress composition can allow a change in the Mexican constitution. However, this strategy depends on external variables, such as voter preference, which energy reformers cannot control. The second strategy is a coalition between the PRI and the PAN. However, both parties need to reach a mutual agreement in which the costs and political gains are distributed adequately.

In this sense, Carreón et al. (2003), believe that the PRI is perhaps overestimating the electoral costs of approving the privatisation, which are not very significant, particularly because the PAN would be seen as the most responsible if the project were to fail. Moreover, if the PRI really wants the electricity privatisation, it must forget about its political relationship with the CFE's union, the SUTERM. They must build a strong coalition to block the union objectives of maintaining their interests.

7.5. DISTRIBUTIONAL APPROACH

López-Calva and Rosellón (2002) state that public opinion surveys show that *people's perception* about privatisations is negative. They consider that this is because privatisation can affect the middle urban classes' interests, particularly if generalised subsidies are eliminated, as it can have a negative distributional impact on this sector of society. They consider that since the middle classes have much better representation than any other social group in the public and legislative circle, they will provide less support for the privatisation's approval.

Table 7.8: Number of tariffs in the MEI

| User | Tariffs |
|----------------|---------|
| Residential | 6 |
| Commercial | 2 |
| Public service | 4 |
| Agriculture | 2 |
| Industrial | 17 |

Source: López-Calva and Rosellón (2002)

Table 7.8 shows the MEI tariff levels. The tariff system is divided into five categories: residential, commercial, public services, agriculture and industrial. According to López-Calva and Rosellón (2002), domestic tariffs are below the industry's production costs and they include a subsidy, which covers more than 97% of users.

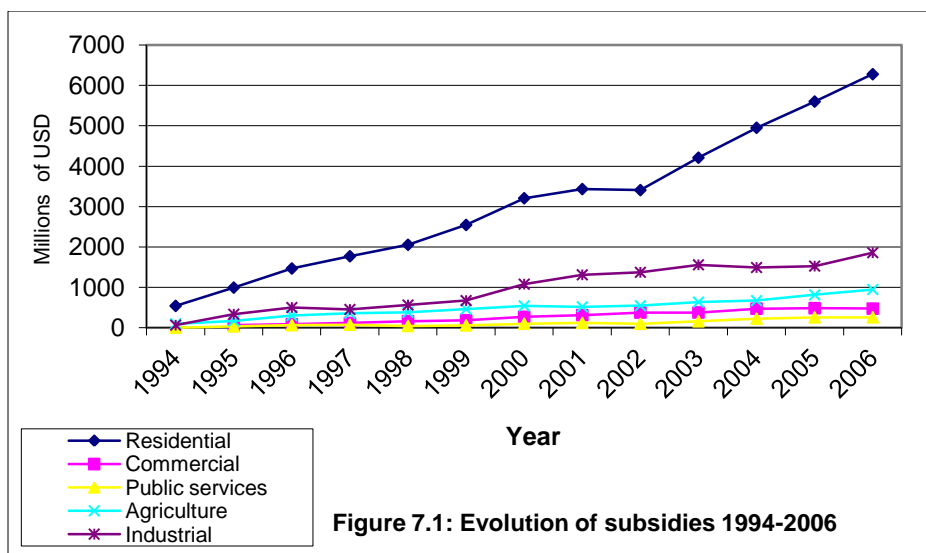
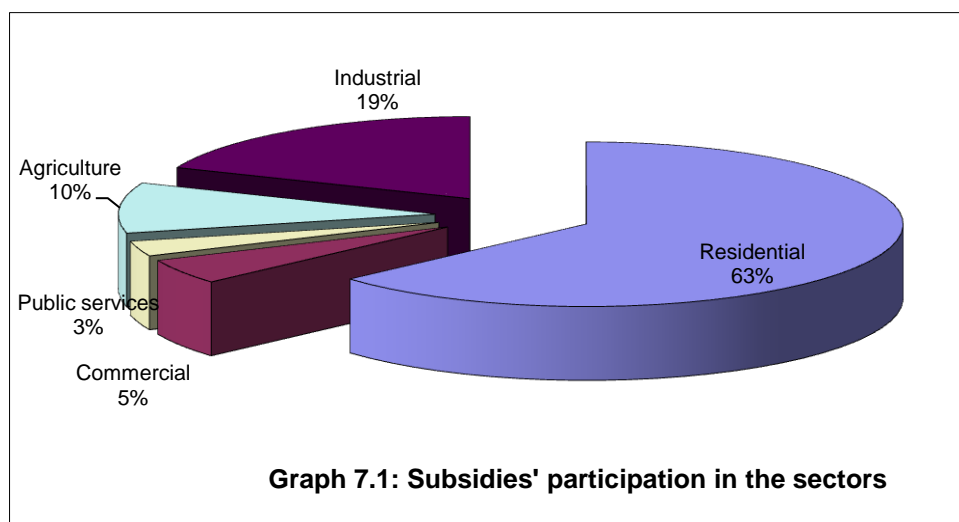


Figure 7.1: Evolution of subsidies 1994-2006

Source: Own projections with data from the President's report 2006 (Sexto Informe de Gobierno 2006)



Graph 7.1: Subsidies' participation in the sectors

Source: Own projections with data from the President's report 2006 (Sexto Informe de Gobierno 2006)

Figure 7.1 shows the evolution of subsidies. Particularly, it indicates that from 1994 to 2006, subsidies for the residential sector increased at an annual average rate of 23%. In other words, they increased from US\$541 million to US\$6,277 million; commercial sector 17%; public services 69%; agriculture 21%; and the industrial sector 32% (Sexto Informe de Gobierno 2006). In 2006, the total amount of subsidies paid by the government was US\$9,811 million, of which 64% went to the domestic sector, 19% to

the industrial sector, 10% to agriculture, 5% to commercial services, and public services received 3% (see Graph 7.1)¹⁹⁰.

According to López-Calva and Rosellón (2002), subsidies have a regressive structure. This is because they are established by considering the country's temperature. They consider that poorer people do not consume much electricity even in areas where temperatures are higher. The prices for the industrial and commercial sector reflect electricity generation's real costs. López-Calva and Rosellón consider that this regressive structure is reflected in agriculture, where poor electricity users do not have irrigation systems that can lead them to consume large amounts of power. Large industrial producers employ this kind of technology, so they benefit the most from the structure of the electricity tariffs.

The price-to-cost ratio in the CFE for the five sectors is as follows: in 2006, the agriculture sector received the highest level of subsidies, because it paid just 25% of the actual cost of electricity; medium and large industries got the lowest subsidy level, since they paid 93% and 92% of the costs respectively; the only sector that completely covered these costs was the commercial sector (see Table 7.9).

Table 7.9: The price/cost ratio in the CFE

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------|------|------|------|------|------|------|------|
| Residential | 0.41 | 0.42 | 0.5 | 0.45 | 0.44 | 0.42 | 0.4 |
| Commercial | 1.07 | 1.07 | 1.05 | 1.01 | 1.09 | 1.11 | 1.09 |
| Public services | 0.88 | 0.9 | 0.96 | 0.86 | 0.84 | 0.82 | 0.79 |
| Agriculture | 0.28 | 0.29 | 0.31 | 0.28 | 0.27 | 0.28 | 0.25 |
| Medium industry | 0.85 | 0.87 | 0.91 | 0.88 | 0.93 | 0.93 | 0.93 |
| Large industry | 0.85 | 0.83 | 0.89 | 0.86 | 0.92 | 0.91 | 0.92 |

Source: The President's report 2006

¹⁹⁰ Ibid.

Table 7.10: The price/cost ratio in LyFC

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------------|------|------|------|------|------|------|------|
| Residential | 0.24 | 0.26 | 0.31 | 0.33 | 0.29 | 0.28 | 0.32 |
| Commercial | 0.6 | 0.58 | 0.55 | 0.59 | 0.57 | 0.59 | 0.6 |
| Public services | 0.82 | 0.74 | 0.78 | 0.78 | 0.7 | 0.69 | 0.81 |
| Agriculture | 0.16 | 0.18 | 0.18 | 0.13 | 0.15 | 0.2 | 0.14 |
| Medium industry | 0.67 | 0.57 | 0.57 | 0.65 | 0.65 | 0.67 | 0.66 |
| Large industry | 0.74 | 0.63 | 0.59 | 0.67 | 0.68 | 0.71 | 0.66 |

Source: The President's report 2006

In the case of the LyFC, which supplies electricity to the states of Hidalgo, Mexico, Morelos, Puebla and Mexico City, subsidies are even higher. For instance, the agricultural and residential sector paid just 14% and 32% of the actual cost of electricity. Medium and large industry covered 66% of the costs (see Table 7.10).

To explain why the middle class is the sector most affected by the MEI privatisation and consequently more protected by the legislative power, López-Calva and Rosellón (2002) employ a distributional model developed by Newbery (1995). Their model essentially focuses on an analysis of the domestic sector. First of all, they used the Lorenz curve approach to study electricity consumption. So, they obtained the Gini coefficients and dominance tests for two years, 1992 and 2000. They used data from the National Income-Expenditure Survey and divided their sample into three categories: rural, urban and total electricity consumption. The results established that the subsidy structure is strongly regressive. For instance, they found that the poorest decile receives 6% of total subsidies. Conversely, the richest 30% of the population obtains 35% of the subsidies.

When they applied Newbery's methodology to determine the welfare effects of the price changes, they found that subsidised tariffs lack distributional characteristics. Particularly, they observed that the prices of drinking water and telephone services have much better distributional characteristics than electricity. They attributed this to the subsidies' distortion. The current subsidy structure leads to three distortions: 1) locational distortions; 2) regressivity in the allocation of expenditure; and 3) inefficient use of energy due to the fact that prices do not consider the economic cost.¹⁹¹ For these reasons, López-Calva and Rosellón consider that urban middle classes will be the most affected social groups if the privatisation is approved and that it will lead to the

¹⁹¹ Ibid.

elimination of generalised subsidies. This situation causes a negative perception about privatisations.

Their analysis is interesting in terms of the perspective of prospect theory. This is because they discuss how public surveys show that people see privatisations as a negative action against their interests. In particular, they employed the *Latin Barometer-Latinobarómetro 2002* survey¹⁹², which provided evidence on people's tendency to associate privatisations with massive layoffs and price increases. In other words, people feel comfortable with their status quo and therefore they are in the domain of gains.

7.6. PEOPLE'S ATTITUDES

Becerra and Fernández (2004) propose another alternative political economy analysis of people's perceptions of the MEI privatisation. Particularly, they tested the following hypotheses: 1) *party identification should play an important role in citizens' preferences toward privatisation. PAN members and PRI members will support privatisation while PRD members will oppose it;* 2) *individuals who present high levels of presidential approval will tend to support the MEI privatisation;* 3) *individuals from the north will be more likely to support the privatisation in contrast to those in the south;* 4) *individuals that have positive retrospective evaluations of national economy will be more supportive of the MEI privatisation;* 5) *higher-income individuals will be more likely to support the MEI privatisation;* 6) *older individuals will oppose privatisation;* 7) *females will be more likely to oppose the privatisation;* and 8) *individuals with higher education levels will tend to support the MEI privatisation*¹⁹³. To test these hypotheses they conducted a series of logistic regressions. They employed information from three different public opinion surveys carried out in 1995, 1999, 2003 and 2004¹⁹⁴.

Their results are interesting. In the case of the first hypothesis, they establish that the PRI and the PAN share the same economic ideology. People identified with these

¹⁹² This is annual survey that involves 19,000 interviews in 18 Latin American countries. Latinobarómetro Corporation is an NGO based in Santiago, Chile.

¹⁹³ Ibid.

¹⁹⁴ The first survey's question was "Do you agree or disagree with the privatisation of the following enterprises: Comisión Federal de Electricidad?" For the 1999 survey the question was "Are you in favour or against the privatisation of the electricity?" In 2000, the formulated question was "Please tell us whether you agree or disagree with the following statement, and how much: Private investment should be allowed in the energy sector" (Becerra and Fernández 2004, p. 10).

They used the term "privatisation" in the interviews. People perceive this term in a different way from the term "private investment's participation". In particular, they see privatisation as a very radical economic measure.

organisations' support of the privatisation. Particularly, people who identified with the PAN have a higher level of support for the MEI privatisation than the PRI. Individuals who identified with the PRD oppose the participation of private investment in the electricity sector.

The second hypothesis was rejected. They found evidence that presidential approval is not related to the privatisation programme. This is because such policies have been implemented by different federal administrations, which leads to the fact that none of the presidents can claim exclusiveness of the privatisations. For instance, they found no connection between President Zedillo's¹⁹⁵ approval and this economic programme.

In this sense, they determined that people from northern states oppose this policy as much as people from southern states. "This issue is more a national concern than a regional divide" (Becerra and Fernández 2004, p. 17). However, they found that people's support of privatisation is stronger in the north than in the south. They attributed this to the fact that northern states are more economically developed.

Individuals who consider that the economy is in good condition do not necessarily support the MEI privatisation. In 2000, the economy's positive condition did not influence them to support this policy. In 2003 and 2004, this feeling got stronger. Becerra and Fernández consider that this is because the political debate became stronger as well. In the case of people's age, it is not a determinant of their attitudes, because opposition toward privatisation is distributed throughout the population.

People's income levels had a positive impact on the support of privatisation. Particularly, they found that in 1995, an increase in income levels in certain groups of people with minimum wages (from groups 3–5 to 7–10)¹⁹⁶ strengthened support for privatisation by 15%. In 1999 and 2000, the same increase led to a support level of 7% and 18% respectively.

Mexicans with higher education levels tend to support this policy. In 1999, when a person's educational level moved from elementary school to college, their support of privatisation increased by 12%. The trend was similar in 1999 and 2000. Finally, the study states that women are 8% more likely to oppose the MEI privatisation than men.

¹⁹⁵ Recall that he presented to Congress the first proposal to privatise the MEI.

¹⁹⁶ They divided income levels into 10 categories.

Becerra and Fernández's model concludes that previous privatisations had a strong effect on people's perceptions. The banking system, which offers very expensive financial services to the public and was financially supported by the government during the 1995 financial crisis, has strongly affected public perception of a possible privatisation in the MEI. Also, it states that 60% of Mexican legislators use public opinion surveys as a means of gaining insight about people's positions on Mexico's key issues¹⁹⁷. They state, "this demonstrates that the study of public opinion has turned and will remain increasingly relevant in the study of Mexican politics" (Becerra and Fernández 2004, p. 20).

Their study is interesting because it offers answers to different questions about the MEI privatisation from the citizenry perspective. Although it was a political economy model, its structure is based on people's perceptions. They employed psychological elements, including people's perceptions, as a departing point, as López-Calva and Rosellón (2002) did to construct their model. One of the model's key results is that people see the MEI privatisation programme as a negative measure. This is because past privatisations have negatively influenced them.

7.7. CONCLUSIONS: PROSPECT THEORY VS OTHER APPROACHES

Although the approaches presented in this chapter offer different ways to analyse the situation in the electricity industry, PT (Chapter 6) addresses key issues that are not tackled by such methodologies or better explains the same situations. For instance, the interest group approach can be better studied by using the PT's *status quo effect*. In the analysis of the two unions, we can state that their benefits scheme, such as the retirement fund, leads electricity workers (insiders) to see themselves in a much more favourable position with respect to the average level of worker welfare.

A good way to survive the negative effects of a country that has been experiencing serious economic chaos¹⁹⁸ is to work for key employment sources that offer excellent benefits, such as the energy industry. CAPEM-Oxford Economic Forecasting (2005) states that during the Fox administration (2000–2007), more than six million people became unemployed and the country had an economic growth of only 2%; the lowest level in the last four presidential terms.

¹⁹⁷ As part of their research, they carried out interviews with deputies, senators and key members of the three main political parties.

¹⁹⁸ Forbes (2008).

In this way, under bad economic conditions, the objective of unemployed people, also referred to as outsiders, is to return to stability; that is, the re-establishment of the *status quo ante*. Weyland (2002) considers that outsiders focus their attention on reversing recent losses and preventing future losses. Consequently, outsiders tend to imitate insider behaviour (employed people), which means that people will try to get stable jobs.

According to *La Jornada* (2004b and 2005), hundreds of unemployed people try to buy permanent jobs in the electricity utilities. These positions are sold by the union leaders, who have been publicly accused of power abuse such as illicit enrichment, sexual harassment against women and vote buying¹⁹⁹ (*La Jornada* 2007a). The prices they charge for the job vacancies depend on the kind of work people require, whether it be permanent or short-term positions. The minimum price for a vacancy for joining the Mexican Electrical Workers Union (SME) is at least US\$5,000²⁰⁰.

Although this illicit behaviour has been denounced, no legal action has been taken against the union leaders: they state that the accusations are simply a lie (*La Jornada* 2004b). Among other benefits, the leaders receive a huge amount of union fees from their workers. For example, each year, the Sole Union of Electrical Workers of the Mexican Republic (SUTERM) receives more than 17 million pesos and the SME obtains over 12 million pesos in union fees, which are automatically deducted from the workers' accounts (Reforma 2007).

Under these conditions, it is difficult for the insiders to be willing to accept the loss of their economic stability, which is considered to be an increasingly scarce asset for society. The workers are not the only ones satisfied with this situation; the union leaders, who also enjoy the advantages, are convinced that the cost of renouncing

¹⁹⁹ Recall that the two unions are strongly linked to two political parties. The SME is part of the PRD's structure and the SUTERM is part of the PRI's popular bases.

²⁰⁰ Ibid.

Similar to the electricity industry, union leaders in the country's state-owned oil company, PEMEX, have been publicly accused of illicit enrichment and sexual harassment; no serious legal action has been taken against them (*La Jornada* 2007b). In the case of the sale of job positions, they sell them at prices between US\$9,200 and US\$11,500.

It is publicly known that the union's main leader, Carlos Romero-Deschamps, is a person who has been involved in many corrupt acts. In 2008, the Mexican Oil Workers' Union – Sindicato de Trabajadores Petroleros de la República Mexicana (STPRM) – received from PEMEX more than \$10 million just to "celebrate" the anniversary of the oil expropriation and Labour Day (*La Jornada* 2008b). Although the union gives him a net salary of \$762 per month, he wears expensive watches such as a Rolex Oyster Perpetual, which can retail US\$200,000. Also, he is the owner of a yacht that costs one and a half million USD. (*La Jornada* 2008b; Reforma 2008).

such privileges is extremely high²⁰¹. The money and influence led union leaders to have a very special position in the country's decision-making process, specifically in labour market policies. They have been taking advantage of this power for decades²⁰² and the power has turned into an obsession. For instance, Leonardo Rodríguez-Alcaine was the SUTERM's leader for 30 years. In 1997, he appointed his nephew as the new union's leader without any previous election.

As we can see, the difference between the interest group approach discussed in this chapter and our brief prospect theory interpretation is that we are taking into consideration other key explanatory variables that lead us to have a better understanding of union behaviour in the economy. First, we discussed the behaviour of the insiders and outsiders by considering external scenarios that influence their decisions, such as the country's economic conditions. Secondly, for PT, the analysis of union leader behaviour is a very important factor; this is because they are the organisations' main decision-makers. Castañeda (2006) only focuses his attention on the workers' benefits.

In other words, he ignores the leaders' status quo and how it can affect a privatisation plan for the electricity industry. Since they are obsessed with power, they are well positioned in the domain of gains (recall that in prospect theory, emotions play a fundamental part in any the decision-making process). So, if the government wants to carry out the privatisation, not only does it have to deal with the workers, but also primarily with the players who control them. The government has to think about complementary measures to reduce the insiders' feeling of loss. For instance, in Chapter 3, Mullainathan (2006) states that one of the policy implications of considering psychological variables is that policy makers can implement mechanisms that can make insiders believe that the government cares and protects their status quo against deterioration. Consequently, these mechanisms can trigger positive attitudes toward privatisation in the workers.

The other methodologies such as the distributional approach, people's attitudes and the electoral interests can be better analysed or complemented by using PT's structure. While these approaches make important contributions to clarifying the established patterns of regular politics, they lack innovative and flexible resources for analysing the

²⁰¹ For example, the leader of the railway trade union, Victor Flores, has twelve thousand legal demands for stealing \$2 billion from the worker savings fund (Leyva et al. 2006). Moreover, he has been accused of murdering workers who opposed him.

²⁰² The majority of the country's union leaders have been re-electing themselves. They modify union structures, which can allow them to continue in power.

political dynamics of market reforms, particularly in the Mexican electricity industry. Prospect theory offers a novel and empirical micro foundation for political analysis that diverges from conventional methods (e.g. rational-choice approaches).

In this way, it is an alternative to the model that has been employed in political science, including the subfield of comparative politics (Weyland 2002). For example, the difference between the political game theory model presented in this chapter, the Austen-Smith and Bank model and our PT analysis is that the former excels in parsimony, strong rigidity and proper elaboration. On the other hand, behavioural decision theories are complex and lack a well-structured model.

However, this disadvantage is one of PT's main strengths. This is because it depends on empirical bases that allow us to understand the complicated systems in which people in fact behave. In other words, PT's empirical structure leads research projects to have more accurate results, because it considers people's behaviour in terms of gains and losses. For example, our PT analysis in Chapter 6 pays attention to how people used analogies such as California's electricity crisis to determine what kind of risks can be involved if the privatisation is carried out without a strong regulatory framework. Since the players saw the Mexican electricity industry reflected in the American case, they behaved in a risk-averse way.

Rational choice employs impractical assumptions about human problem solving or from simplifying ideal-typical postulates (Tversky and Kahneman 1986). The Austen-Smith and Bank model does not consider how the players frame their decisions by considering other variables that can affect such options, including analogies or the status quo as a reference point. In this particular case, the model only focuses its attention on how the *formateur*²⁰³ can build a coalition to successfully approve the privatisation in Congress. This means that the model's centre of attention is on the outcome of the bargaining process. The model does not allow the researcher to get more information about the players. This situation cannot lead her to obtain robust results.

These kinds of theoretical frameworks are in fact realistic and accurate (Tsebelis 1990; Weyland 2002). However, they depend on stable settings, meaning that actors' behaviour and their interests are always fixed, which limits the models' results in terms

²⁰³ See Section 7.4.

of predictability, time horizon, etc. In political science, empirical accuracy over parsimony is a crucial priority (Weyland 2002). In conclusion, we consider that the approaches analysed in this chapter offer alternative theoretical frameworks to understand the reasons behind the delay of the MEI privatisation.

CHAPTER 8: CONCLUSIONS

This chapter offers summaries of the key aspects of the thesis, an analysis of the possible factors that can lead to a change in the MEI's status quo (SQ) and a discussion of the application of prospect theory to different organisations. In particular, in Section 8.2.1 we provide the Mexican context, which helps us to define possible scenarios for the MEI. Then, in Section 8.2.2 we discuss the factors that can maintain the MEI under public ownership and those that can lead the government to privatise this industry. Moreover, we speculate how people and political actors could react if the government proposes to privatise the MEI. Section 8.3 discusses the applicability of PT to group behaviour.

8.1. CHAPTER SUMMARIES

Chapter 2 offered a discussion of the key elements related to public and private ownership. Particularly, it considers that one of the advantages of public ownership is that problems of *incomplete contracts* can be addressed effectively. This is because governments have the mechanism to interfere with contract irregularities and therefore prevent opportunistic benefits for one of the parties involved in the economic transactions. On the other hand, Chapter 2 considers potential benefits from changing from public to private ownership. For instance, under private ownership the economy can become more efficient.

Another important discussion in Chapter 2 is that state-owned enterprises (SOEs) respond to political objectives. More specifically, political players tend to use the economic resources of SOEs to favour interest groups. This is caused by the weak organisational structure of the SOEs and the non-transparent operations within these companies. These situations commonly occur in countries with high corruption levels as in Latin America. In addition, we discussed the use of SOEs as mechanisms for influencing the electoral system. Projects (e.g. white elephants) that help politicians to attract more voters to remain in power are cases in point.

Chapter 2 then pays special attention to the role of regulation in privatisation. To maximise the benefits of privatisation, governments should set up a regulatory framework before companies start operating under a private ownership structure. The regulatory framework for an industry has to be structured by mechanisms that can regulate prices, investments, advertising, product quality, etc. In addition, regulation has to protect consumers from monopoly abuse and promote efficiency and competition.

Chapter 3 offered a review of PT and its application to political dynamics. Firstly, the chapter placed particular emphasis on how prospect theory was developed. It showed that the principles of the EUT proposed by Neumann and Morgenstern (1947) can be violated. The violation of such axioms constitutes important findings, as most decision-making models in economics and political science are based on these assumptions. Kahneman and Tversky developed prospect theory as an alternative approach to understanding human behaviour.

Prospect theory can help explain risk behaviour in politics. Identifying the domain of a specific situation helps predict what kind of behaviour to expect from decision-makers. If people are in the domain of gains, they will be risk-averse. Conversely, if people are in the domain of losses, they will be risk-takers. PT suggests a simple framework to understand people's risk behaviour. Defining risk behaviour requires knowing in which domain people are located.

Chapter 3 discussed some important component parts of PT such as the endowment effect, loss aversion and strategic framing and discusses critics of PT. The chapter also discusses the empirical implementation of the PT suggested by Mercer (2005a). The status quo, aspirations, heuristics, analogies and emotions can help us to understand decision-makers' domains.

Chapter 4 offered a review of the different motives that led developed and developing countries to carry out structural reforms in their electricity industries. Some determinants of electricity reforms in developed economies had ideological bases. In the case of developing economies, the international financial institutions (IFIs) such as the World Bank and the International Monetary Fund played a key role in promoting these policies. These organisations offered financial support to governments to renegotiate their debts. This was conditional on the application of economic measures as suggested by the Washington Consensus.

However, there were other particular reasons that led governments to reform their electricity sectors. The Chilean electricity industry is under private control because Augusto Pinochet imposed radical neoliberal policies that favoured private sector participation in the economy. Other Latin American governments implemented these policies because their electricity sectors were experiencing adverse conditions and also because they followed the electricity reform in Europe. Developed and developing countries applied similar models of reforming the electricity sector. Some economies

imitated the British and Chilean electricity models, adapting them to their specific conditions.

Finally, Chapter 4 reviewed the Ley del Servicio Público de Energía Eléctrica (LSPEE) – Electricity Act – and the electricity privatisation proposals developed by two different federal administrations. The LSPEE was created in 1975 to confirm that the MEI can only be operated by the government. However, it was modified by President Salinas to allow the partial participation of private investors in Mexico's electricity generation system. The reform of this law allowed Independent Power Producers (IPPs) into the sector but it did not introduce privatisation.

President Zedillo suggested the first proposal to privatise the MEI. It focused on modifying the Constitution so the government could change the MEI's structure from public to private ownership, considering private sector involvement in electricity generation, transmission and distribution. President Fox presented a second privatisation project, which also had the objective of modifying the Constitution. Although the project was similar to Zedillo's proposal, it had some technical differences that were not made clear and led to severe criticism by energy experts and the public. According to our interviews, the government's main objective was to modify the Constitution to have power to facilitate privatisation of the MEI.

It is important to state that the LSPEE was considered a partial liberalisation of the MEI. This law did not consider a change in the sector's ownership structure. In other words, private companies would be able to generate electricity and sell it to CFE. Although the LSPEE was modified, the whole industry was maintained under public ownership. Conversely, the proposals presented by Zedillo and Fox considered reforming constitutional articles 27 and 28. These articles grant the nation exclusive control over the energy sector. So, to privatise the MEI, these articles would have to be changed.

Chapter 5 presented an analysis of the privatisation programme in Mexico and the partial participation of the private sector in the MEI. As an introductory discussion, the chapter offered a historical review of the key economic events during President Cárdenas' administration. In terms of energy policy, it was one of the most important periods in the country. Oil expropriation and the nationalisation of electricity were part of the strategy to initiate the country's industrialisation process. The public ownership of the energy sector became constitutional. During the Cardenismo and the following

presidential periods, many SOEs were created to strengthen the economy, and at the same time the Institutional Revolutionary Party (PRI) developed its political structure.

Chapter 5 presented two important privatisation cases: the privatisation of the banking system and Telmex. Corruption, political interests and an inadequate planning process were some of the factors that influenced the sale of these companies. As part of our analysis we showed that the private sector's participation in the MEI under the LSPEE has not led to positive results. Although the electricity industry has not been privatised, the chapter showed that the operation of the IPPs and their financial scheme (Pidiregas) have been very costly to public finances. Moreover, the analysis of a contract between CFE and a private company states that the government is paying a very high price for its natural gas supply.

In Chapter 6, we proposed PT to understand why the electricity privatisation proposals were not carried out. Our research found that President Zedillo's MEI privatisation proposal could not be implemented because the PAN was in the domain of gains. The economic, social and political conditions of the country led people to support a political outsider. This scenario put the PAN in the domain of gains and therefore it decided not to support the PRI. Similarly, the Fox administration was unable to implement its privatisation project because the three key political parties in the country were risk-averse. Moreover, the industry was not in crisis and therefore this factor deterred decision-makers from implementing this policy.

Another interesting finding was that decision-makers tried to manipulate people's perceptions to make them believe that the MEI was in a severe crisis, and use this factor as a key reason to privatise the sector. This situation confirmed one of PT's predictions applied to political science: *strategic framing*. In other words, the government tried to artificially place people in the domain of losses by influencing their perceptions with the crisis argument. Our research found evidence of the *endowment effect*. The historical discussion in Chapter 5 showed that the energy sector represents a valuable asset for Mexican society. If the Constitution is modified and the sector privatised, people will feel they are losing something that belongs to them.

Chapter 7 discussed other approaches to analysing the second research question. It showed that the political fragmentation perspective implies that since the 1997 election, Mexico's political system moved from a majoritarian to a fragmented structure. In other words, it became a political system in which no political party had enough power to

approve any kind of reform. According to this perspective, when the PRI had absolute power in Congress it was easier to satisfy the president's demands. For example, during the fifty-fifth (1991–1993) and fifty-sixth (1994–1997) legislatures, the bills proposed to congress by the president had a success rate of 98% and 99% respectively. This shows that almost all the policies introduced by the federal administrations were approved.

Another interesting analysis discussed in Chapter 7 was the distributional approach, which stated that politicians are not willing to privatise the MEI because the middle classes will be severely affected by it. In particular, it concludes that in the central part of Mexico, people pay 32% of the actual cost of electricity. According to this research, people expect that if privatisation is carried out, generalised subsidies will be eliminated. Consequently, they will not support MEI privatisation.

In conclusion, this study has sought to explain why the privatisation programme of Mexico's electricity industry has not been carried out. By exploring different theoretical models of decision-making as applied to political science, we found that prospect theory (PT) offers a non-traditional way to understand the political dynamics of privatisation. We find that PT can be considered as an alternative to traditional theories of choice, particularly expected utility theory (EUT). Drawing on psychology, PT observes that EUT does not properly describe the way people make decisions under risky scenarios. Consequently, this situation does not allow researchers to predict adequately a decision-maker's choices. For instance, PT shows that EUT does not give any explanation of how the framing process can influence people's options. Moreover, it does not clarify why people exhibit risk-seeking behaviour under some situations and risk-averse behaviour in others.

We consider that this thesis has made an important contribution to the empirical application of prospect theory. As was shown mainly in Chapter 6, we developed a methodological framework that helps to understand the political dynamics of the MEI privatisation in terms of decision-making processes. We employed a set of mechanisms that allowed us to know how the actors involved in the energy policy visualised the different factors that influenced their decisions. The thesis offered two different models based on specific explanatory variables relevant to the Mexican case.

The thesis also made a significant contribution to understanding decision-making by governments. The theoretical framework proposed in this study can help policymakers

understand the nature of policy decision-making processes. For example, by using PT and Mercer's techniques, policymakers can anticipate how people will frame their options. Another use of this behavioural theory of choice can help other organisations (e.g. NGOs) to detect when and how governments are influencing people's perceptions to achieve specific objectives. For instance, a potential threat to survival can lead groups of people to support risky policies.

8.2. WHAT FACTORS CAN LEAD TO CHANGES IN THE MEI'S SQ?

8.2.1. The Mexican Context

As was stated in Chapter 6, the 2000 presidential election represented an opportunity for Mexicans to change the SQ. People's risky behaviour led them to put all their "hopes" in one man, Vicente Fox. However, once Vicente Fox took office he changed his political behaviour completely. Not all his campaign promises were carried out. Under Calderón's government, the country's economic and social conditions continued to deteriorate. Even the US Secretary of State, Hillary Clinton, was extremely concerned about the situation in Mexico. According to a confidential cable published by WikiLeaks, Clinton was very worried about Calderón's behaviour and his leadership style. In this report, Clinton states: "F-H have indicated that Calderón and his administration are currently under great stress from the drug war, economic collapse, and his party's midterm election losses ... we are still interested in how these current stresses are affecting his personality and management style and how that style is affecting the running of the government" (El País, 2010a).

The Secretary of State sent the US embassy in Mexico City the following questions: "1) How does President Calderón react to viewpoints that are different from his own? (Does he like to get into debates with people who disagree with him? Does he prefer to listen to their viewpoint, think on it for a while, and come back with a response?); 2) What are the effects of his management style on those who work for him?; 3) How would you describe Calderón's personality? What values/beliefs/behaviours does Calderón hold most dearly, and respect most in others (truthfulness, loyalty, respect, etc.); and 4) Has job stress affected any of the security and economic sections of his cabinet members' health?" (El País, 2010a).

The US Ambassador to Mexico, Carlos Pascual, reported to the Secretary of State the key information about Calderón's government. In terms of the political and economic context, the classified cable states that "President Calderón has entered the last three years of his six-year term facing a complicated political and economic environment ...

Calderón's bold plan for ten ambitious areas for reform has yet to translate into politically viable initiatives ... his personal popularity numbers have dropped, driven largely by massive economic contraction and a public sense that there is little strategy to create new and sustainable jobs ... PRI insiders indicate that the party is unlikely to support any major reform efforts over the next several years – no matter how necessary – that could be publicly controversial” (El País, 2010b). Moreover, the report indicates that Calderón's drug war, in which 100,000 people have died in drug-related violence (Tuckman 2012), has failed.

In the 2000 presidential election, Cuauhtémoc Cárdenas was the left-wing candidate from the PRD. Then, in the 2006 presidential election, Andrés Manuel López Obrador (AMLO) represented the same political party. Both politicians promised to end the social and economic crisis. Similar to Fox, they were risky choices but in a different way. Their political promises were more radical because they called for a “profound transformation” of the country. Although the programmes presented by Cárdenas and AMLO were radical, they represented realistic alternatives at a lower risk than their political opponents.

These politicians rejected the application of neoliberal policies. They offered economic strategies that had the objective of protecting the energy sector. In particular, they opposed the privatisation of the oil and electricity industries. They stated that this sector had to be strategic factor to trigger economic growth and therefore had to be kept under public ownership (López-Obrador, 2004). They considered that the energy sector must continue as part of the country's legacy. In this way, a PRD government could have generated conflict, particularly with key political and economic interest groups. Cárdenas was defeated because risk-seeking in the domain of losses influenced people's electoral behaviour towards Fox. On the other hand, AMLO lost the election by just 0.56% of the vote to Felipe Calderón of the National Action Party (PAN)²⁰⁴.

These two Mexican elections resemble the case of Brazilian President Luiz Inácio Lula da Silva (2003–2010), “Lula”. According to Weyland (2002), in the late 1980s Brazil was experiencing diverse economic problems. For instance, inflation reached 44.3% at

²⁰⁴ There were many irregularities in the elections that have been well documented. For instance, President Fox publicly supported Felipe Calderón (McKinley, 2006). So AMLO demanded a recount of the votes in order to clear any doubt and suspicion of electoral fraud. However, the Federal Electoral Tribunal did not allow this action.

the end of 1989. In the same year, opinion polls in different cities, such as Niterói, showed that 84% of people stated that the economic situation in the country had not changed during the last four years. This adverse scenario pushed a large proportion of people into the domain of losses and therefore they chose Fernando Collor de Mello as Brazil's president. Collor de Mello represented a very risky option because his economic programme was highly doubtful. Moreover, he had an unpredictable personality which worried his own supporters²⁰⁵.

Similar to AMLO and Cárdenas, Lula had a radical economic programme. His objective was to carry out a deep transformation of society. However, Brazilians discarded Lula and opted for Collor. Popular and less educated sectors supported Collor, whereas Lula was supported by educated sectors that paid attention to political programmes. People focused on Collor's personality and rejected Lula's ideological radicalism. In the case of Mexico, young and better educated people support AMLO (ADN Político, 2012b). Conversely, less educated individuals prefer PAN and PRI candidates.

The 2000 political alteration did not change the SQ in the country. The PAN governments continued carrying out the same corrupt practices promoted by the PRI regime. The PAN was unable to improve the socioeconomic conditions in Mexico and therefore the economy is in a very critical situation. For instance, there are 57 million people in poverty, 13 million people live in extreme poverty and 20 million people are unemployed (Turner, 2012). The diplomatic cable confirms that the government has failed to solve the country's problems. In terms of prospect theory, the document shows that Calderón has been in the domain of losses. Consequently, he has been taking risky choices which have negatively influenced the running of the government. In other words, Calderón's behaviour can be considered to be one of the factors responsible for the crisis in the country.

8.2.2. The Possible Scenarios

Under these circumstances, there is evidence that a large number of people are disappointed with PRI and PAN governments and therefore do not accept the country's SQ. They are willing to support a political programme that carries out a profound transformation of the economy. Since the 2006 controversial presidential election, people have strongly supported the economic programmes proposed by left-wing politicians. This also means that a significant segment of society is willing to choose a

²⁰⁵ Ibid.

political option that protects the energy sector. If people decide to support these economic strategies, the MEI will be maintained under public ownership.

If the PRI and the PAN continue to rule the country, will they be able to privatise the MEI? In Chapter 6 we stated that the absence of the crisis argument in the MEI did not lead decision-makers to privatise this industry. The key players in the energy debate considered that the electricity sector was in good condition, so there were no real reasons to make that important choice. If the government proposes to privatise the MEI by again using the crisis argument, it will be very difficult to reach that objective. Political players know well that the electricity sector is still in good condition. They know that the country has an adequate electricity generation system, which can completely satisfy demand.

What might lead these two political parties to carry out the privatisation? In Chapter 5 we analysed how the Mexican government allowed partial private sector participation in the electricity industry under the LSPEE. Companies such as Mitsubishi Corporation, Électricité de France, Union Fenosa, and Transalta Energy Corporation have spent a lot of different resources to participate in the MEI. As a result, these corporations have reached a total market share of almost 40% and will receive US\$111 billion from electricity sales to CFE (see Chapter 3). To get these economic benefits, the government generated adequate and positive conditions for the companies' investments such as the Pidiregas financial scheme. These conditions allow energy companies to avoid the "escalation commitment phenomenon"²⁰⁶.

This phenomenon occurs when people adhere to a course of action (e.g. an investment programme) that is considered unsuccessful. Thus, decision-makers tend to invest more resources to recoup their sunk costs. The concept of sunk costs is an interesting factor that has been discussed in our research. As stated in Section 3.3.2.2, sunk costs are all the resources that have been spent on an investment by individuals or organisations. These resources are considered as irrecoverable. Under PT's perspective, these costs are very important in people's decision-making processes. The positive economic scenario in the energy sector will not make private companies frame their investments as a loss, and therefore they will not make very risky choices such as spending more economic resources to recover such costs. This means that private investors are satisfied with the SQ because they are obtaining very important

²⁰⁶ Ibid.

benefits from the Mexican electricity market. As a result, they are in the domain of gains.

Although private companies are satisfied with the MEI's SQ, they can aspire to have complete participation in the industry. This aspiration will move investors from the domain of gains to the domain of losses. According to Mercer (2005a), when private interests aspire to improve their market conditions, these groups always frame their market disputes as losses. This means that the decision to privatise the MEI is a risky choice for these companies and the political parties that support this policy. The adverse economic, social and political scenario in Mexico makes privatisation a risky choice. Moreover, the strong political opposition to these policies and the endowment effect²⁰⁷ will complicate the situation.

People's emotional attachment to the MEI will be an obstacle for political parties that propose privatisation. People will be unwilling to lose the electricity industry because they feel it is part of their possessions. As stated in Chapter 6, the Mexican Constitution represents the "contract" that states that this sector is a strategic activity strictly reserved for the state. If the PRI and the PAN propose privatising the electricity sector, this will trigger people's negative emotions. Under the current critical situation in the country, these feelings can lead people to behave in a violent way to stop the privatisation. Since people will frame the privatisation as a loss, they can take risky options. According to Zhang and Fishbach (2005), the endowment effect can be amplified by negative emotions. More specifically, feelings such as anger will deter people from trading the MEI. This means that these emotions will considerably increase the price that Mexicans will be willing to accept in exchange for privatisation.

Vis (2009) states that there are specific conditions that can lead governments to carry out unpopular policies (see Section 3.3.4.1). She indicates that under PT's perspective, a deteriorating socioeconomic condition combined with one or two other factors, for example a deteriorating political position or a right-wing government, can put politicians in the domain of losses. Vis considers that the stronger the political opposition, the less the government has to lose when promoting unpopular economic strategies. Consequently, the government is willing to take the risk involved in an unpopular policy in a desperate attempt to try to recoup some of the losses experienced (Vis, 2010).

²⁰⁷ See Section 3.3.2.1.

By proposing and approving the privatisation of the MEI, the PRI and the PAN have nothing to lose. Their political opponents are strong and people are disillusioned with them. As a result, they can carry out a very risky decision that will allow them to implement part of their neoliberal agenda in the energy sector. Evidently, these parties will try to privatise the MEI under a very chaotic scenario and will ignore all the irregularities that have been found in that industry. This situation will strengthen people's negative emotions against such political organisations. When the Fox administration proposed the privatisation of the MEI, the PAN was still in the domain of gains because they had just defeated the PRI regime. The typical argument is that the better the political position, the better the prospect for carrying out unpopular policies (Vis, 2009). However, PT predicts that under a deteriorating political position, governments are able to implement such risky and costly strategies.

As was stated by Vis (2009), there are specific factors that can put leaders in the domain of losses. Is there another possible scenario that can lead decision-makers to privatise the MEI? In Chapters 5 and 6 we discussed important aspects of the country's unique authoritarian system which defined the development of the country for seventy years. The PRI regime allowed Miguel de la Madrid (1982 – 1988) and Carlos Salinas (1988 – 1994) to implement the neoliberal agenda in Mexico.

The excessive concentration of power, severe media censorship and absence of freedom of expression were some of the mechanisms that the government used to rule the country. Moreover, political repression was common practice to stop opponents who were against the president's strategies. These measures facilitated the application of very risky policies such as the reform to the LSPEE (see Section 6.3.1) and the privatisation of important SOEs. Then, in 2000 the continuation of the PRI regime was interrupted by an outsider who won the presidential elections because people were risk-seeking in the domain of losses (see Section 6.3.2.2).

If this political group returns to the presidency, the new PRI government can make important economic decisions. The PRI can take this opportunity to continue with the electricity privatisation strategy which could not be implemented by the last PRI president, Ernesto Zedillo (see Section 6.3.2). Once the PRI assumes power, it can start controlling the Congress together with the PAN and other political groups. As a result, they can modify the Mexican Constitution to allow the complete participation of private investors in the electricity sector. We consider that a PRI government can be willing to use some authoritarian measures to facilitate the privatisation of the MEI.

Only the PRI has enough power to carry out severe measures to reach its objectives. Since the PRI was founded, many economic, political and social organisations became part of this party (see Section 5.2.4). The PRI still has strong support from such interest groups, including the military.

The government can be prepared to respond against large-scale protests and other types of action that can put the MEI's privatisation at risk. For instance, the government can send the federal security forces to the streets to intimidate and control protesters. The adoption of authoritarian behaviour can push decision-makers to brave the dangers of popular rejection. This situation leads both citizens and leaders to display risk-seeking in the domain of losses.

Is there another factor that can trigger this authoritarian behaviour? We consider that decision-makers can see that there is a considerable amount of sunk costs involved in the political dynamics of the MEI's privatisation process. They can attempt to recoup such costs, hoping to attain the privatisation strategy's initial goals and therefore engage in riskier behaviour. In other words, they can stick to the original plan "cueste lo que cueste", "whatever the cost may be". However, under the current adverse socioeconomic situation in the country and the strong opposition to the privatisation of the electricity sector, that decision can put them into an escalating commitment scenario. This means that the government's actions, including coercive mechanisms, will be unable to achieve privatisation.

The new PRI government and its political allies in the Chamber of Deputies can change constitutional articles 27 and 28. If the opposition and protest against privatisation become stronger, the Senate can be forced to block the modification of these articles to control such a chaotic scenario. Prospect theory indicates that when there are sunk costs incurred in a project that can be considered a failing decision, and such costs still have economic value, subsequent decisions about whether to continue the project are likely to be framed as a decision between losses (Whyte, 1993).

We consider that Mexico has very serious problems caused by the governments' bad risky decisions. One of these choices was the incorrect privatisation of key SOEs, which did not generate positive results for the economy. So this scenario could be repeated if the MEI is privatised under the country's current situation. This will have a strong negative impact on society. Moreover, the extremely high corruption levels, the

lack of a regulatory framework and the strong political interests in the electricity sector are some of the factors that will not lead to a successful privatisation.

In the international context, some energy experts have criticised the British electricity model (see Section 4.3.1). Thomas (2006b) states that in 2001, different problems started arising in this electricity system that could put at risk developed and developing countries. Since many countries have applied the British model to their national electricity systems, they could also be in a very critical situation. Some of the main problems of this model, which has been promoted by organisations such as the World Bank, the International Monetary Fund (IMF) and private companies (e.g. PricewaterhouseCoopers), are connected with regulation and the design of the wholesale market²⁰⁸. Thomas states that some of the good results in the British electricity industry were not connected with the privatisation. Such results were generated by external factors (see Section 4.3.1). “The industry is now dominated by a handful of many foreign-owned integrated generator/retailers with no incentive to compete against each other” (Thomas, 2006b, p. 1982).

These problems can be solved in developed economies because they have the financial resources. Conversely, developing countries which have carried out electricity privatisation will have a difficult scenario, because they have to follow the policies of the International Financial Institutions (IFIs)²⁰⁹ to maintain the financial support of these organisations. So these countries will be unable to choose other options. Once developing economies commit to privatisation in exchange for financial aid, the policy has to continue “no matter how badly it goes” (Thomas 2006b, p. 1975). Thomas states that even the World Bank has recognised that the privatisation of electricity industries is an unpopular measure that has a disapproval rate of more than 80% in Latin American economies. He indicates that IFIs must acknowledge that these policies have failed. Moreover, IFIs must help countries to fix the mistakes generated by these economic measures.

The MEI’s privatisation proposals were considered very risky policies for different reasons. For instance, they were mainly based on the British electricity model (See Section 4.4.2) and there were concerns about the regulatory framework. In Chapter 6 we stated that key decision-makers considered that Vicente Fox’s privatisation strategy was a risky policy because there was no regulatory framework. The heads of the

²⁰⁸ Ibid.

²⁰⁹ Ibid.

Energy Regulatory Commission, the Federal Competition Commission and the Federal Electricity Commission recognised that the lack of regulation represented a critical problem in the privatisation strategy. Moreover, the California and Argentina electricity crises were used by PRD leaders as reference points (see Sections 6.4.1.2 and 6.4.2.1). Thus, the riskiness of the privatisation strategies was always perceived to be very high by the political players.

The Pidiregas financial scheme is another problem in the electricity industry. The private sector participation in the MEI has been extremely costly for the public finances. As was analysed in Chapter 5, the Pidiregas projects are generating a huge debt that will be paid by increasing taxes or by reallocating resources from other sectors' programmable budgets. What is more, there is an oversupply of electricity that has not been used and it is generating high costs for the economy. According to a report prepared by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC)²¹⁰, the Pidiregas projects could have a strong effect on CFE's financial structure. In particular, this organisation states that the debt generated by the Pidiregas contracts could be financially unsustainable. ECLAC indicates that the government is absorbing the investment risks and that these projects will be maintained by reducing significantly the resources of other government programmes.

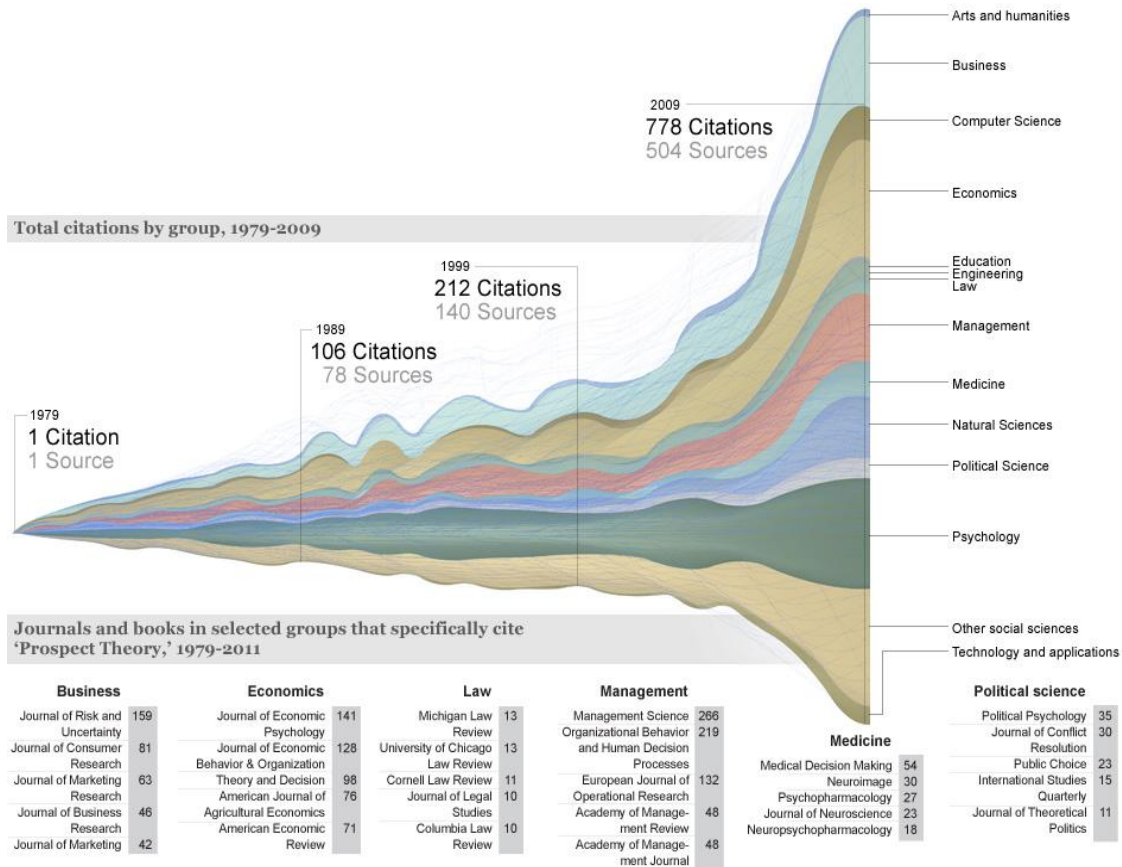
Under these conditions, we recommend that the government focuses its attention on solving the economy's critical problems such as the high poverty levels and the different problems in the MEI. Before planning an increase in private sector participation in the MEI, the government should work on improving the conditions in this sector. Moreover, this industry is in adequate condition and therefore can completely satisfy the economy's electricity demand. Thus, there is no urgency to propose a radical change in the MEI's ownership structure. By solving the problems in the electricity sector, the government could reduce people's negative emotions. In particular, people will see that the government is interested in strengthening the electricity industry. This action could reduce the endowment effect, which is an important factor that does not allow people to trade the MEI.

8.3. THE APPLICABILITY OF PROSPECT THEORY TO GROUP BEHAVIOUR

In 1979, psychologists Daniel Kahneman and Amos Tversky published their research entitled "Prospect Theory: An Analysis of Decision under Risk" in the journal

²¹⁰ See Rozas et al. (2012).

Econometrica. It has been more than 30 years since PT was developed as an alternative to the expected utility approach. Since then, PT has been cited many times in different journals and books. Moreover, the theory has been applied in a diverse range of disciplines.



Source: Thomson Reuters Web of Knowledge (2011)

Figure 8.1: The influence of prospect theory

The above figure shows part of the influence of PT in different disciplines. We can observe that political science is one of the areas in which PT has been used in a limited way. In Chapter 3 we discussed why researchers have shown little interest in using PT as a methodological framework. We stated that the reasons behind the lack of interest in PT are connected with the theory's specific limitations: 1) it lacks a specific framework that can fit reality with theory; and 2) it lacks applicability to group behaviour. However, our research offered a discussion about the solutions to these problems. In addition, Chapter 3 indicated that the real problem lies in the resistance to the field of psychology rather than to problems inherent with the theory. There is an

“aggressive uncuriosity” (Rabin 1998, p. 41) which will decrease as economists and political scientists get used to psychology.

In Section 3.3.3.2 we stated that prospect theory was originally developed as a theory of individual decision-making. Consequently, one of the criticisms of this psychological theory is that it cannot be applied to collective decision-making. A simple way to circumvent this problem is to apply PT to individual decision-making. For instance, two of the political studies discussed in Chapter 3 applied PT at the individual level. Part of Weyland’s (2002) PT analysis focuses on individual behaviour. He found that presidents from some Latin American economies implemented drastic neoliberal policies because they had a risk-seeking behaviour in the domain of losses. Similarly, part of McDermott’s (1998) PT application focused on the individual behaviour of Presidents Eisenhower and Carter to understand why they made very risky decisions in the field of international politics.

Another way to directly to reconcile individual and collective decisions is when a person is extremely dominant, group decision can be considered as an individual decision. A highly concentrated political system constitutes a very good example of this situation (Vis 2009). In Chapter 5 we offered a discussion of how key privatisations were carried out during the PRI regime. During this period, the president had absolute control of the government and therefore we consider that the president himself had a dominant role in the decisions about the sale of SOEs. For instance, some banks were sold to investors who were closely related to President Salinas (see Section 5.3.1.2). This evidence indicates that the decision was highly influenced by Salinas’ individual considerations. It is likely that a direct order went from the president to his subordinates. In this particular case, the application of PT to understand part of the decision-making process behind the banking system’s privatisation agenda is focused on individual behaviour. However, only rarely are key political decisions made by people acting alone. We consider that the group decision-making process is a very important factor in political science. The term collective decision-making refers to any consensual decision that is generated by a previous discussion of the alternatives and other factors that are connected with a particular problem (Whyte, 1993).

Our research mainly studied the decisions and behaviours of different groups of people. The discussion of the privatisation programme offers a good example of how policies were the product of group decision-making. The privatisation of Teléfonos de México (Telmex) clearly shows how different interest groups were involved in that

process. These groups had different opinions about the sale of that telecommunications company. Salinas' government was assisted by external consultants who disagreed with the way Telmex was sold to Grupo Carso. More specifically, they considered that this company had to be split into other new companies. Similarly, the World Bank participated in the decision-making process and supported the idea of a more competitive telecommunications sector rather than selling Telmex as a monopoly (see Section 5.3.1.1). However, the World Bank changed its position and supported the government's final decision to privatise the company without modifying its monopolistic structure.

Although part of the decision to sell some banks to President Salinas' friends was based on his own personal position, collective decision-making also played a key role in the process. People from the Ministry of Finance, the Bank of Mexico and private consulting groups such as Merrill Lynch and Goldman Sachs were involved in the sale of the banks (see Section 5.3.1.2). In the case of the electricity sector, the decision to block Zedillo's electricity privatisation proposal was not made by Vicente Fox. That choice was the result of a discussion between actors who closely participated in Fox's political strategy.

The political dynamics during the debate about Fox's electricity privatisation proposal occurred at a collective decision-making level. Fox's administration used the crisis argument as the initial strategy to influence people's perceptions. Subsequently, this plan changed to focus on promoting a more competitive electricity sector. In our interviews, the heads of the Federal Electricity Commission (CFE) and the Energy Regulatory Commission (ERC) agreed with both arguments. This shows that these decision-makers had a consensual position about the MEI. As we can observe, important economic and political decisions were the product of collective decision-making processes.

The above cases share a common factor. The discussion of different alternatives is the element that is behind these group decision-making processes. The people who were involved in the privatisation of Telmex and banks discussed different choices, scenarios, etc., before they reach an agreement about the sale of these organisations. It is possible that experts from the World Bank, consulting firms and Mexican authorities engaged in a debate in which everybody stated their point of views about these privatisations. We consider that before the PAN decided not to support Zedillo's electricity privatisation project, there was a discussion in which the PAN members

analysed the advantages and disadvantages of that choice. Similarly, the radical change of strategy by Fox's administration during the political debate about his electricity privatisation proposal shows that there was a reassessment of that plan. The re-evaluation and modification of the original plan was probably the result of an internal discussion between key decision-makers.

Can PT be applied to these kinds of decision-making processes? In this thesis we offered interesting experimental and empirical evidence that demonstrates that PT helps to understand group decision-making. In particular, Chapter 3 stated that companies tend to make very risky decisions when they face losses. This behaviour is similar to individuals who make risky choices when they experience a deteriorating situation. Moreover, the chapter discussed evidence that confirms that individual and collective decision-making share the same framing effects. In other words, insights from individual behaviour help us to understand some aspects of the behaviour of groups. As a result, the application of PT to a collective decision-making process is valuable. For instance, our research used PT to analyse the decisions made by political parties, regulatory agencies, governments, political players and the Federal Electricity Commission (CFE).

The escalating commitment phenomenon is another factor that shows that PT can help to understand group decision making. In Section 3.3.3.2, we discussed Whyte's (1993) research which states that escalating commitment can lead people to make very risky choices. Whyte states that there is a lot of evidence that demonstrates that groups tend to make more extreme decisions than individuals. His research also considers that groups exacerbate individual level biases. Consequently, he concludes that group decision-making has two key effects: 1) escalation can occur more frequently at the collective level; and 2) escalation is more severe in group than in individual decision-making. Similarly, He and Feng (2013) offer an interesting PT application at the collective decision-making level. They use this theory as their key methodological framework to explore Asian foreign policy. Their research finds that political leaders tend to make risky choices when they face a deficit of domestic and international political legitimacy.

He and Feng (2013) recognise that PT was initially designed to be applied at the individual decision-making level. However, they agree with the arguments proposed by Taliaferro (2004), who also applies PT to aggregated, government-level behaviour. According to Taliaferro (2004, p. 231), "the growing experimental literature on

escalating commitment and investment behavior shows that prospect theory provides a descriptive model for organizational and group decision making". His research explains why powerful governments tend to continue participate in international conflicts that generate huge losses for them. He finds that governments are willing to carry out such risky strategies in order to avoid relative losses (e.g. loss of international status and prestige).

He and Feng (2013) use Taliaferro's arguments to state that the aggregation problem does not represent a limitation for their PT application. So, in their research, governments are considered as the units of analysis just as they are in rational choice theories. Moreover, their methodological framework employed decision-makers' statements and speeches and different official reports as information sources to understand how the governments' choices were made. This means that these scholars treat political players or decision-makers as the agent that represents the governments' interests. Their analysis is similar to ours in Chapter 6.

One of the possible scenarios discussed in Section 8.2.2 is connected with the escalating commitment phenomenon at the collective level. We considered that if the PRI returns to power, it may adopt authoritarian behaviour to impose its economic policy. Evidently, the PRI will have to discuss this strategy with its political allies and then reach a collective position. In other words, the application of authoritarian mechanisms will be a result of group decision-making. Since the PRI and the PAN have failed to privatise the MEI, they can try to recoup part of the sunk costs incurred by taking bold decisions, and therefore display risk-seeking behaviour. These two political parties have invested a lot of resources in the political dynamics, so they can aspire to radically change the current SQ in the MEI. The aspirations of these organisations will push them deeper into a domain of losses. As a result, the escalation commitment will be stronger than at an individual-decision level. In other words, group behaviour amplifies what PT predicts.

To sum up, this research has empirically shown that PT can help explain some aspects of the political decision-making related to the privatisation of MEI. There is strong evidence from experiments and real-world data that demonstrate that group and individual decision-making share many elements. So, PT can be used effectively to study the political behaviour of governments, political parties and other kinds of organisation. This makes PT a very powerful methodology and future research should

explore the possibility of using PT to study other types of decision-making process in politics.

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ACRONYMS AND ABBREVIATIONS

| | |
|----------|--|
| AMLO | Andres Manuel López Obrador |
| ASB | Austen-Smith and Bank's model |
| Bcfd | Billion Cubic feet per day |
| EUT | Expected utility theory |
| FAP | A political movement (Mexico) |
| FEC | Foreign energy companies |
| FOBAPROA | Banking Fund for the Protection of Savings |
| GDP | Gross domestic product |
| IFI | International financial institutions |
| ISI | Import-substitution industrialisation strategy |
| LDE | Less developed economies |
| LSPEE | Electricity Act |
| MEI | Mexican electricity industry |
| MgC | Marginal cost |
| MgR | Marginal revenue |
| MMBtu | Million of British thermal units |
| NAFTA | The North American Free Trade Agreement |
| NG | Natural gas |
| NOC | National oil companies |
| PT | Prospect theory |
| PW-Co | Post-Washington Consensus |
| RPI | Retail price index |
| SOEs | State owned enterprises |
| SQ | Status quo |
| W-Co | Washington Consensus |
| X-I | X – inefficiency |

ORGANISATIONS

Amigos de Fox A presidential campaign organization

| | |
|------------|--|
| CFE | A public electricity utility (Mexico) |
| CNC | The National Peasants' Confederation |
| CNOP | The National Confederation of Popular Organisations |
| COLMEX | A Mexican university |
| CTM | The Confederation of Mexican Workers |
| DTI | The Department of Trade and Industry |
| El Barzón | A non-governmental organization |
| ERC -CRE | The Energy Regulatory Commission (Mexico) |
| EZLN | The Zapatista Army of National Liberation |
| FCC | The Federal Competition Commission |
| GLM | A political organisation (Mexico) |
| IFAI | The Federal Institute of Access to Information |
| IMF | The International Monetary Fund |
| IMP | The Mexican Petroleum Institute |
| INEGI | The National Institute of Statistics, and Geography |
| IPPs | Independent power producers |
| La Jornada | A Mexico City's leading newspaper |
| LyFC | A public electricity utility in Mexico |
| MMC | The Monopolies and Mergers Commission |
| NHS | The National Health System (UK) |
| NYMEX | The New York Mercantile Exchange |
| NYSE | The New York Stock Exchange |
| OCE | A Non-governmental organisation |
| OECD | The Organisation for Economic Co-operation and Development |
| OFGAS | The Office of Gas Supply |
| OFT | The Office of Fair Trading |
| OFTTEL | The Office of Telecommunications (UK) |
| OFWAT | The Office of Water Services |
| OPEC | The Organisation of the Petroleum Exporting Countries |
| PAN | A political party (Mexico) |
| PEMEX | Mexico's state-owned oil company |
| PG&E | Pacific Gas & Electric |
| PNR | A political party (Mexico) |
| PRD | A political party (Mexico) |
| PRI | A political party (Mexico) |
| PRM | A political party (Mexico) |

| | |
|---------|--|
| Proceso | A political analysis magazine (Mexico) |
| Reforma | A Mexico City's newspaper |
| Repsol | A Spanish oil and gas company |
| SCE | Southern California Edison |
| Serco | A British government services company |
| SME | A Mexican electrical workers' union |
| SoCal | The Southern California Gas Company |
| STPRM | The Mexican oil workers' union |
| SUTERM | A Mexican electrical workers' union |
| TELMEX | A telecommunications company (Mexico) |
| TETCO | A petrochemical company |

ANNEX 1: CHAPTER 6

Questionnaire

Title: Why Did Mexico Not Privatisise the Electricity Sector?

PhD Student: Jesús G. Reséndiz-Silva

Supervisors: Prof. Peter Lloyd-Sherlock and Dr. Bereket Kebede

Questions:

1. General aspects of the Mexican economy and the Mexican electricity industry (MEI)
2. What is your evaluation of the MEI?
3. What is the structure of the MEI?
4. What were the factors that led the government to propose a privatisation programme?
6. What is the privatisation model proposed by the government?
7. What were the factors that affected the implementation of the government's privatisation programme?
8. What was the role of the political players during the debate of the MEI's privatisation proposal?
9. What is your opinion about the Independent Power Producers (IPPs)?
10. Conclusions

ANNEX 2: PUBLICATIONS

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VIII. ¿POR QUÉ NO SE HA APROBADO LA REFORMA ELÉCTRICA?

JESÚS G. RESÉNDIZ-SILVA

INTRODUCCIÓN

En el presente capítulo se identifican las razones que han impedido reformar al sector eléctrico. Se utiliza el marco de la teoría de las perspectivas, que parte de la premisa de que los sujetos tienden a no tomar decisiones arriesgadas si el entorno que los rodea es favorable; por el contrario, se toman decisiones arriesgadas cuando hay condiciones que ponen en peligro el propio bienestar. Así, se resalta que los que toman las decisiones de los principales partidos políticos en México consideraron que representa un riesgo reformar el sector eléctrico en sus actuales condiciones. En la primera sección de este análisis se resaltan de manera sucinta los aspectos generales de la teoría de las perspectivas y su aplicación en el campo del análisis político. En la segunda parte se muestra el modelo con los resultados, en el debate de la reforma eléctrica, aplicado a los tres principales partidos políticos: Revolucionario Institucional (PRI), Acción Nacional (PAN) y de la Revolución Democrática (PRD). En este sentido, para la aplicación del modelo, se considera que las instituciones representan el conjunto de los intereses económicos y sociales del país. En la sección final, se ofrecen algunas recomendaciones desde la óptica de la teoría de las perspectivas.

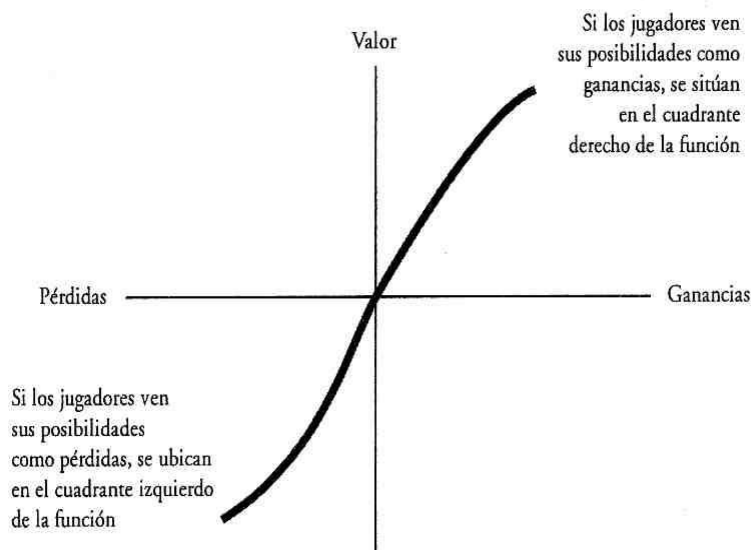
LA TEORÍA DE LAS PERSPECTIVAS

La teoría de las perspectivas se propone como marco metodológico para responder por qué no se ha aprobado la reforma eléctrica en México. La teoría es de tipo psicológico, se centra en la toma de decisiones bajo riesgo y ha desafiado a la teoría económica neoclásica, en particular a la teoría de la utilidad esperada (TUE, *Expected Utility Theory*). La teoría de las perspectivas fue creada en 1979 por Daniel Kahneman y Amos Tversky, quienes demostraron con cientos de experimentos que había un número determinado de incongruencias con la TUE. En particular, comprobaron que los individuos se resisten a perder (*loss aversion*) cuando se trata de elegir entre determinadas opciones. En otras palabras, la gente adopta un comportamiento asimétrico cuando tiene que elegir posibilidades relacionadas con pérdidas y ganancias.

Además, la teoría establece que los individuos calculan mal las probabilidades de acontecimientos que se les presentan, por lo que sobreestiman la posibilidad de que un evento ocurra cuando es muy poco probable que así sea; por ejemplo, a mucha gente le da miedo viajar en avión, aun cuando estadísticamente se le considera el medio más seguro. Por otro lado, muchos subestiman las probabilidades que se presentan en otros eventos; por ejemplo, debido al ritmo acelerado de las actividades diarias, la gente no tiene tiempo para cocinar, por lo que prefiere consumir alimentos ya preparados o bien la llamada *comida rápida*; la probabilidad de que esas personas lleguen a sufrir una enfermedad, como diabetes, es mayor que en otras.

La teoría de las perspectivas se basa en tres principios para establecer afirmaciones como la anterior: 1) edición (*edition*), integrada por tres elementos que son codificación, combinación y cancelación; 2) función de valor (*value function*); y 3) función de ponderación (*weighting function*). El presente análisis se basa en el segundo principio.¹

Gráfica VIII.1
La función de valor hipotética de la teoría de perspectivas



En la gráfica VIII.1 se muestra la función de valor, con la que se indica que la gente es renuente al riesgo cuando se encuentra en el área de las ganancias, y

¹ Para mayor información acerca de la teoría de las perspectivas véase D. Kahneman y A. Tversky, "Prospect Theory: An Analysis of Choice under Risk", *Econometrica*, vol. 47, núm. 2, pp. 263-292.

toma decisiones arriesgadas cuando está en el cuadrante de pérdidas. En otras palabras, cuando los individuos se enfrentan a una posibilidad que sea causa de ganancias y que no afecta su *statu quo*, prefieren no tomar decisiones riesgosas (curva cóncava). Por el contrario, cuando hay una posibilidad que dañe su *statu quo*, tienden a tomar decisiones muy arriesgadas (curva convexa).

LA TEORÍA DE LAS PERSPECTIVAS Y SU APLICACIÓN EN LA POLÍTICA

Desde su desarrollo, la teoría de las perspectivas se ha utilizado en áreas como la ciencia económica y las relaciones internacionales. No obstante, su aplicación ha sido muy incipiente en el estudio de la dinámica política. De acuerdo con Mercer,² tres razones explican por qué la teoría de las perspectivas no ha tenido influencia en este campo: 1) se apoya en variables de índole psicológicas; 2) la mayoría de los métodos de análisis de las ciencias políticas (como la teoría de juegos) se basa en la teoría de la utilidad esperada, por lo que hay cierta renuencia a usar herramientas de análisis que impliquen el comportamiento humano, además de la carencia de curiosidad de los investigadores en explorar este campo; 3) la falta de una teoría de marco que dé estructura al análisis político.

Respecto a la falta de interés en la teoría de las perspectivas, Mercer señala que sólo es cuestión de tiempo para que economistas y politólogos empiecen a explotar la teoría más importante en el campo de la toma de decisiones bajo riesgo. Para resolver el problema de la falta de teoría de marco, Mercer propone cinco técnicas: 1) el *statu quo* como punto de referencia; 2) aspiraciones como punto de referencia; y 3) heurísticas; 4) analogías; 5) emoción.

De acuerdo con Kahneman y Tversky, cuando se presentan posibilidades u opciones, usualmente se consideran como pérdidas o ganancias si se toman en cuenta como un punto de referencia. Por ejemplo, si el sujeto está satisfecho con su *statu quo*, se encuentra en el cuadrante de ganancias (a la derecha de la gráfica VIII.1), por lo que no toma decisiones riesgosas y opta por quedarse con lo que tiene. Por el contrario, si el sujeto no está satisfecho, se encuentra en el cuadrante de pérdidas y por tanto puede tomar una decisión muy arriesgada para mejorar.

De igual manera, la gente tiende a usar aspiraciones para definir su dominio. Por ejemplo, George W. Bush pudo haber estado ansioso por declarar la guerra a Saddam Hussein mucho antes de los ataques del 11 de septiembre de 2001: "Bush no veía nada más que aniquilar a Saddam".³ Esta aspiración puso a Bush en el dominio de pérdidas y eso lo llevó a tomar una decisión muy arriesgada,

² J. Mercer, "Prospect Theory and Political Science", *Annual Review of Political Science*, núm. 8, 2005, p. 1-21.

³ *Idem*.

como fue la invasión a Irak. Para la teoría de las perspectivas, la aversión a perder significa que el individuo toma decisiones demasiado riesgosas.

Otra manera de determinar el dominio en la función de esta teoría son las analogías. Por ejemplo, durante la crisis de Suez, los británicos vieron en el presidente egipcio, Gamal Andel, a otro Hitler, por lo que consideraron la analogía de otro conflicto mundial. En torno a una reforma eléctrica, una mala privatización puede generar en las personas miedo respecto a este tipo de medidas y, por ende, hacerlos preferir su estado actual. Es decir, la gente estaría en el dominio de ganancias y, por consecuencia, no se arriesgaría a apoyar una reforma estructural de este tipo.

Las emociones constituyen otro medio para determinar el dominio de las personas. Variables como miedo, angustia, enojo, pánico, clamor por justicia, entre otras, pueden determinarse cuando el sujeto se sitúa en alguno de estos dos cuadrantes. Por ejemplo, en el caso del desafuero del ex jefe de gobierno del Distrito Federal, Andrés Manuel López Obrador, hubo circunstancias en las que se mostraron diversas emociones respecto al hecho, tanto de los gobiernos como de los partidos políticos y la sociedad civil. Se podría determinar en qué cuadrante de la gráfica VIII.1 se encontraba cada sector de la población en función de la emoción que se sentía en ese momento. En este sentido, las tres técnicas restantes propuestas por Mercer tienen la misma lógica.

APLICACIÓN DE LA TEORÍA DE LAS PERSPECTIVAS AL DEBATE DE LA REFORMA ENERGÉTICA

El modelo

¿Por qué no se ha aprobado la reforma eléctrica? ¿Cómo los que toman las decisiones en materia energética definieron sus posibilidades? Para responder estas preguntas proponemos el siguiente modelo basado en la teoría de las perspectivas. El modelo consta de dos vectores: el primero representa la técnica *statu quo* como punto de referencia y el segundo, la técnica *analogías* como punto de referencia. Al mismo tiempo, se integran seis variables que representan los argumentos más discutidos por el PAN, el PRD y el PRI en el debate de la reforma durante el periodo 2000-2006.

$$\text{Dominio de pérdidas o ganancias} = \begin{matrix} \text{Vector 1} \\ [VI_1 + VI_2 + VI_3 + VI_4] \end{matrix} + \begin{matrix} \text{Vector 2} \\ [VI_5 + VI_6] \end{matrix} \quad (\text{VIII.1})$$

La ecuación está estructurada por los dos vectores, y las variables son las siguientes:

- VI₁= Análisis financiero.
- VI₂= Análisis de tarifas eléctricas.
- VI₃= Situación actual del marco regulatorio energético.
- VI₄= Análisis de la situación petrolera.
- VI₅= Crisis eléctrica en California.
- VI₆= Crisis energética en Argentina.

A partir de este modelo se analizó la respuesta de los expertos relacionados directamente en el debate de la reforma energética del país.

Datos e información

Para establecer las seis variables del modelo, se recurrió a información estadística y financiera, informes gubernamentales y artículos en revistas especializadas. Además, se llevaron a cabo entrevistas con los participantes directos en el debate energético, tanto de la industria eléctrica como del medio político.

Resultados

La teoría de las perspectivas demostró que los tres partidos políticos mencionados determinaron su dominio en el cuadrante de las ganancias, es decir, vieron que el *statu quo* de la industria eléctrica no estaba en condiciones críticas, por lo que hubo aversión a una reforma. La ausencia de una crisis en el sector que haya puesto en entredicho su *statu quo* fue la razón principal para no aprobar la reforma.

El cuadro VIII.1 resume el análisis realizado para conocer cómo el PRI, el PAN y el PRD definieron sus dominios. El PAN determinó el suyo mediante el *statu quo* como punto de referencia. En particular, utilizó dos variables de las seis establecidas en el modelo. El PAN aceptó que la industria se encontraba en una situación económica y financiera óptima, con lo que se situó en el dominio de las ganancias. Para la teoría de las expectativas, si el PAN acepta que el estado actual de la industria es bueno, tendrá una aversión al riesgo. Por otro lado, este partido usó el marco regulatorio de la industria eléctrica como punto de referencia para definir su dominio. De acuerdo con el análisis, los principales actores en materia energética reconocieron que es necesario fortalecer el marco que regula tanto a la Comisión Federal de Electricidad (CFE) como a los inversionistas privados en el sector. En este sentido, el PAN muestra un gran interés en que haya un control adecuado de los inversionistas que participan en la industria actualmente; también desea tener bien estructurado y desarrollado ese marco. Una vez logrado

esto, el proyecto de reforma se fortalecería y serviría a la vez para llegar a algún acuerdo con la oposición. Lo anterior lleva a concluir que el PAN reconoce que el *statu quo* de la industria es aceptable en términos del marco normativo. Por ello prefiere ofrecer mejoras sobre la base del *statu quo* actual, y posteriormente avanzar en el debate de la aprobación de la reforma. Por lo tanto, el PAN tuvo aversión al riesgo en este aspecto.

Cuadro VIII.1
Variables empleadas por los partidos políticos

| Partidos | Análisis financiero (v ₁) | Análisis de tarifas eléctricas (v ₂) | Situación actual del marco regulatorio (v ₃) | Análisis de la situación petrolera (v ₄) | Crisis eléctrica en California (v ₅) | Crisis energética en Argentina (v ₆) |
|----------|---------------------------------------|--|--|--|--|--|
| PAN | X | | X | | | |
| PRD | X | X | X | X | X | X |
| PRI | X | | X | | X | X |

Fuente: Elaboración propia con base en investigación hemerográfica y documental.

En el caso del PRD y el PRI, ambos tuvieron un comportamiento similar en términos técnicos, pues también situaron su posición sobre la reforma en el dominio de las ganancias. Al igual que el PAN, consideraron que la industria se encuentra en una situación económica y financiera estable y que era importante fortalecer su marco regulatorio. Además, utilizaron los altos precios del petróleo como referencia, es decir, plantearon que los recursos provenientes de la exportación petrolera se pueden usar para inversión de capital en la CFE. Ambos partidos vieron que el *statu quo* de la industria petrolera puede tener un beneficio para el sector eléctrico. El PRI y el PRD usaron las analogías como referencia inicial. En particular, éstas reflejaron las crisis energéticas en California y Argentina en el caso de México. Los expertos del PRD y el PRI vieron que si se lleva a cabo una reforma del sector con un marco reglamentario ineficiente, podría pasar algo semejante a lo sucedido en esos dos lugares, donde los resultados negativos de la apertura de sus industrias se atribuyeron a la deficiente planeación e instrumentación del marco regulatorio, así como a una mala estructuración de las instituciones encargadas de aplicarlo. En consecuencia, estas analogías influyeron en la aceptación favorable del *statu quo* actual del marco reglamentario, y en la oposición a una reforma que, bajo una débil estructura normativa, provocaría una grave crisis energética. En otro

aspecto, los altos precios del gas natural llevaron al PRI y al PRD a estar insatisfechos con el *statu quo* en la generación de electricidad por parte de los Productores Independientes de Energía (PIE). De acuerdo con nuestro análisis, estos dos partidos siempre consideraron que la producción de electricidad, con un modelo de generación de ciclo combinado, provocaría tarifas eléctricas más altas.

De manera simplificada, se puede decir que estos tres partidos políticos tuvieron un comportamiento de aversión al riesgo. Se puede concluir que desde el punto de vista técnico hay deficiencias en la formulación y planeación de la reforma en el sector eléctrico, las cuales permiten que los que toman las decisiones vean un escenario negativo si se da un cambio estructural en la industria. Por otro lado, la teoría también establece que no ha habido una situación crítica que ponga en riesgo a esta industria (como una crisis financiera o energética), por lo que no se ha aplicado una medida que implique un alto grado de riesgo (por ejemplo, una mayor participación de inversión privada). Estudios que utilizaron la teoría de las perspectivas analizaron las causas que empujaron a los gobiernos de países como Argentina, Brasil, Perú y Venezuela para llevar a cabo ajustes estructurales, y encontraron que los tomadores de decisiones lo han hecho durante periodos de crisis muy fuertes.⁴

Por ejemplo, durante el gobierno del presidente peruano Alberto Fujimori, el país sufrió una crisis macroeconómica muy fuerte, que orilló a que se instrumentara un programa de estabilidad drástico. Éste fue tan enérgico que los precios de los productos básicos se incrementaron por arriba de 3 000% día a día.⁵ En otras palabras, el plan de estabilización tuvo un efecto mayor en la economía que la misma crisis. No solamente el gobierno estaba en el dominio de pérdidas, también la sociedad al percatarse de la gravedad de la crisis, lo que provocó que apoyara las medidas aplicadas por Fujimori; con ello la sociedad fijó su situación en el dominio de pérdidas.⁶

RECOMENDACIONES PARA LA FORMULACIÓN DE UNA POLÍTICA ECONÓMICA

La teoría de las perspectivas debe tomarse como base para el diseño de la política económica, en particular en la toma de decisiones bajo riesgo. En México, el uso de este tipo de herramientas es incipiente tanto en el gobierno como en la empresa privada. Mediante el uso de esta teoría se puede conocer cuál puede ser la reacción más probable de los agentes económicos en determinadas condiciones,

⁴ K. Weyland, *The Politics of Market Reform in Fragile Democracies: Argentina, Brazil, Peru and Venezuela*.

⁵ *Ibid.*

⁶ *Ibid.*

por ejemplo, crisis económicas o medidas de estabilización. En un mundo donde la mejor estrategia de un sujeto depende del movimiento de los demás, la teoría de las perspectivas puede ser muy útil para anticipar comportamientos.

En el caso de la industria eléctrica, y con base en esta teoría, se puede establecer que es importante el fortalecimiento de determinadas áreas esenciales, a reserva de que se lleve a cabo o no una reforma al sector en el mediano o largo plazos. En este sentido, el marco normativo es de gran importancia para el buen funcionamiento del sector, y más si se pretende alcanzar el nivel de inversión privada. Dos aspectos básicos para una buena regulación en el sector eléctrico son los siguientes:

- 1) Si hay inversión privada en las industrias de redes (electricidad, telecomunicaciones, agua e hidrocarburos), el gobierno necesita instrumentos que regulen precios, inversión, calidad de producto o servicio, además de una barrera de entrada y salida. Por ejemplo, para el caso del control de precios, el órgano regulador puede aplicar un sistema basado en el Índice de Precios al Menudeo (RPI, por sus siglas en inglés) y en el factor X que establece un nivel razonable de ganancias entre la empresa privada y el regulador, con ello se protege tanto al consumidor como a las propias empresas de la industria.
- 2) En caso de una mayor apertura en el sector, es responsabilidad del gobierno fortalecer más las actuales instituciones de competencia (*antitrust*), de tal manera que pueda prever, detener y, en su caso, sancionar comportamientos anticompetitivos en los que puedan incurrir las empresas. Es decir, estos órganos deben ser capaces de enfrentar situaciones relacionadas con el poder de mercado, precios depredadores, integración y restricción vertical y fusiones horizontales.

Establecer los mecanismos de regulación y competencia para el sector eléctrico es un proceso muy complejo, pues si éstos no están estructurados de manera correcta, un mayor nivel de inversión privada puede dañar gravemente la economía. La implantación de estos mecanismos debe ser antes, durante y después del proceso de apertura. Además, es importante satisfacer por lo menos tres de las siguientes condiciones: 1) separación total de los poderes Ejecutivo y Judicial; 2) instituciones políticas y económicas confiables; 3) transparencia en los procesos administrativos gubernamentales; 4) leyes fuertes; 5) personal con la experiencia y los conocimientos en materia de regulación y competencia, en particular economistas calificados en el manejo de temas de organización industrial.⁷

⁷ En México, el estudio de la teoría de la organización industrial (OI) en las escuelas de economía, tanto públicas como privadas, es todavía limitado. Es necesario crear departamentos de investigación especializados en este campo. Actualmente los países que cuentan con un pleno desarrollo en esta área son Estados Unidos y el Reino Unido.

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