God Dies Every Six Years:

Politics, Public Finance and Inequality in Mexico

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CONAPO	*Consejo Nacional de Población*, Nacional Population Council
EFIPEM	*Estadística de Finanzas Públicas Estatales y Municipales*, State and Municipal Public Finance Statistics
ENIGH	*Encuesta Nacional de Ingresos y Gastos de los Hogares*, Nacional Survey of Household Income and Expenditure
FAEBN	*Fondo de Aportaciones para la Educación Básica y Normal*, Aportaciones fund for Basic Education
FAETA	*Fondo de Aportaciones para la Educación Tecnológica y de Adultos*, Aportaciones Fund for Technological and Adult Education
FAIS	*Fondo de Aportaciones para Infraestructura Social*, Aportaciones Fund for Social Infrastructure
FAISE	*Fondo de Aportaciones para Infraestructura Social Estatal*, Aportaciones Fund for Social Infrastructure in States
FAISM	*Fondo de Aportaciones para Infraestructura Social Municipal*, Aportaciones Fund for Social Infrastructure in Municipalities
FAM	*Fondo de Aportaciones Multiples*, Fund of Multiple Aportaciones
FASP	Fondo de Aportaciones para la Seguridad Pública, Aportaciones Fund for Public Security
FASSA	*Fondo de Aportaciones para los Servicios de Salud*, Aportaciones Fund for Health Services
FDSM	*Fondo de Desarrollo Social Municipal*, Fund for Municipal Social Development
FISM	*Fondo de Aportaciones para la Infraestructura Social Municipal*, Aportaciones Fund for Municipal Social Infrastructure)
FOMIN	*Fondo Multilateral de Inversiones*, Inter-American Development Bank's Multilateral Investment Fund
FORTAMUNDF	*Fondo de Aportaciones para el Fortalecimiento de los Municipios y de las Demarcaciones Territoriales del Distrito Fede*ral, Aportaciones Fund for the Strengthening of Municipalities and Territorial Divisions of Mexico City
GDP	Gross Domestic Product
HDI	Human Development Index
IFE	*Instituto Federal Electoral*, Federal Electoral Institute
INEGI	*Instituto Nacional de Estadística y Geografía*, National Institute of Statistics and Geography
LCF	*Ley de Coordinación Fiscal*, Law for Fiscal Coordination
NAFTA	North American Free Trade Area
OECD	Organisation for Economic Co-Operation and Development
PAN	*Partido Acción Nacional*, National Action Party
PNR	*Partido Nacional Revolucionario*, National Revolutionary Party
PRD	*Partido de la Revolución Democrática*, Party of the Democratic Revolution
PRI	*Partido Revolucionario Institucional*, Institutional Revolutionary Party
PRM	*Partido de la Revolución Mexicana*, Party of the Mexican Revolution
Pronasol	*Programa Nacional de Solidaridad*, National Solidarity Programme
PVEM	*Partido Verde Ecologista de México*, Green Ecological Party of Mexico
Sedesol	*Secretario de Desarrollo Social*, Ministry of Social Development
SHCP	*Secretaría de Hacienda y Crédito Público*, Ministry of Finance
UNDP	United Nations Development Programme

Glossary of Spanish words

Aportaciones	Federal funding to Mexican states, based on poverty indicators, as per Ramo 33 of LCF
Callista	Supporter of Calles
Cardenista	Supporter of Cárdenas
Ejidos	Communal farmland shared by villagers, often expropriated from private landholders by the government for communal use.
Latifundios	Large agricultural estates belonging to private owners, often alleged to use forced labour or labour with poor working conditions.
Participaciones	Federal funding to Mexican states, based on economic growth and contribution to national tax revenue, as per Ramo 33 of LCF
Porfiriato	The historical period marked by the presidency of Porfirio Díaz, 1876–1911.
Priísta	Supporter of PRI
Ramo 33	The section of Law for Fiscal Coordination (LCF) which stipulates the distribution of *aportaciones* and *participaciones*.

Abstract

The purpose of this study is to investigate the impact of Mexico's political system on economic inequality between the 32 states of the federation. Longstanding economic divergence between states is occurring despite public finance programmes aimed at reducing poverty. These programmes have not helped poor states develop their economies significantly, and many states have stagnated. At the same time, Mexico's "diamond regions" or wealthy states have experienced healthy growth.

The aim of this study is to show that it is the formal and informal political institutions that keep these programmes from aiding economic development in poor states. A key issue is the ability of poor states to raise finance, which could induce economic development and growth. This is examined in the context of the transition to democracy, with specific focus on political competition. This thesis aims to show the intersections between politics and economics in a growth context, bringing together the Mexican political transition literature and the existing work on subnational economic development.

The empirical testing is done with Generalised Method of Moments (GMM), and the statistical analysis is supplemented by correlation and graphical analysis. The influence of political competition on public finance is tested using ordinary least squares (OLS) and GMM. A GMM calculation is also administered to test the relationship between public finance and state wealth.

The findings indicate that political influence remains in Mexican public finance. The results suggest that the presence of more than one party in state politics coincides with significantly higher public finance levels than those found in a single-party state. These results also show that poverty and federal finance are significant determinants of each other, meaning that there is a vicious circle between federal funding and state wealth. The impact of federal finance on state wealth is especially salient where there are no specified rules for the spending of the federal money.

Finally, some policy suggestions are made. The issues found to require adjustments include the re-election ban, the poor availability of statistical information to decision-makers, and particular details of the federal funding distribution formulae.

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No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university of other institute of learning.

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Map of Mexico

Estados Unidos Mexicanos
División estatal

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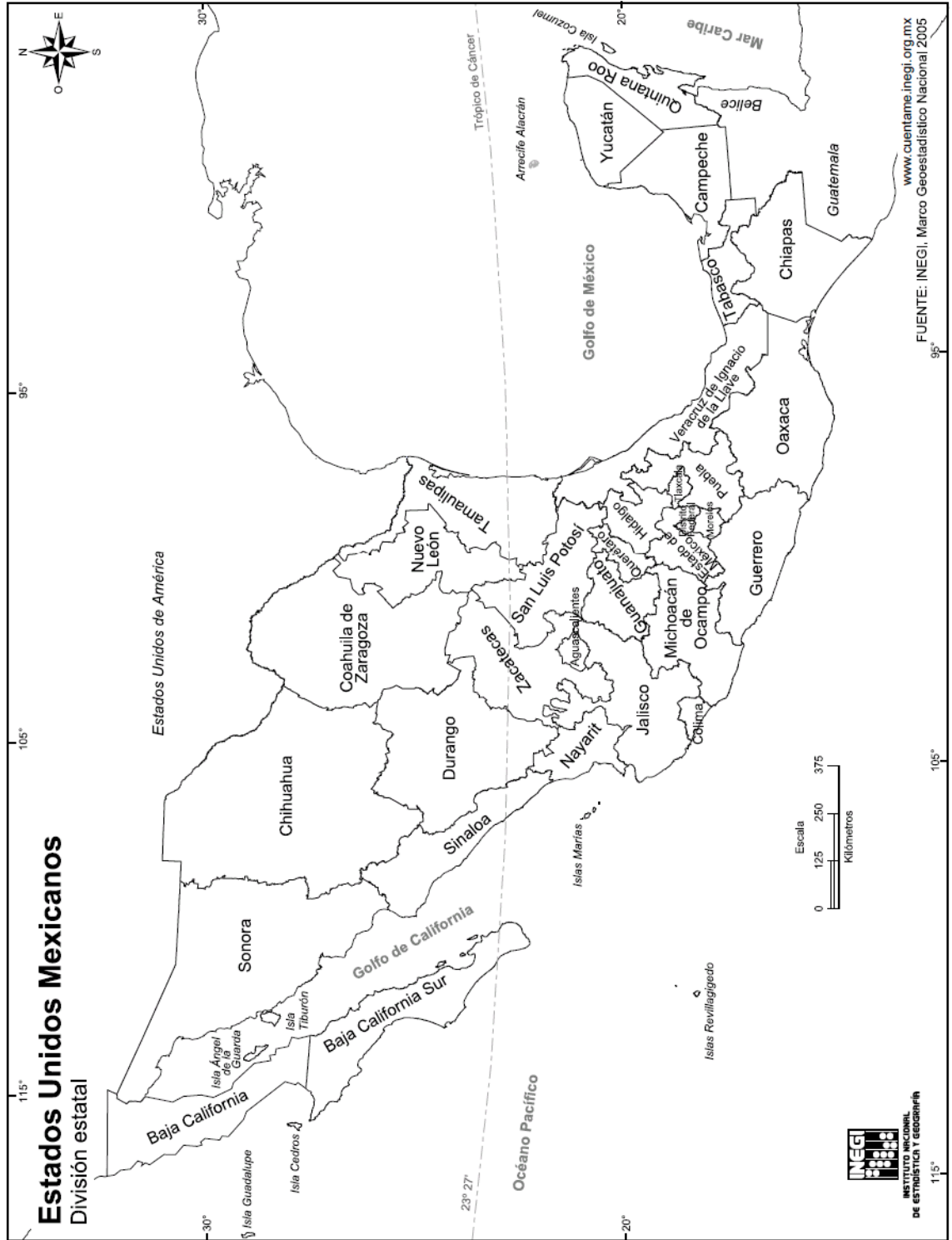
Chapter 1. Introduction

The topic of institutional development is central in many current debates on international development. It is especially salient in the study of poverty and inequality, and is considered a key question in national wealth creation and distribution. The prosperity of countries and the well-being of their citizens rests not only on economic endowments, but on how well their systems work. Therefore, an understanding of institutions is paramount in understanding how living standards can be improved for the world's poor.

However, the challenge in studying institutional environments is their longevity. Drastic changes are rare: most institutional change is so slow that it is indistinguishable from other simultaneous societal changes. However, sometimes institutional changes occur at an accelerated pace. Such has been the case in Mexico in the past two decades, and this makes it an interesting case for a study of institutional development.

Mexico finds itself on the cusp of a new political era. It is coming to the end of a long transition away from one-party control, and towards more transparent politics. This development has occurred in response to both domestic and international pressures. However, a key question remains: How will this influence the everyday life of Mexicans, particularly in economic terms? Has the transition enabled the poorest states to develop their economies to a greater extent than that possible under the hegemony?

The Mexican people might benefit from the transition in many ways, not limited to greater empowerment in choosing their representatives. However, in this thesis I argue that there are formal rules in Mexican politics that hinder economic growth in poor states. These cause growth to remain concentrated in certain regions. In particular, I take the view that the public finance system is built in such a way that keeps poor states poor.

The specific research problem revolves around the distribution of public finance. How does the Mexican political environment influence public finance distribution, and what impact does this have on the economic potential of states? The intuition behind the question is in the interaction between political competition, federal finance, and the development of sustainable economic potential. The political environment influences federal finance in

many ways, and similarly, federal finance influences the development of economic activity in the states in a number of ways. The combination of these two dimensions is what creates the incentives that each state has for generating economic growth and sustainable economic activity.

I tackle first the influence of politics on public finance, followed by the relationship between public finance, poverty and economic development. Both of these are tested statistically, through state-level panel datasets using GMM (Generalised Method of Moments). Through the empirical analysis, I find significant relationships between politics and public finance, and between public finance and poverty. To supplement the quantitative data analysis, I finish with a qualitative analysis to outline reasons for these relationships.

One of the key questions of this thesis is why economic differences between states have grown in the decade since the key years of 1997–1998. This is when one-party control ended, and an entirely new public finance system was implemented with the aim of reducing poverty and inequality. Yet the economic gaps between the states have continued to widen. Is meagre economic development in poor states a permanent issue, or will it improve over time as the effects of the political changes set in? I argue that the institutional arrangements mean that the problem is unlikely to be solved with only the passage of time. Therefore, I conclude by advocating some changes in the formal institutions.

The contribution of this work is twofold. Firstly, the notion that Mexico is entering a new political era – the post-transition period – gives a new perspective on the incentives of current policymakers. Rather than viewing Mexico as still being in transition, I deem that the institutional environment has begun to stabilise. Therefore, rather than focusing on the fleeting transition period, as is the case of much of the relevant literature on Mexico, I focus on the institutions that have survived several different periods of Mexican history, and how these contribute to the long-standing economic differences between states.

Secondly, the interdisciplinary focus of this thesis is unusual in Mexican studies. I combine the political and economic questions into an intertwined, interdependent reality. Separate explanations of political and economic phenomena are common, but only a combined analysis can show the multifaceted mechanisms of the Mexican economy.

The motivation for this work arises from the observation that new tactics are required in many walks of Mexican life to respond to the new political and economic circumstances. The end of the hegemony requires new tactics in the design of political and economic incentives: PRI-era motivations such as career considerations no longer work the same way in a competitive political environment. For this thesis, the second motivation is the notion that Mexico is moving towards the group of developed nations. This will require more equitable distribution of income between regions than is currently occurring, and this research sheds light on the factors that maintain this equality.

In **Chapter 2**, I detail the country context in Mexico, from history and politics to economic, regional and geographic issues. The story of Mexico is complex, and in this chapter, I show not only the formal political and economic environment, but aim for a deeper understanding of how Mexico works.

The prior literature relevant to the topic is introduced in **Chapter 3**. This thesis draws on a number of fields for its theoretical foundations, which I outline briefly here. **The economic growth and convergence** literature contributes the assumption that Mexico's poor states should be growing towards the standards of living of the wealthier states, as well as the notion that Mexican growth is mainly driven by a few wealthy states functioning as "engines".

The **fiscal federalism** literature gives the framework for thinking about the taxation system, and how it can contribute to the incentives that states have for improving economic performance. This is supplemented by the **aid and federal finance dependency** literature, which contributes the theory that federal finance can hinder economic growth, and charts the conditions under which this might happen. The **rules and discretion** literature is used to underpin my theory that Mexico's dual federal funding system is part of the problem in the economic development of poor states.

Finally, the **political competition** literature gives insights to how the political system might interact with federal finance. I regard politics as a catalyst to the relationship between federal funding and economic growth. The assumptions of political behaviour are drawn largely from the **new institutional economics** paradigm, and its specific contribution to this thesis is the assumption that social norms and rules are the key to analysing political behaviour.

Chapter 4 formalises the theoretical framework of this thesis, and briefly presents the main hypotheses and research questions. **Chapter 5** is devoted to empirical analysis of the first hypothesis, testing whether politics is a factor in deciding state federal finance levels. **Chapter 6**, also an empirical chapter, provides statistical evidence of the relationship of federal funding and poverty. **Chapter 7** considers the limitations, presents future research possibilities, and concludes.

Chapter 2. The rules of the Mexican game

I start from a premise that findings are worthwhile only if considered in context. It is difficult to understand political and economic mechanisms without an understanding of the specific ideas, incentives and views prevalent in the environment that produced the data. Therefore, I begin the thesis with a package of information, data and brief analysis on Mexico, from basic history and geography to political institutions and economic challenges. I put specific focus on the political institutions in order to illustrate the Mexican environment to the reader as I see it.

My primary intention in this chapter is not only to underpin the arguments in the chapters that follow, but also to give the reader the tools to make an informed assessment of the external validity of this research. Mexico has much in common with other developing nations, especially those with federal governments, and a number of my arguments are generalisable elsewhere. However, as I argue in this thesis, some of its peculiarities are unique and limit the ways in which Mexico is able to address common problems such as poverty and economic stagnation.

In placing the Mexican federal system in an international context, I follow Riker's view of our understanding of federalism (as viewed by Gibson, 2004) that the key to federal system is not the constitutional set-up but the de facto political system, including but not limited to the relationships between political parties, and common political practices. Firstly, the economic and political situation in which Mexico finds itself is quite unique: a political transition in the context of an established institutional framework. Wibbels (2003) lists Mexico as a globally interesting example, together with the European Union and Russia. The EU and Russia, however, are examples where the institutional set-up has changed markedly: the EU is a cluster of countries which is developing into a federation but which were historically sovereign; Russia is a federal nation which was decentralised until Vladimir Putin's centralising attempts since 2002 (Konitzer and Wegren (2006).

Other Latin American countries are more similar to Mexico in having older federal systems and a longer political history without major upheavals. Díaz-Cayeros (2006) states that the Argentinian and Venezuelan systems are similar to Mexico in their tax structures:

all three have a centralised revenue-sharing system, whereas Brazil does not. On the other hand, Mexico and Venezuela *show levels of centralization found in many unitary states, whereas Brazil and Argentina show low levels of centralization more in line with those found in federal regimes"* Diaz-Cayeros (2006:4). Therefore, with revenue-sharing and high political centralisation, Mexico is an example of central government in both political and fiscal terms. However, Rodden (2003) posits that decentralised government is only smaller than a centralised government if taxation is also decentralised; if the decentralised government is funded by federal intergovernmental transfers, the size of government is unlikely to be smaller than a centralised government. Therefore, Mexico, perhaps more than other Latin American countries, is an interesting example that may indicate a reality that contradicts the Leviathan hypothesis, and it can shed light on the role of federal intergovernmental transfers in determining the size of government.

This chapter has a threefold purpose. Firstly, for the reader not intimately familiar with Mexico, it serves as a general introduction to Mexican history, politics, public finance and the economy, and clarifies the context in which Mexican policymakers operate. Secondly, it sketches the focus of the political and economic issues at the centre of this thesis. Finally, it delivers some preliminary statistical evidence to underpin the argument I will develop in Chapters 3–4 and test in Chapters 5–6.

2.1 The history of contemporary Mexican politics

To explain Mexico today, and especially the undercurrents of politics that influence political thinking still today, one must go back in time well over a century, to the decades that led to the Mexican Revolution of 1910. The aim here is to explain the underlying influences that history still exerts on Mexican collective political memory. The focus in this section is on events that explain the historical context and importance of the no re-election rule, Mexican regionalism, the rise, fall and hallmarks of the PRI hegemony, and the varied successes of Mexico's many attempts at strengthening its institutions.

I start in Section 2.1.1 by considering the long Porfirio Díaz presidency, the context of the Mexican Revolution and its aftermath. Section 2.1.2 covers how this set the tone for much of the 20th century in Mexican politics by laying the groundwork for a strong PRI. In Section 2.1.3 I proceed to the long life of the hegemony from the 1930s to its downfall from the late 1980s. Finally, Section 2.1.4 is dedicated to the "transition to democracy", which

coincides with the time period that is the focus of the theoretical and empirical work in this thesis.

Some events and issues that are considered important in the course of Mexican history, but that I deem not directly relevant to the development of political institutions, are excluded from this narrative for the sake of brevity. The most notably absent issues are the role of the military and religion in public life. The military discussion has been left out because the army has never held political control in Mexico: even generals, as presidents, have tended to respect political institutions. Religion caused considerable conflict in 20th century Mexico, but it is arguable that this has not significantly changed the course of Mexican political institutions or economic history.

2.1.1 *Porfiriato* and the Mexican Revolution

The Mexican revolution ended a long stint of near-continuous rule by president Porfirio Díaz, who held the presidency from 1876 to 1880 and again from 1884 to 1911. The *porfiriato* (as Díaz's reign is often called) was a fairly conflict-free and stable time in Mexican history, but had many hallmarks of a repressive dictatorship (Joseph and Henderson, eds., 2002:285).

Ironically, the no re-election rule was Díaz's initiative, and arguably his most cherished principle to begin with. Díaz originally became president in 1876 by overthrowing Sebastián Lerdo de Tejada, a recently re-elected president, in protest of Lerdo de Tejada's re-election (Fuentes Mares, 1982:222). To avoid scandal, Díaz himself did not attempt re-election in 1880, but duly handed over to a puppet president (Johnson, 1978:28), only to resume the presidency four years later, as was then permitted in the constitution. (Fuentes Mares, 1982:225).

The early days of the *porfiriato* were a productive time: railways and highways were built, industry set up, and public security improved considerably, especially in rural areas (Johnson, 1978:29). It is argued that the great advances made in international relations, commerce, and technology in agriculture and industry, helped Díaz avoid overt debate over being constantly re-elected (Fuentes Mares, 1982:225-6). However, Díaz's social and land policy was controversial. He established the tradition of *latifundios*, large holdings of land, where "*some 5 million Mexicans were dispossessed and condemned to debt peonage and slavery*"

(Johnson, 1978:29). *Latifundios* were prohibited by the Constitution of 1917, but not before they, among other alleged wrongdoings by Díaz's regime, helped spark the revolution.

The final years of Díaz's reign were turbulent. Fuentes Mares (1982:228) puts the beginning of his problems in 1900, when the ageing Díaz suggested he should step down, only to be met by (allegedly orchestrated) street protests for him to continue as president, which contradicted his campaign promises and hurt his credibility. Both Johnson (1978) and Fuentes Mares (1982) agree that many conflicting forces were building up against the *porfiriato*, from the scientists to peasants and liberals.

It is worth noting the similarities between the end of Díaz's reign and that of the end of the PRI hegemony in the 1990s: the rising dissatisfaction of the population over economic and social issues, the regime's own willingness for a power handover in the name of nascent democracy, as well as attempts to make the transition through the existing political institutions. However, the key difference between the two transitions is that PRI was mostly able to uphold and respect institutions and generally maintain order during the transition, whereas Díaz was not.

The final years of Díaz's long presidency were marked by a great deal of ideological planning for a better Mexico. In 1906, an interview of Porfirio Díaz appeared in the US press, where the president was quoted as speaking of Mexico's new democratic maturity, together with his own plans to retire in 1910 (Creelman, in Joseph and Henderson, eds., 2002:290). This was taken as an invitation for other parties to prepare for an open election (Johnson, 1978:30), and Francisco Madero founded the National Anti-Reelection Party with its main political agenda evident in the party's name (Fuentes Mares, 1982:229). A number of guerrilla leaders and other representatives of the peasant movement, including Francisco "Pancho" Villa and Emiliano Zapata, supported Madero's cause throughout the Mexican territory (Joseph and Henderson, eds., 2002:339). However, rifts soon appeared between Madero and the guerrillas over the exact methods of reform. Zapata, who would later lend his name to the Zapatista movement, went from being Madero's ally to deep disenchantment at Madero's attempts to reform Mexico through the existing political institutions (Zapata and Others, in Joseph and Henderson, eds., 2002).

Indeed, Johnson (1978:32) holds that had Madero declared himself president as Díaz abdicated in May 1911, instead of insisting on an election, Mexico might have been spared

a bloody revolution and the resulting confusion. This confusion was to be resolved two decades later by another persistent presidency, today known as the PRI hegemony – to which I will return shortly.

The 1910s saw a great deal of political fractionalisation, as old alliances broke into numerous pieces. Not only did the highest-level politicians disagree on the best way forward, but also, in different regions, very different political developments took place. Johnson (1978:35) describes the state of much of Mexican countryside from 1911 to 1916 as "*anarchy*". Guerrillas occupied many northwestern cities (Torreón, Ciudad Juárez, Chihuahua), but on the other hand many northeastern cities (Tampico, Monterrey, Saltillo) were controlled by constitutionalists, or supporters of the democratic method. It is worth noting that the north of Mexico was heavily contested throughout this period, and this is likely the source of large political and social differences between the northern states. The south of Mexico, on the other hand, whilst not monolithically behind Zapata (Joseph and Henderson, eds., 2002:351), was nonetheless considered far less important than either northern or central Mexico, which saw frequent battles in this period. The north of Mexico was strategically located in 1910, and remains so today.

In 1915, after five presidents in as many years, president Venustiano Carranza "*felt confident enough in* [his] *hold on power to undertake the writing of a new constitution for Mexico*" (Joseph and Henderson, eds., 2002:398). However, at the same time, a number of factions sparred around Mexico for political control. Supporters of Carranza, Victoriano Huerta, Villa and Obregón diverged over the most basic principles as well as details of social policy: "*There was disagreement as to whether the revolutionary movement should even continue, in addition to the controversy over goals*" (Johnson, 1978:34-35). Johnson (1978:35) argues that in the midst of this confusion, president Carranza decided to attempt what Madero arguably should have done six years earlier: force an agreement on all feuding parties, and assign a constitutional assembly to form a Constitution for the nation.

2.1.2 The Constitution of 1917 and the formation of PRI

The Constitution of 1917 was considered not only an attempt at stabilisation (Johnson, 1978:35), but also as a way to improve social conditions. Camp (1999:38-39) considers the most important failures of Díaz's presidency to have been "*foreign economic penetration, class struggle, land ownership, economic depression, the clash between modernity and tradition, (…) the weakness*

of the transition process, the lack of opportunity for upward political and social mobility, and the aging of the leadership". Many of these points were addressed in the Constitution of 1917 (Johnson, 1978:35). One of the main issues in the Constitution was giving the state the right to expropriate private property in the name of the public good, and at the same time removed the rights of foreign companies to Mexican petroleum (Joseph and Henderson, eds., 2002:398). Other key themes were reducing the power of the church and clergy in landholding affairs, the agrarian reform (Johnson, 1978:35), and improving the conditions of labourers. Mexico's labour code "*was one of the most progressive labor codes in the world at the time of its promulgation*" (Joseph and Henderson, eds., 2002:398), one of many examples where Mexican institutions attempt to formalise progress. However, in 1917 the enforcement of such codes was poor, and as in many countries, enforcement remains one of Mexico's primary problems in improving conditions. This problem is also likely to provide an explanation for why states diverge markedly in social development: national laws are better enforced in some states than others.

The Constitution of 1917 has been a huge influence on Mexican society since. Many of Mexico's most important political debates today, such as the total bans on petroleum exploration by foreigners and re-election of public officials, arise directly from this document. However, the Constitution of 1917 did not immediately lead to stability, as the same personalities and groups from before continued their campaigns in their respective regions. Zapata's assassination in 1919, Carranza's in 1920 by Zapatistas, and Villa's in 1923 all reflected the continuing violence; Bruhn (1996:32) and Domínguez and McCann (1998) go so far as to term it a civil war. The stipulations of the Constitution were not upheld with great fervour in its first years (Camp, 1999:44, Johnson, 1978:35), and the remaining regional and ideological leaders all fought for the presidency (Johnson, 1978:36).

The 1920s saw more attempts to adhere to the Constitution under two presidents who fulfilled their four-year terms[1], each with slightly different priorities. Obregón's (1920-1924) was education and support of farmers in property issues (Fuentes Mares, 1982:254). Plutarco Elías Calles (1924-1928) emphasised education together with the anticlerical stance (Johnson, 1978:36).

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[1] The presidential term was extended from four to the current six years in 1928. (Meyer, in Sánchez Alonso et al, eds., 1985:83)

However, the alternation of the presidency from one person to another was not yet fully respected, and supporters of Obregón convinced Congress to modify the Constitution to alter the re-election ban twice: first in 1927 that a former president could be re-elected once but not immediately after the first term, and in 1928 removing the limit of one re-election only (Meyer in Sánchez Alonso *et al*, 1985:83). Johnson (1978:36) is sceptical about the process: "*Obregón's supporters successfully imposed his candidacy upon the electorate in an election of questionable honesty*". Fuentes Mares (1982:261) describes how Obregón sent for the successful assassination of two rivals. Obregón was announced the winner, but was himself assassinated before he took office. Carpizo (in Sánchez Alonso et al, eds., 1985:123) goes as far as to state that Obregón's assassination "*saved Mexico from a second Díaz; Obregón would have been very difficult to remove from the presidential seat, and we would have had another 1890*". Calles, the incumbent, together with Congress installed an interim president (Fuentes Mares, 1982:264). The total ban on presidential re-election (one term only per person) was re-instated in the Constitution to its current form in 1933, and to date, politicians have been very reluctant to change this.

In the 14 months that any interim president needed to govern as per the new Constitution, with view to the 1929 elections, Calles formed a party that would shape the rest of the century in Mexico, starting out as the National Revolutionary Party (PNR). Two PNR presidents – puppets of Calles, according to Johnson (1978:37) – followed, with two years in power for each. Calles intended a third, but "*underestimated the general* [Lázaro Cárdenas] *as a potential puppet*" (ibid.)

There is scant detail in the literature about the role of Congress in this period, and all references to the legislative branch make it clear that Congress was deeply under the influence of the president (or in the case of the puppet presidents, under the influence of Calles). However, there is some consensus (e.g. Meyer in Sánchez Alonso, 1985; Johnson, 1978:37) that other, non-*callista* factions of the newly formed PNR disagreed with Calles' *de facto* control of the presidency. These factions were the ones that enabled the choice of Cárdenas as presidential candidate, and this choice would lead to a massive transformation of Mexican politics and society.

Later, in 1938, PNR would become the Party of the Mexican Revolution (PRM), and in 1946, PRM would change its name to the Institutional Revolutionary Party (PRI). This was a name that combined the elements – revolution and respect for institutions – that had

been the major issues in Mexican politics during and after the first decades of the century, and thus reflected the ideals of the period.

2.1.3 The rise and reign of PRI

The presidency of Lázaro Cárdenas (1934-1940) was in many ways the start of modern Mexico, the Mexico that is present today in the literature on both political control and economic development. The late 1930s were still a time for healing the wounds inflicted in the revolution and its aftermath: reconciling church and state towards peaceful co-existence (Johnson, 1978:38), and re-distributing land and bridging the gap between the workers and politicians (Anguiano in Joseph and Henderson, eds., 2002).

The redistribution of land, and the creation of *ejidos*, was considered the pinnacle of the Mexican Revolution (Joseph and Henderson, eds., 2002:471). *Ejidos were* communally used plots of land, which the government expropriated from their owners for the use of landless farmers. Workers therefore became empowered in being able to gain land rights for their own use and patrimony for their children (Agustín, 1990:7). Cárdenas' encouragement for workers to organise (Anguiano, in Joseph and Henderson, eds., 2002:458) had a similar effect in improving the position of workers in society.

In response to these measures, and specifically the ability of the government to expropriate land, the National Action Party (PAN) was founded in 1939 to represent the wealthy former landowners (Méndez de Hoyos, 2006). PAN remains to date the primary conservative party, and during the hegemony established itself as the main opposition to PRI.

However, despite the new agricultural policy, the newly empowered masses needed to be carefully contained, in order to avoid further revolution and unrest, which was still rampant in the late 1930s (Anguiano, in Joseph and Henderson, eds., 2002:459). This was done by incorporating both *ejido* and factory workers into the PRI machine, and the labour unions were especially useful for this recruitment. Labour unions, for both farmers and factory workers, were instrumental in developing and upholding the political machine that PRI built up from the 1940s onwards. At the same time, this new organisation of labour meant that the aims of the 1917 labour code were being fulfilled. The arrangement of organised farmers on *ejidos* supported by the party was a satisfactory situation for all

involved. The farmers had land, the revolutionaries (both PRI and non-PRI) were happy to see the labour code prevail, and the party managed to pacify a great deal of the dissatisfaction that might otherwise have transpired from voters observing the political manoeuvres, social problems and high economic inequality that would soon follow.

Various authors contend that Cárdenas had a particularly strong charisma and ability to attract followers (e.g. Johnson, 1978:38; Anguiano, in Joseph and Henderson, eds., 2002). However, many argue also that he transformed the presidency itself. Delgado de Cantú (2003:196) considers his importance as follows:

> *"Cárdenas' most important political achievement was to give the presidency the autonomy and power stipulated by the Constitution of 1917, ending the diarchies that were so hazardous for the political stability of the nation, and converting the presidency into an institution with its own charisma, independently of the person occupying the position."*

Fuentes Mares (1982:281) has more direct take on the same issue: *"Cárdenas put an end to the era of the puppets, and began the era of the presidents."* Both seem to agree that the era of Weak presidents was over, and that the president no longer needed to be a charismatic hero of the Revolution, or rule with an iron fist and eliminate competition through violent means. Indeed, since Cárdenas, every president has completed his six-year term. Compared with the chequered history of Mexican presidents between Porfirio Díaz and Cárdenas, this can be seen as an indication of permanently improved political stability.

The socio-economic reforms started by Cárdenas continued throughout the 1940s, as the following two presidents continued in his footsteps. These terms also set the precedent for how presidential succession would proceed for the next decades. Selected politicians were carefully groomed as governors (preferably in large and important states) and as cabinet members, and in light of the political and economic situation near each election, a candidate would be chosen that matched the need in that period (Johnson, 1978:40).

At the same time, with the end of World War II, industrial development and economic growth were becoming important issues in Mexican politics, and accordingly, candidate selection between different factions became an issue. The need to keep the political environment stable stemmed not only from protecting the population, but also from creating a safe investment climate for foreign investment (Agustín, 1990:16). Economic growth was very fast, at an annual average of 6% between 1940 and 1965 (Teichman, 1988:12). Politically, free-market views were popular in this period, not only because the

economy was booming, but also because of anti-communist sentiment in the United States in the period (Agustín, 1990:18), and the importance of American investors in Mexico.

However, inequality was also growing. This was modern Mexico's first period of high economic growth, and based on the historical descriptions of social unrest, wealth was clearly not trickling down to the landless. As I will argue later, this period effectively cemented the Mexican division into a rich north and a poor south, but it caused social unrest in all parts of the country. The *ejïdos* were still living under poor conditions (Joseph and Henderson, eds., 2002:461), and the rural areas were presenting a challenge to those who regarded urban growth as a major achievement. A 1947 article (Cosío Villegas, in Joseph and Henderson 2002:472) described the difficulty of improving political and economic conditions in a large, heterogeneous country:

> "*A country whose population is scattered into an infinity of tiny settlements in which civic life is at present impossible, settlements which live isolated from each other, out of the reach of knowledge and wealth – such a country cannot suddenly create a favorable environment for conscientious and responsible civic life.*"

An examination of 1940s writings shows that a number of the social and economic issues in modern Mexico were either already present or originate from this period. Remote areas were difficult to convert into informed havens of democracy. Mexican settlements created a problem akin to the American West: societal development and democracy were only priorities in the largest communities. In the north, it was a "frontier mentality"; in the south, indigenous groups self-administered. As a result, economic activity developed mainly in cities, whereas rural areas were subsistence-based, and the land practices offered little opportunity beyond subsistence farming. To date, small community size is considered one of the most important predictors of poverty in Mexico (e.g. as a component of the social marginalisation index).

By the 1960s, it had become clear that the land issue was mainly used as a cosmetic method for keeping the masses happy (Fuentes Mares, 1982:290). However, political and economic stability and economic growth in this period, especially in urban and industrial areas, was remarkable, and is referred to in various sources as the "Mexican miracle" (e.g. Joseph and Henderson, eds., 2002:462; Teichman, 1988:12).

It is worth noting how PRI's distinguishing features were already clear and functional by the 1940s. Some of the hallmarks of PRI's means to staying in power were strategic

clientelism, the *dedazo* and a united front in choices of presidential candidates, despite internal disagreement. All of these issues were present throughout the reign of PNR, PRM, and finally PRI. Strategic clientelism through trade unions began in the mid-1930s with Cárdenas. The *dedazo* was evident since the end of Calles' presidency (Johnson, 1978:37), and the practice had been used in Mexico earlier e.g. by Porfirio Díaz (Fuentes Mares, 1982:223). The united front was the preferred strategy as early as in the choice of candidate for the 1934 elections (Meyer, in Sánchez Alonso *et al*, eds., 1985:90). It is noteworthy that these characteristics did not develop as PRI gained power; rather, they were the reason for its power in the first place.

Throughout its reign, PRI was never a monolithic political entity. President Manuel Ávila Camacho (1940-1946) found himself mediating disagreements between left-wing *cardenistas* and free-market proponents (Agustín, 1990:18). In the 1940s, the chambers of Congress were controlled by different factions (Agustín, 1990:24). Miguel Alemán (1946-1952) was a very market-oriented president (Johnson, 1978:40; Fuentes Mares, 1982:287).

Indeed, the tendency for politicians as followers of the Mexican Revolution had begun to wane by the 1960s, as the free-market thinking became more common (Johnson, 1978:41). However, the 1960s also saw a return to some violent incidents involving dissidents and government force. A high-profile farmers' uprising occurred in the central state of Morelos, led by Rubén Jaramillo, the head of a sugarcane growers' association. In Jaramillo's own words, the cause of the uprising was continuing inequality and disappointment in the conditions in *ejidos* (Jaramillo, in Joseph and Henderson, eds., 2002:488). He was killed by government forces in 1962 (Agustín, 1990:196; Fuentes Mares, 1982:290). The southwestern state of Guerrero also saw politically motivated assassinations of farmers' representatives, carried out by the army (Agustín, 1990:198). However, the case that is best known internationally came in 1968, just days before the Olympic Games were due to begin in Mexico City, when government forces killed an estimated 500 students protesting against various manifestations of government illegitimacy (Johnson, 1978:5). In an era of internationalisation in the Mexican economy, as well as the Olympic Games as a symbol of this, the uprising was seen as symbolic of the rift between the government and the people.

This rift would persist, some would argue, to the present day. However, by the late 1960s, PRI was using stronger methods to quell stronger dissent. Fuentes Mares (1982:291) gives an account of the method that PRI repeated on various occasions:

> *"The Mexican politician is afraid of 'burning' himself, and when he smells fire, he decides not to move, believing that the fire will put itself out with time. When it does not, the politician will order the mobilisation of firemen, but as they were called late, they act as sappers at the disaster scene, focusing on isolating the fire and destroying any flammable material in its vicinity."*

Similarly, José Luis Reyna (quoted in Agustín, 1990:198) describes the treatment given to the views of dissidents: "*either it was negotiated or it was repressed, but it was not tolerated*".

In the 1970s, the main concern of Mexican governments already appeared to be the longevity of the regime. Reyna (in Sánchez Alonso et al, 1985) considers that a progressive candidate was eschewed in favour of the continuity that Luis Echeverría offered for the 1970 election. Echeverría's presidency (1970-1976) was one of control: "*socialist-sounding doctrines*" and worker-oriented social programmes were intended to keep the workers happy, whereas private sector firms were rescued and the military strengthened (Johnson, 1978:51). The guerrillas, followers of the revolutionaries, were beginning to resurface; the elite were not pleased at the left-wing slant of the president. This dichotomy in society was a continuation of the long increase in inequality, and Echeverría sought to alleviate this with a land reform by expropriating land from private landlords (Johnson, 1978:234), an initiative dubbed "the second stage of the land reform" (Agustín, 1992:20).

However, the effort was not sufficient, as by the late 1970s, observers were seeing an authoritarian government, as opposed to the view in the 1960s that Mexico was a democratic country (Davis and Brachet-Márquez, 1997:112). With the benefit of retrospect, it is today clear that by the early 1970s, Mexico was living in an authoritarian state. However, in the regional context of the period, PRI's methods did not spark outrage:

> *"The absence of an independent and threatening military, the regularity of elections, and the orderly process of presidential succession spurred many theorists to regard Mexico as a model for its southern neighbors battling with military coups, widespread domestic opposition, ongoing violence, and electoral instability. The non-democratic features of one-party rule were overlooked in view of some political outcomes generally associated with democracy, such as political stability and civilian government."* (ibid:89)

Teichman (1988:12) agrees that in Mexico, state violence was not a commonly used method, but that the means of influencing the people and marketing the PRI ideal were "*revolutionary mythology, cooptation, selected reforms, and socialization*".

However, this apparent political legitimacy that the Mexican government had was being reduced by repeated protests from its own citizens. Johnson (1978:242) comments that at the time of his writing, corruption and lack of respect for human rights were the main criticisms of the regime. Similarly, Davis and Brachet-Márquez (1997:113) consider that PRI's power diminished largely due to its failure to respond directly to its constituents the way Cárdenas had.

In addition to political concerns, economic issues revealed cracks in PRI's perceived ability to govern. Santín Quiroz (2001:4) cites expansionist politics as a reason for debt accumulation, and the oil crises of the 1970s made this worse, as the Mexican government was heavily dependent on petroleum exports. A severe drought in 1979 brought about a food crisis, and president José López Portillo (1976-1982) introduced a programme to reform Mexican agriculture, improve its efficiency and commercialise farming. However, this was seen as privatising land, and was criticised as counter-revolutionary. (Agustín, 1992:230)

It is worth noting that contemporary accounts from the 1970s do not use the word "hegemony" or similar; rather than one unchanging government, it appears the perception was of separate presidencies, with the common factor being the "system" (which people did not always associate to the presidents personally). Corporatism, tight control and fraud, even though now commonly attributed mainly to PRI, were not unheard of in Mexican politics in the 19th and early 20th century. PRI's unique contribution pertained mainly to the huge number of Mexicans who were directly linked the party one way or another: through social assistance, trade unions, workplaces, *ejidos*, housing, public services, or schools.

In the 1976 election, PRI had no challengers, but according to Reyna (in Sánchez et al, eds., 1985:117), the abstention rate was extremely high. Schedler (2000:7) considers the dilemma that PRI faced throughout the hegemony:

> "…*opposition parties face the choice of participating in or boycotting the electoral farce, while incumbents have to reconcile the conflicting imperatives of keeping opposition actors under control and keeping them in the game.*"

The non-competitive presidential elections of 1976, therefore, represented a threat to the image of PRI as the immensely popular party that regularly asked for, and received, electoral approval. In 1982, a record number of other parties – six, according to Agustín

(1992:274) – entered a candidate for the presidential election. Miguel de la Madrid of PRI won by a long shot, but there were cries of fraud from other parties, suggesting that the "last resort" option was now being taken in places (Agustín, 1992:275).

However, any political problems at that stage were soon overshadowed by the economic crisis of 1982, which was a serious dent to de la Madrid's (1982-1988) government. Brought about by government spending combined with global shocks, it caused a conflict between the state and bankers, to the extent that banks were nationalised (Santín Quiroz, 2001:92). The state made many attempts to assert its independence from international investors and the domestic private sector, but capital flight resulted (Davis, 1993). This did not improve the legitimacy of the PRI government in the long term, and gave other parties the opportunity to criticise the PRI hegemony in ways that would soon lead to the beginning of the "transition to democracy".

Before proceeding to the transition era, I shall summarise the last 100 years of Mexican political history, interpreted through presidential elections:

Figure 2.1 Percentage of total votes given to winner in presidential elections, 1911-2006
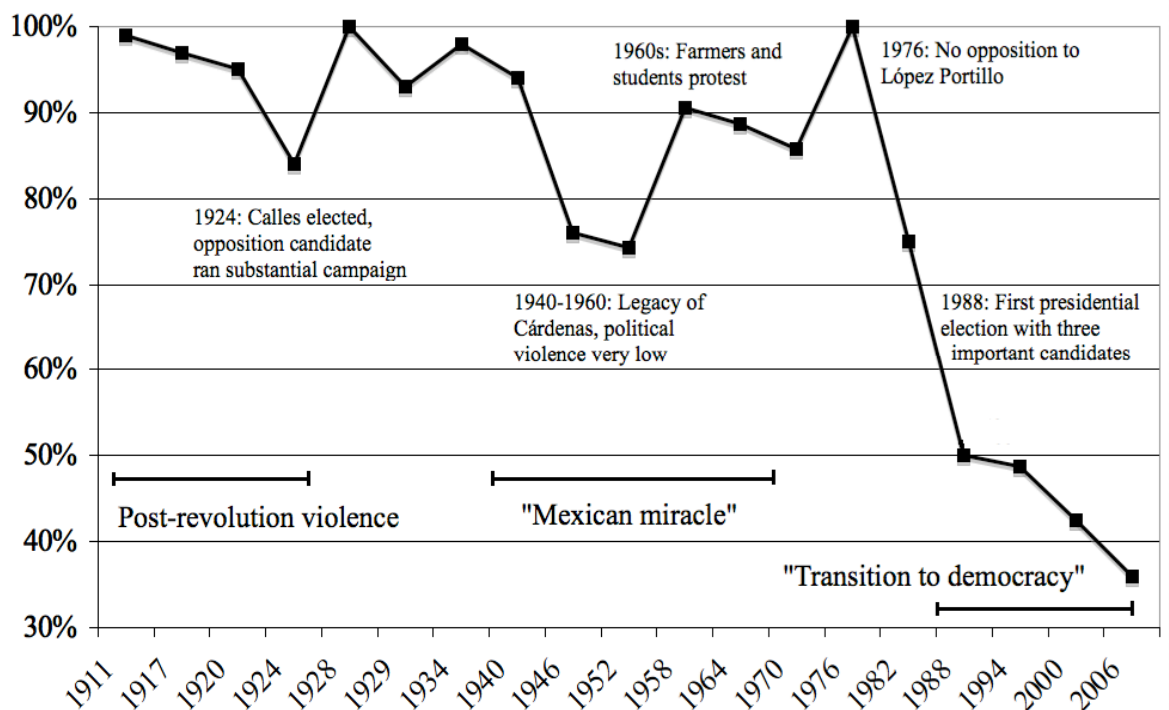
Sources: 1911-1940 data from Meyer (in Sánchez Alonso *et al*, eds., 1985), 1946 elaborated from Agustín (1990:64), 1950-1976 from Reyna (in Sánchez Alonso *et al*, eds., 1985), 1982-1988 from Gómez Tagle (in Cheresky, ed., 2007:156), 1994-2006 from IFE online database. All figures until 1988 (inclusive) are approximate.

2.1.4 The transition to democracy

The election of 1988 was arguably the turning point for the PRI hegemony, and it became clear that major challenges for PRI were to come (Bruhn, 1996). In this section, I make some reference to political institutions that are presented formally and with more detail in the following section. However, those details are not crucial to following the story in this section.

In 1986, during the final years of Miguel de la Madrid's (1982-1988) presidency, electoral reforms had been put in place to ensure that no party had an overwhelming majority in the lower house of Congress (Chamber of Deputies). However, Camp (1999:182) considers that it was the economic crisis of 1982, not electoral reforms, that mainly boosted the support of the opposition parties.

In 1986, PRI also had a severe internal crisis, as some high-profile PRI officials decided to form an alternative group within the party, known as the "Democratic Current" (*Corriente Democrática*) (Bruhn, 1996:76). The leader of this current was Cuauhtémoc Cárdenas, son of Lázaro Cárdenas, who used the economic crisis to show that the goals of the Revolution had been shelved in favour of neoliberal ideology, felt that PRI's internal democracy was declining, and that all factions were no longer accommodated (Bruhn, 1996:80). At the same time, the mainstream PRI leadership chose the official candidate for the 1988 election, Carlos Salinas de Gortari, believing that "*Mexico needed to leave behind the 'revolutionary nationalism' and 'enter the era of globalisation'*" (Agustín, 1998:141).

Essentially, the themes of the 1988 campaign were familiar to Mexicans from various past campaigns. When Cárdenas became a presidential candidate representing the National Democratic Front (FDN, which would later become the Party of the Democratic Revolution, PRD, in 1989), Salinas supporters characterised Cárdenas as Marxist-Leninist, populist, and "*yearning for the past*" (Agustín, 1998:151). This was basically the same debate between modernisation and revolution that had been present in Mexican politics for much of the century. On the other hand, Cárdenas was able to build a strong campaign, based on his neo-revolutionary stance (Domínguez and McCann, 1996:90), the increasing inequality and perceived decreasing social justice (Bruhn, 1996:86), and last but not least, the immense name recognition of Cárdenas, especially in rural Mexico, which gave him

automatic links to his father's very popular policies forty years earlier (Camp, 1999:185; Bruhn, 1996:125).

Agustín (1998:152) describes how, two months before the election, PRI began setting up various mechanisms to ensure Salinas' victory, and some of the more creatively named alleged practices (such as "pregnant ballot boxes" and "vote tacos") have since become part of Mexican political folklore. Schedler (2000:8) gives a similar account: "*The PRI was free to distort the process at will—to shave the voter list, to stuff ballot boxes, to expel party representatives from polling stations, or to allow the dead to express their rational preference for the ruling party.*" Most authors agree that the 1988 election was fraudulent to some degree (e.g. Camp, 1999:185; Bruhn, 1996:141; Centeno, 1994:14-15). This is an indication of the perceived danger from both Cárdenas and the PAN candidate, Manuel Clouthier, to the Salinas presidency. In Figure 2.1 it is clear that according to the official published figures, Salinas got only just over half the vote, with 31% of the votes registered for Cárdenas.

However, it is also important to note the decline in the president's relative power over the political system in this period. The Constitution of 1917 does not accord the Mexican president powers that would be substantial when compared to those of most other presidential countries. However, in Mexico, the position of the president as ideological leader of his party, combined with PRI's power over the political system, gave the president unprecedented powers throughout much of the 20th century. Nonetheless, in the late 1980s, as PRI's hold over the nation's policymaking loosened and other parties gained seats in Congress, state legislatures and municipal politics, the legislative branch became instrumental in determining the relative strengths of parties. However, the presidency held, and continues to hold, great symbolic value. After Cárdenas and other candidates had dented PRI's automatic access to the presidency, the transition began in earnest.

In the aftermath of the 1988 presidential elections, much criticism was shed on PRI for the allegedly fraudulent election (Agustín, 1998). Further electoral reforms were made, which further improved the access of other parties to power, especially in the legislative branch of government. In addition, the independent Federal Electoral Institute was founded (Camp, 1999:187), to replace the PRI-controlled Federal Electoral Commission, which gave more credibility to federal elections and improved transparency.

The presidency of Salinas (1988-1994) is most often described as technocratic (e.g. Kessler, 1998:36; Centeno, 1994), meaning an elite-imposed paradigm for economic policy, or "*economic orthodoxy*" (Centeno, 1994:13). Mexico took many measures towards economic liberalisation in Salinas' term, by paying off debt, selling state-owned companies, and reducing barriers to trade, including but not limited to the NAFTA negotiations (Kessler, 1998:37; Centeno, 1994:16). On the other hand, unemployment was rising, and "*the material conditions of most Mexicans improved only slightly*" (Domínguez and McCann, 1996:177-178). Despite a good aggregate performance for the Mexican economy, the distribution of income remained unequal (González Gómez in Kaufman Purcell and Rubio, eds., 1998:42). The view that the Salinas government had little regard for the poor was not helped by the decision to overturn the *ejido* system in 1992, citing the low productivity of *ejido* land. This improved property rights in theory, because the farmers were now able to buy and sell the land formally; however, in practice this did not improve the options available to the farmers, as much of the *ejido* land turned out to be of very low market value (Yúnez Naude and Barceinas Paredes, in Randall, ed., 2006:221).

Again, PRI's choice of candidate for the next presidential elections in 1994 reflected the economic realities, in order to address the most disgruntled contingent of voters. The initial choice for the PRI candidate was Luis Donaldo Colosio, the head of Pronasol. Pronasol was a programme marketed as the poverty reduction initiative of the Salinas government, although it is widely believed that it was in fact an attempt to garner support for PRI (e.g. González Gómez in Kaufman Purcell and Rubio, eds., 1998:43; for an empirical study of Pronasol as an electoral aid see Díaz-Cayeros *et al*, 2007). On the day of the start of NAFTA, there was a severe political uprising in the southern state of Chiapas. In the ensuing chaos of ceasefire negotiations, Colosio was assassinated on the campaign trail, and these events raised serious doubts about Mexico's political stability (Domínguez and McCann, 1996:182).

Ernesto Zedillo was chosen as the PRI candidate for the 1994 election in a situation of confusion, and was allegedly picked as a favourite of the late Colosio (Domínguez and McCann, 1996:184). He ran a campaign to embrace all factions of PRI, and most observers agreed that the published election result of Zedillo's win was not manipulated (Camp, 1999:187).

Salinas had attempted to re-instate the coalition of different sectors of society that had been successful for PRI in past decades, and used other methods that had worked for PRI in the past. On the contrary, Zedillo disagreed with the old methods, and once president gave up his right to name his successor. In doing so, he expressed the same concerns for democracy that Cuauhtémoc Cárdenas and his supporters had had before breaking off to form another party. (Rubio, in Kaufman Purcell and Rubio, eds., 1998:16.) Changes were effected in the formal institutions in the Zedillo presidency that would enable a more democratic election process in future elections (see Section 2.2 below, or Domínguez and McCann, 1996 for details).

After the close call of 1988, the priority for PAN and PRD in the 2000 campaign, rather than a specific economic or other agenda, was to beat PRI by any possible means (Bruhn, in Domínguez and Lawson, eds., 2004). Schedler (2000) discusses various bureaucratic avenues, through which PRI attempted to prevent a PRD-PAN alliance, and how PRD and PAN could not agree on a fair method to choose their shared candidate, because all methods favoured one or the other. It is worth recalling that PAN (right) and PRD (left) are ideologically very different, and any alliance would have been based on the anti-PRI stance only. Finally, PRD (together with other smaller parties on the left) nominated Cuauhtémoc Cárdenas, for the third election in a row, and PAN (also allied with others) nominated Vicente Fox. PRI, through its first-ever presidential primary, chose Francisco Labastida.

Bruhn (in Domínguez and Lawson, eds., 2004) suggests that in the 2000 election, PRI regarded keeping its "base" as its major challenge, rather than attracting new voters, and that this in the end was a strategic mistake: perhaps they overestimated the size of the base. Bruhn (ibid.) describes the choice of Labastida as the best available balance between all the different PRI factions (combining the technocratic style of Salinas and the more political style of López Portillo and de la Madrid). Schedler (2000:11) depicts Labastida's campaign, similarly, as a mix of the varied characteristics that had been attributed to PRI over the years. However, the internal problems within PRI manifested themselves during the campaign, especially between Labastida and Roberto Madrazo, who was a contender for the candidacy and later became PRI's presidential candidate for 2006 (Klesner, 2002:143).

It became clear at this stage that the old-style PRI unification behind the chosen one was no longer occurring, ever since Zedillo ended the *dedazo* tradition of handpicking the candidate. Before, it had been in every individual *priísta*'s interest to support the president's

chosen candidate. Now, the introduction of intra-PRI competition automatically helped highlight differences. "The system", based on strong incentives for all to collaborate, was therefore eroded from inside by the end of the *dedazo* and the introduction of competition.

Vicente Fox, much like Ernesto Zedillo six years earlier for PRI, was not a typical representative of his party, and this may have helped him garner personal support across party lines and for the pro-democracy stance (Bruhn, in Domínguez and Lawson, eds., 2004). Fox won with over 42% of the vote to Labastida's 36%, which was widely considered a secure and fair victory (Klesner, 2002:144).

The electoral set-up since 2000 has not changed a great deal. PAN, holding the presidency, faces the challenge of moving from a regime-change platform to debating the issues, and there is evidence of such change. In addition, the methods of Revolution-era politics have not been completely eradicated: Felipe Calderón's 2006 campaign included some bureaucratic acrobatics to have his most dangerous rival disqualified. However, the PRD candidate, Andrés Manuel López Obrador, remained in the race and ran a *cardenista*-style campaign as spokesman for the poor, with echoes of revolution. López Obrador lost to Calderón by a minute 0.58 percentage points, and was quick to allege fraud. Calderón's win was upheld, and the general view is that the electoral institutions prevailed. It is clear that trickery in Mexican elections is becoming both more difficult and less acceptable, at least at the federal level, where formal transparency and independent media scrutiny is now high.

Other PRD leaders too invoke the social injustices in their electoral material and public appearances, criticising the records of both PRI and PAN presidencies from the opposition. PRI lost ground in the 2006 federal and presidential elections, with Roberto Madrazo being supported mainly by older voters in the PRI core (Klesner, 2007), but unexpectedly regained its relative majority in the lower house of Congress in the July 2009 midterm legislative elections, proving that it remains a major force in Mexican politics.

Theories of hegemony in literature stem from the post-colonial period, mainly from the 1950s and 1960s. Sartori (1976:204) regards hegemony as a system that *"neither allows for a normal nor a de facto competition for power"*. Kothari (1964) distinguishes between a *one-party system* and *one-party dominance*, where dominance means that there is a consensus network within which the ruling party manages its different factions, but power is exercised within

this network, which excludes the opposition and dissidents. According to this definition, Mexico's PRI was a one-party dominant system, similar to the Congress Party of India, albeit with the difference that India's opposition is characterised by greater fractionalisation than Mexico's, making it difficult for the Indian opposition to unite again Congress. On the contrary, in Mexico, PAN was able to garner enough support alone to overtake PRI, despite the fact that coalition attempts between PAN and PRD were not highly successful in the 1980s and 1990s.

The Mexican situation differs Kothari's (1964) view that the job of the opposition in a one-party dominant system is mainly to function as a counterweight, and to ensure that the dominant party does not stray too far from the public opinion. In India, this is a valid characterisation, as the Congress Party remains in power despite electoral setbacks; in Japan, the Liberal Democratic Party (LDP) has similarly remained in power, but through the use of coalition strategies (Johnson, 2000). In Mexico, PAN and PRD were both substantial contenders and eventually ended PRI dominance.

PRI, Congress and LDP in their hegemonic states all share(d) a certain sensitivity to the opposition; it is possible that PRI now follows in the footsteps of LDP, which had a dip in popularity in the early 1990s, but regained power. The federal elections of 2009 and the local elections of 2010 suggest PRI might also be regaining some of its former influence, and Japan is likely to be an interesting parallel to Mexico's future democratic development.

However, despite the eventual peaceful transition to a multiparty system, PRI did utilise also certain methods that may be classified as oppressive (such as the Tlatelolco massacre of 1968), like the methods of Indira Gandhi in India (Hardgrave and Kochanek, 2008). Defections took place from both Congress and PRI, and dissenters formed alternative groups (Congress O in India and PRD in Mexico). The African National Congress in South Africa has also suffered fractionalisation and defection; in South Africa, however, the situation is more complex due to the racial divide, an issue which is less prominent in Mexico and India – both somewhat fractionalised in ethnic terms, but without major conflict between ethnic groups.

Many of the issues in Mexican politics from the 20th century remain relevant. Social justice never ceased to be an important divider in Mexico, as it is in India, South Africa, and much of the developing world. Unemployment is still one of the major issues influencing

the Mexican countryside, not least because it affects migration and remittances. Land ownership is no longer a major issue, both because agriculture has ceased to be a major driver of growth, and because both legal and informal barriers to farmers' land ownership are now low. The geographic isolation of many towns and villages is a major problem for economic development, political campaigns and social assistance programmes. The north-south divide, stemming from the days of Francisco Madero and Emiliano Zapata, remains as important as ever. Containing unrest is always a priority, due to a perception of poor social justice. Unrest continues to be encouraged by some populist politicians, as well as contained through conciliatory economic and social policy (although no longer through land reform). In summary, the spirit of the Revolution has not been forgotten, and is regularly invoked in modern Mexican politics.

2.2 Formal political institutions

Mexico today is a federal republic with 31 states and one federal district (the capital, Distrito Federal), with a presidential political system. In Mexican legal texts, the term *entities* (*entidades*) is used to refer to all 32 together, the distinction between states and entities being necessary, as the legal arrangements of Distrito Federal occasionally differ from those of states. In this study, the term *states* refers to all 32 entities, of which 28 have had that status since the 19th century, one achieved statehood in 1917, one in 1952 and two in 1974.

The federal government controls the entire territory, but the Federal Constitution of 1917 – rewritten after the Mexican revolution of 1910 – recognises the sovereignty of states (except Distrito Federal) to have some control over their individual governance structures. Politically, Mexican states are highly independent.

The Constitution also divides political power into three branches: Executive, Legislative, and Judicial. The focus of this research is on the Executive and Legislative branches at all levels: federal, state and municipal. The following table summarises the relevant authorities and the English translations that will be used to denote each in this study.

Table 2.1 Mexican governance structures

	Level of governance	Executive branch	Legislative branch	Representatives in Legislative branch
31 states of the federation	Federation (*federación*)	President (*presidente*)	Congress (*Congreso*) consisting of Senate (*Senado*) and Chamber of Deputies (*Cámara de Diputados*)	Congressmen (*congresistas*) consisting of Senators (*senadores*) and Deputies (*diputados*)
	State (*estado*)	Governor (*gobernador*)	Local congress (*congreso local*)	Local deputies (*diputados locales*)
	Municipality (*municipio*)	Mayor (*presidente municipal*)	Town hall (*ayuntamiento*)	Municipal deputies (*munícipes*)
Distrito Federal	Federal District *or* Mexico City (*Distrito Federal*)	Governor (*jefe de gobierno*)	Local congress (*asamblea legislativa*)	Local deputies (*diputados locales*)
	Municipality (DF only) (*delegación*)	Mayor (*jefe delegacional*)	Delegation (no legislative powers) (*titulares de los órganos político-administrativos de las demarcaciones territoriales del Distrito Federal*)	Delegates (*delegados*)

The president is elected every six years through a direct majority vote, and the candidate with most votes wins. This system enables winning with a relatively small percentage of the votes: the current president Felipe Calderón won in 2006 with only 37% of the votes (Nacif, 2007). The presidential term is six years, and as per the 1917 Constitution and its subsequent alterations, immediate re-election is not possible for any elected official in Mexico, at any level of government.

The Legislative branch is composed of the two chambers of Congress: Senate and Chamber of Deputies, which are both fully replaced every term, due to the re-election ban. The Chamber of Deputies term is three years, while a Senate term is six years, coinciding exactly with two Chamber of Deputies terms. Senate consists of 128 senators: three for each state and Distrito Federal, and 32 senators-at-large. There are three ways to be elected into Senate, and all are chosen in the same elections. Two senators come from the top of the winning party's pre-determined candidate list in each state (relative majority), and one comes from the party that was second in terms of electoral success (first minority). The senators-at-large (proportional representation) do not formally represent a state, but instead the seats are awarded based on the vote proportions that each party received nationally. The key issue here is that senators representing states are accountable to a well-

defined geographic area of voters. However, the control mechanisms of senators-at-large are substantially poorer, and any discipline imposed on them relies on the political parties.

Similarly to the Senate, the Chamber of Deputies also consists of deputies elected in various ways. Three hundred deputies are elected by relative majority, one from each of 300 congressional districts, and 200 deputies are elected by proportional representation and do not directly represent electoral districts.

At local level, governors have essentially the same powers within their states as the president holds over the federation: they are responsible for the local government, state congress, and municipalities, with the essential difference that there are fewer formal mechanisms for monitoring state governors than there are for the president. The practical limits to the governors' powers come from the president's powers to influence the state budgets, and if the state government is divided, the governor is far more constrained in spending (Hernández Rodríguez, 2003, 2006).

The composition of local congresses and town halls varies widely. Local congresses are elected every three years, according to states' varying electoral calendars, and governors are elected separately. At the municipal level, mayors are not elected separately, but the winning party's highest-ranked candidate on the electoral list automatically becomes mayor, thus eliminating the possibility of divided government at municipal level (Nickson, 1995).

There have been frequent electoral reforms in both chambers of Congress since the start of the transition to multipartism at the beginning of the 1990s. In the Senate, the 1993 electoral reform doubled the number of senators from 64 to 128. It also introduced proportional representation to the Senate, leading to a system where the three senators from each state were from the same party, and the other 32 senators were chosen by proportional representation. The elections of 1994 saw new rules regarding the distribution of proportional representation seats for Chamber of Deputies elections. The main objective of these reforms was that the number of proportional representation seats should not depend on the number of districts won. They also introduced limitations to how many seats one party may hold, to exclude the possibility that one party alone might modify the Constitution.

Further reforms in 1996 made it even more difficult for the majority party to gain a simple majority in the Chamber of Deputies. In the Senate, similarly, the reforms of 1996 introduced the concept of the first minority, which involves always electing one senator from the second party. The current system of half by relative majority, one quarter by first minority and one quarter by proportional representation is the result of the 1996 reforms.

This mixed system between relative majority and proportional representation has been internationally criticised (e.g. World Bank, 2007) for failing to help minority parties gain power, which was the main rationale for introducing the system.

As was described in Section 2.1, the power of the president was considerable in Mexico until the early 1990s, but it has diminished since the entry of various parties into Congress and the presidency. The presidential system in Mexico does not translate to strong authoritarianism; President Vicente Fox (2000-2006) is considered to have been a weak president due to his failure to gain support from his entire party (Klesner, in Randall, ed., 2006). As stated above, even during the era of the hegemonic party, much of the president's power was not constitutional, but came from a combination of the strong position of the party in domestic politics and the president's strong position within the party (Mainwaring and Shugart, 1997). The president's powers included the appointment of officials and the distribution policy of federal tax revenues to states, along with other practices that gave officials strong incentives not to disagree with the president. Klesner (in Randall, ed., 2006) terms these "metaconstitutional powers".

The counterweight role of the Congress is made difficult by the fact that members of Congress are dependent on the president for the continuation of their political careers. Klesner (in Randall, ed., 2006) notes that when the re-appointment of government officials depends solely on the president, the incentive for the bureaucrat is to fulfil the president's wishes whether or not this serves the constituents. The no re-election rule ensures that politicians' interests are short-term, from three to six years, and because officials never have direct electoral accountability to constituents, and the responsibility for any single official's actions is carried by his party, acting to the president's preferences is strongly recommended for congressmen wishing to continue their careers. Casar (1999) goes as far as to state that Congress *had the incentives to behave as if they only had one voter: the president*.

The federal structure in Mexico does not encourage state discretion or encourage states to act as counterweights or veto players, due to practical political realities. Political competition may be slowly changing this, but there are a number of particular very persistent features of the Mexican political system that hinder the ongoing transition from clientelism to professional bureaucracies.

In a multiparty environment, clientelism is diminishing, as the appointments of opposition politicians do not depend on the president. The involvement of more parties in the decision-making process has reduced the dependency of representatives on the president. The number of non-PRI actors in the political process has grown in Mexico since the 1970s, and at an accelerated pace since the mid-1990s. Simultaneously, the president's "metaconstitutional" powers have declined. *De facto* presidential discretion has been high, but not constitutionally. Presidential power in Mexico is a multiplicative dynamic between the position of the party in decision-making, and the president's position within the party. In addition, the president names most public officials at federal and state levels, and this power translated to control of the entire political system. During the PRI era, this system led to the president's power being doubly important, as the most important person of the most important party.

Parties feature prominently in Mexican political history and reforms, and continue to shape the political economy of Mexico. It is worth noting that the major formal institutional changes that led to an increase in political diversity were electoral reforms that increased the requirements for interaction and collaboration, as well as altered the incentives of parties and politicians for campaign focus and regional politics. Alterations of presidential power have been rare (Nacif, 2007), and have not had a massive impact on politics at any level: federal, state or municipal. Similarly, the onus of Congress reforms has been on improving inclusion of parties in decision-making. The focus of Mexico's "transition to democracy" has been mainly through political parties and their varying roles.

2.2.1 Political parties

There are currently three powerful political parties in Mexico: PRI (Institutional Revolutionary Party), PAN (National Action Party) and PRD (Party of the Democratic Revolution). On a left-right scale, where 0 is extreme left and 10 is extreme right, Colomer and Escatel (2005) rate these as follows, based on voters' self-placement: PRD at 4.2, PRI

at 5.0 and PAN at 5.3. Similarly, Camp (1999) locates PRD on the left, PRI on the centre-right, and PAN on the right.

It is clear that all are fairly clustered in the centre. Of Colomer and Escatel's sample, which includes 17 Latin American countries, this is one of the smallest variations between major parties, and the only country where the cluster is clearly in the centre and not towards the political right.

As recounted in Section 2.1, PRI was the hegemonic party throughout much of the 20th century, from 1929 until the late 1990s. It held all Senate seats until 1988, all state governorships until 1989, a simple majority in Congress until 1997, and the presidency until 2000. These years map the transition from PRI hegemony to a veritably multiparty system.

Nacif (2007) gives two reasons for the longevity of the hegemony: clientelism and the capacity to manipulate election results. PRI's target groups included large segments of society, mainly farmers and members of manufacturing trade unions, and this enabled a huge party base of workers whose practical involvement in party affairs was minimal. In addition, all political and public administration positions in the country were controlled by PRI. Not only were the incentives to favour PRI considerable, but workers were also pressured to vote correctly in elections. Since the ruling party was responsible for organising elections until the electoral reforms of 1994, PRI was also able to manipulate election results until the formation of an independent IFE (Federal Electoral Institute). Nonetheless, it is argued (e.g. Bruhn, 1996) that electoral fraud was used only as a last resort.

PRI policies over the years have been varied. The PRI era saw both successful and unsuccessful economic policies: the boom of the 1950s and 1960s, instability in the 1970s, and two severe economic crises in 1982 and 1995. However, it is difficult to summarise PRI's economic ideology. There were many factions within the party, and these were rotated in power during the hegemony; no one school prevailed. Most writers today agree that the primary goal of PRI policies was to ensure the survival of the hegemony, and other, more specific goals were tailored according to circumstances in different times and different places to ensure electoral victories.

PAN (National Action Party) was the primary opposition party for much of the PRI hegemony. It is a moderately conservative party with interests in promoting small government and Catholic values, to the extent that religious displays are allowed and accepted in Mexican politics. As described above, PAN was until recently mainly concerned with the anti-hegemony agenda, and now that the hegemony is history, it has been gradually developing its agenda on the issues.

The first non-PRI mayor was from PAN, appointed in 1946 in the state of Michoacán. The first PAN governor was elected from Baja California, in what Bruhn (1996:256) terms a "*discretionary decision…* [by president Salinas] *not to exercise* [the] *option* [of electoral fraud]".[2] The first PAN senator was also elected from Baja California, in 1991. However, PAN was not the first opposition party in the Senate: the National Democratic Front, which would later become PRD, was an alliance of PRI dissidents and had four senators in the 1988-1991 term.

Nacif (2007:49) argues that PAN's main goal for much of the 20th century was to *"construct a civic and participative culture rather than compete for power".* It is possible to argue that this view glorifies PAN as the party of democracy, when in reality the options open for PAN during much of the hegemony were limited to either participating and losing, or not participating at all. Nevertheless, it cannot be denied that the presence of PAN and other parties in elections throughout the 20th century provided a steady, if weak, counter-force to the PRI machine.

Since the end of the hegemony, PAN has been able to expand into what is arguably the primary opposition to PRI in many areas. This has been the case especially since Vicente Fox's (PAN) election for president in 2000, and helped by the fact that PAN kept the presidency in 2006. PAN is also the only mainstream party with a clearly conservative, market-oriented ideology, and therefore competes on the other side of the centre compared to PRI and PRD.

The third large party in Mexican politics is PRD (Party of the Democratic Revolution). Its origins are in a faction of PRI that tried to influence the elections of 1988, and were

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[2] Full quotation: *"[T]he 1990 code left the PRI with institutional control over the electoral process, creating a potential fraud as a last resort. Discretionary decisions not to exercise this option sometimes led to democratic results, as when Salinas decided to accept a PAN victory in the 1989 election for governor of Baja California."* (Bruhn, 1996:256)

expelled from the party. This caused the rift between factions of PRI to be visible, and began a round of negotiations that helped instil a tradition of talks between parties (Nacif, 2007). It is clear that the contribution of both opposition parties, PAN and PRD, was influential in eroding the hegemony.

To date, PRD is influential mostly in poor states in central and southern Mexico, and also in the capital. Its political platforms are moderate left in most areas, although themes vary between states. Hilgers (2005) states that it is *"an agglomeration of leftist groups rather than a coherent political expression"*, and argues that PRD is strongly embedded in the PRI tradition of clientelism, attracting fame and votes with social programmes aimed at certain interest groups, such as food for the elderly or reading sessions for children to present party material to their parents.

Other parties in Mexico include PVEM (Green Ecological Party of Mexico), PT (Workers' Party) and Convergencia (Convergence). These have enjoyed limited success, and are not clearly becoming mainstream parties in any state. The first senator from any of these parties to be elected through the relative majority as representative of a state was a PVEM candidate from Distrito Federal, elected to Senate in 2000. Prior to 2000, small party representatives had been elected to Senate only through proportional representation, i.e. based on the number of votes nationally. Mayors from these parties are not an uncommon occurrence, but are more common in poor states, such as Chiapas, Hidalgo, Oaxaca and Tlaxcala.

Finally, in the state of Oaxaca, 421 municipalities of 570 are currently registered as governed by "practices and customs" (*usos y costumbres*), rather than political parties. These municipalities are mostly indigenous villages, where the local culture bans political parties. Until 1995, representatives elected in these communities were automatically registered as members of PRI, but since then they have been recognised as a separate political system, free of party links.

2.2.2 National electoral trends

In this section I show the electoral trends in executive and legislative elections, without breaking them down to state level. This shows the gradual changes in the political arena. The presidency changed hands in 2000 from PRI to PAN for the first time in modern

Mexican history, but it is interesting how the other changes have taken place in the local executive levels, as well as in local and national legislative bodies.

Figure 2.2 Governors, by party, 1988-2007
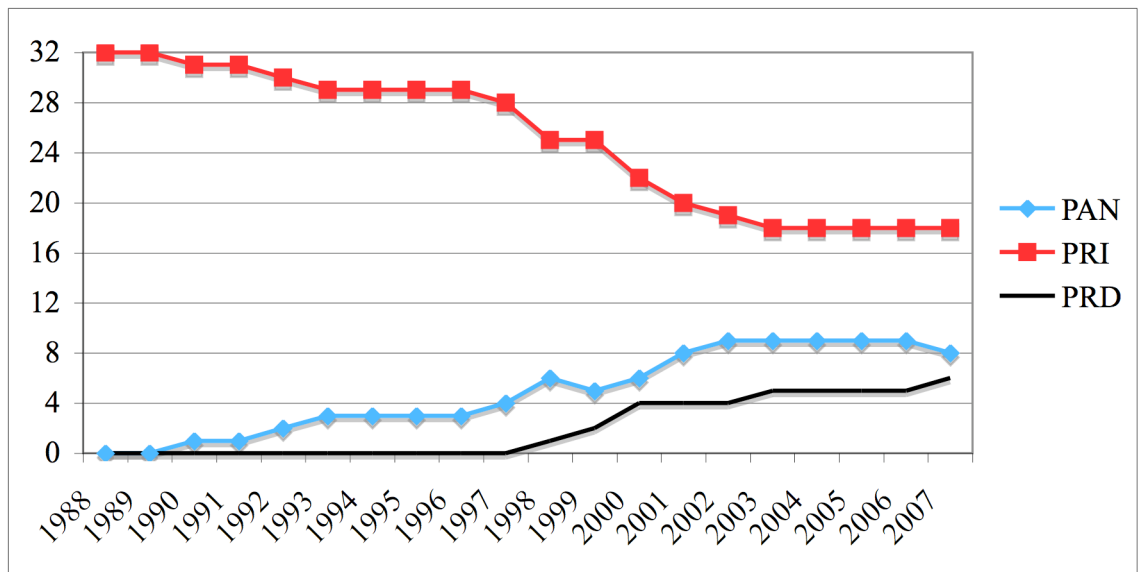
The trend that PRI has declined is clear. PRI lost nearly half the governorships during the 1990s, but continues to hold 18 governorships, and the numbers have not changed markedly since 2002. PAN and PRD experienced a steady rise in governorships until 2002. It is visible here that PAN has been present as a party in executive-level politics for roughly a decade longer than PRD.

The trend is similar in mayors. I express the figures as a three-year moving average, because the data is in terms of mayors elected each year, and as states have different electoral calendars but all elections must follow a three-year interval, averaging three years gives a proxy for the number of mayors in office at any particular time in Mexico's over 2000 municipalities.

Figure 2.3 Mayors elected, by party, 1990-2007, three-year moving average
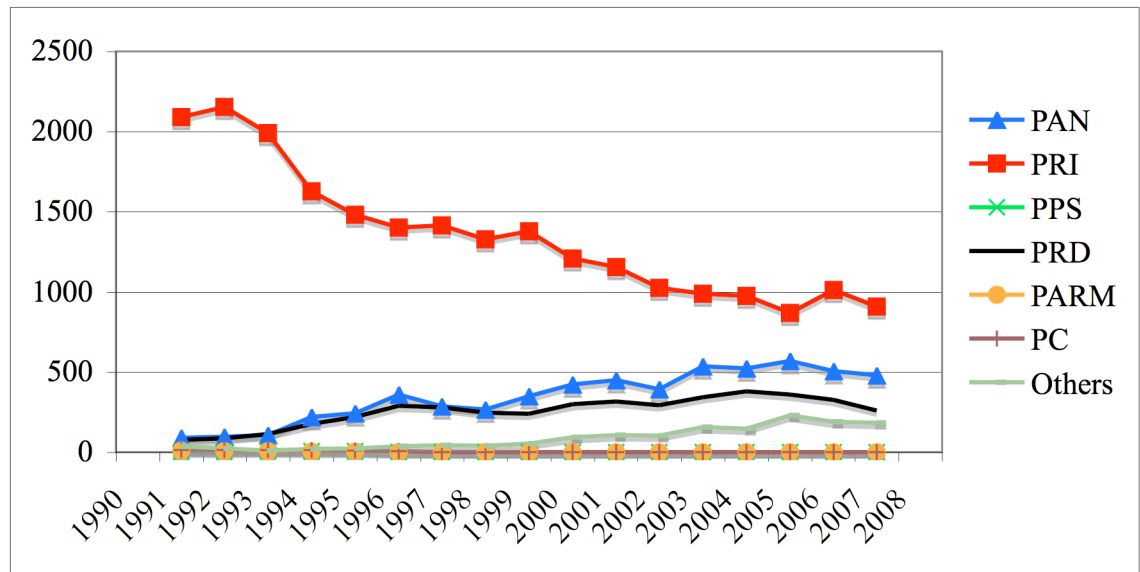
The trend is very similar to the governors. PRI continues to hold roughly half the seats despite a steady fall in numbers, and the steep decline has stopped around the year 2000.

In the federal legislative branch, the situation looks slightly different. The diagram below shows the composition of the Federal Senate over time, and shows the development of a multiparty environment since the 1993 and 1994 reforms at the national level.

Figure 2.4 Proportion of Senate seats by party, 1985-2009

At Chamber of Deputies level, similar patterns are observable, but with some additions. I present the three now-dominant parties in a different chart from the small parties for two reasons: to make comparison easier with the above charts, and to show the characteristics of small parties.

Figure 2.5 Shares of seats held in Chamber of Deputies by major parties, by party, 1976-2009
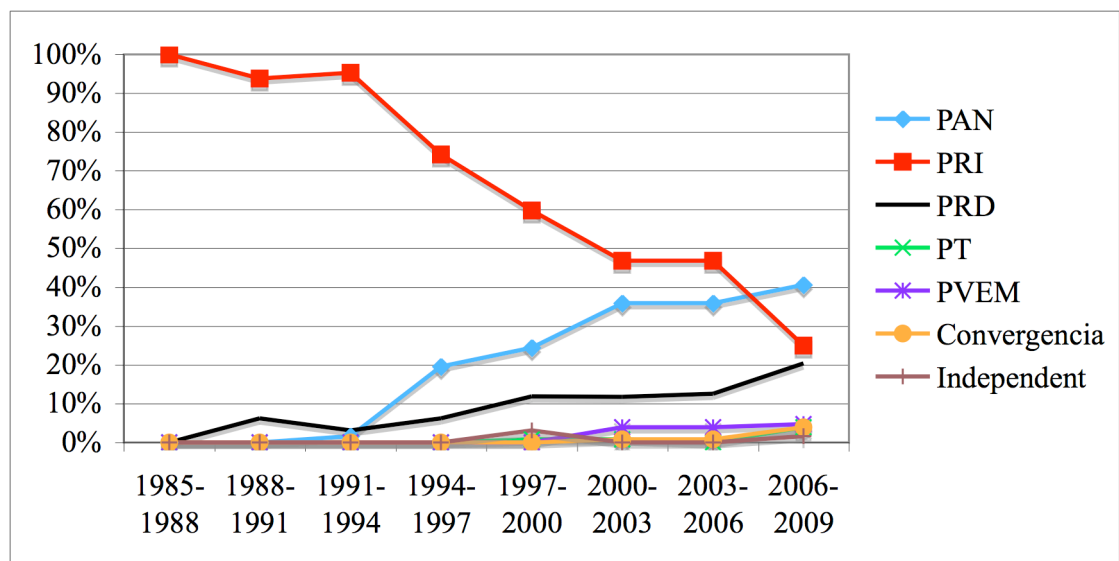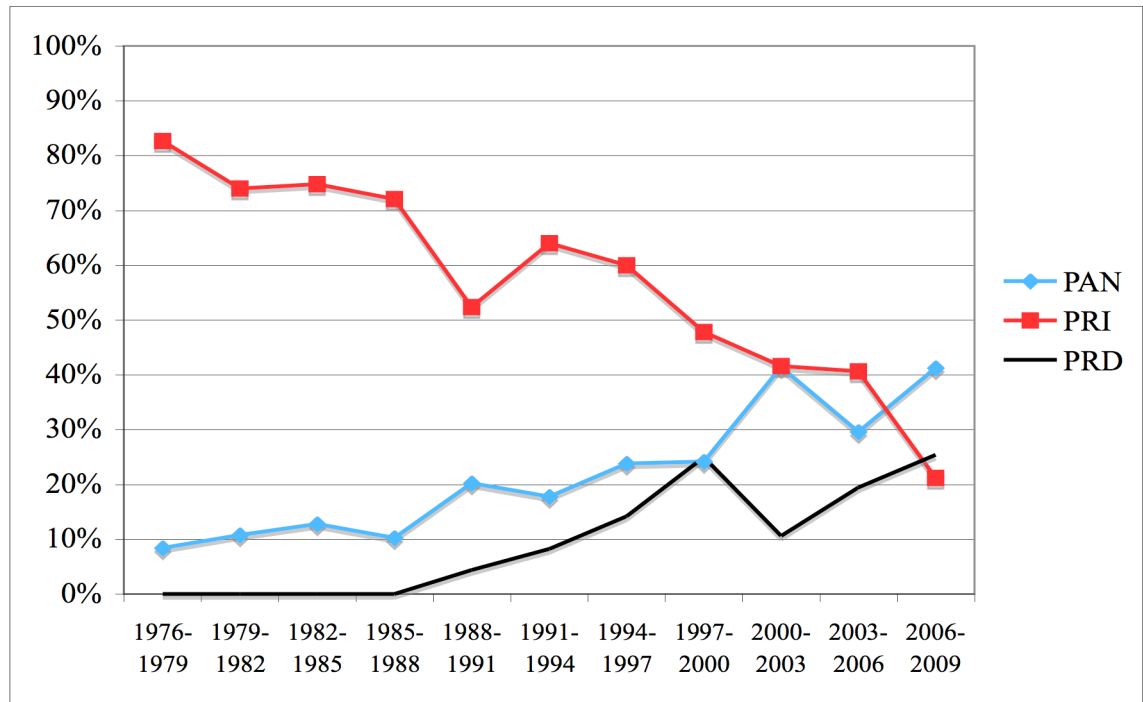
Source: My elaboration of Senate library archives in Mexico City

I show the shares of the total number of Deputies in each legislature, and the same trend prevails: PRI has lost ground to PAN and PRD, particularly during the 1990s and 2000s. The trends are slightly less smooth than with senators or governors. This is likely because election campaigns by small parties or in particular areas can dent a large party's deputy count in one particular election much more easily than taking senate seats or governorships.

The Deputies data also shows some unexpected events between parties. From 1997-2000 to 2003-2006 it appears that PAN lost Deputy seats to PRD, and then vice versa, while the PRI's deputy seats remained roughly at their 1997 level. However, it is likely that these changes, rather than being due to competition for votes between PAN and PRD, are a result of the actions of the smaller parties.

In the state and municipal level legislative branches, the trend is again similar.

Figure 2.6 Percentage of total seats in local congresses, 1991-2007, 3-year moving average
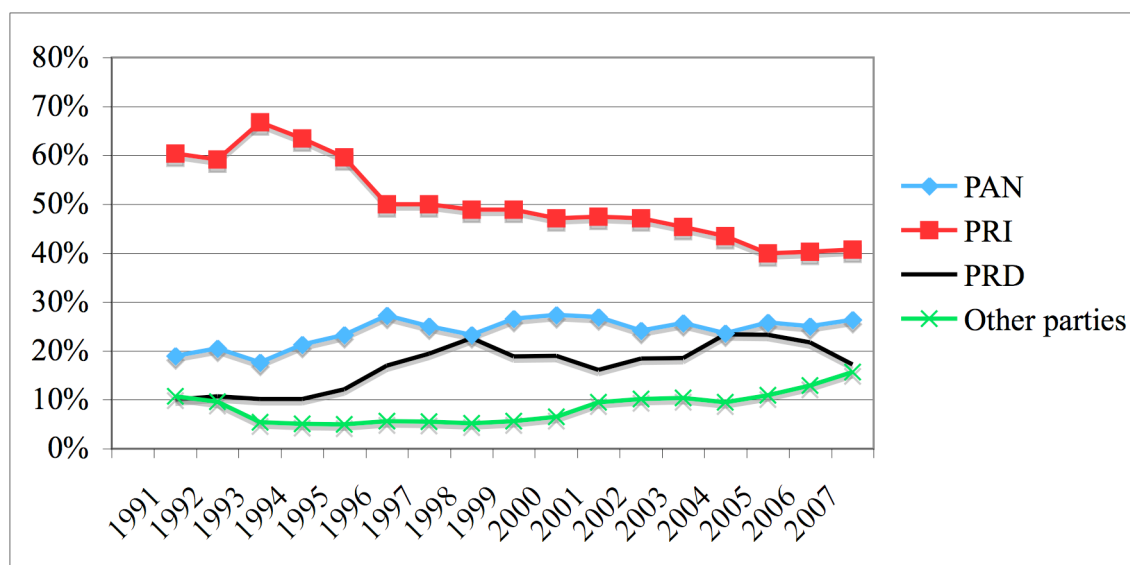
Figure 2.7 Percentage of all town halls, by controlling party, 1991-2007, three-year moving average
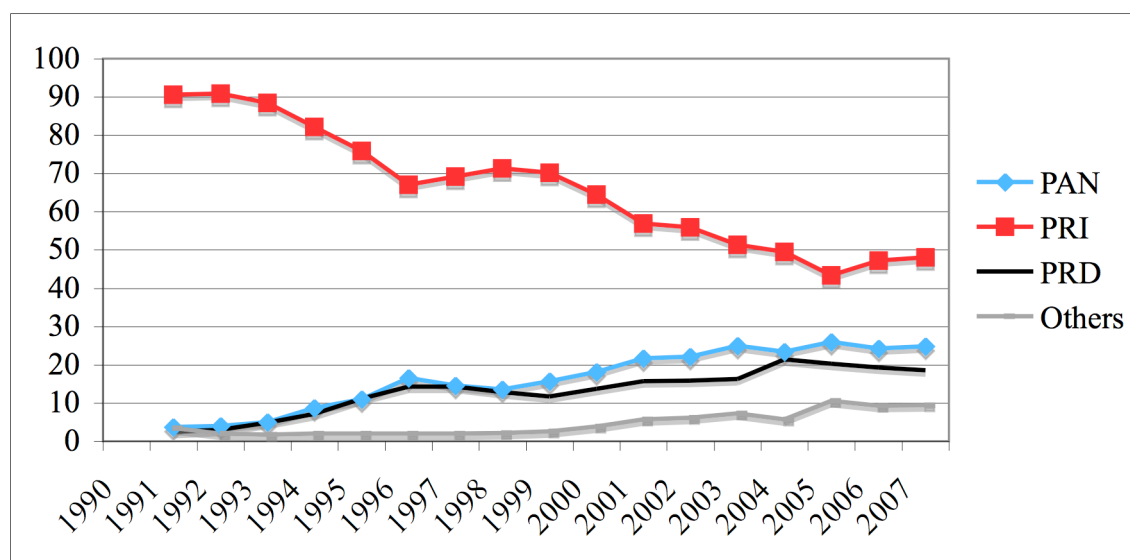
There are some differences between federal and state/municipal level. In 1990, the federal Senate was still over 90% under PRI control, whereas the local congresses and town halls have had more diversity from an earlier date. However, in 2009, PRI still controls nearly half the seats in local congresses as well as half of all town halls, while their share of seats in the Senate and Chamber of Deputies has fallen to 20%.

The decline of PRI control has been far more gradual on state and municipal level than at the federal level. The fall has mainly happened since the early 1990s, when substantial reforms took place to ensure that PAN, PRD and other opposition parties were included in federal legislative bodies. However, as both the federal Constitution and state constitutions stipulate that state and municipal elections are the responsibility of local electoral bodies, any reforms at state level are varied and cannot be imposed nationally.

The fact that many states elect senators and deputies from other parties but choose PRI governors, mayors and municipal deputies is most likely a testament not only to the strength of the PRI campaign machine, but also to the power of the electoral reforms of the 1990s. The reforms diversified the political representation at federal level, but due to the sovereignty of states, were not able to enforce similar diversification at local level. Therefore, it is clear that the reforms have worked to push a multiparty system.

2.3 Informal political institutions

While the previous section presented the formal framework in which Mexican politicians, parties and voters make decisions, this section is intended to present the de facto political environment and its primary challenges. Formal institutions have historically not been highly trusted, and the greatest trust Mexicans express is towards informal institutions.

Figure 2.8 Confidence in institutions nationally, % of people, 2003
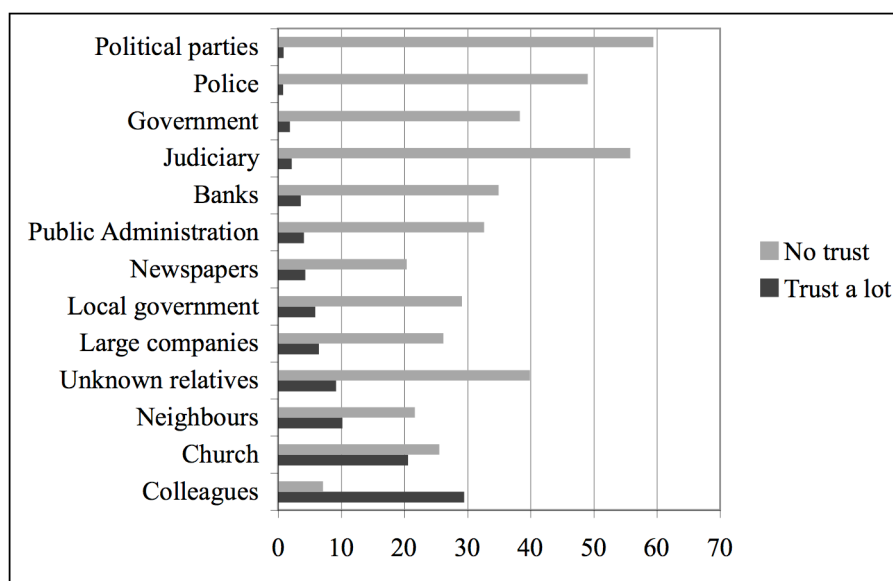
Source: Latinobarómetro (2007). All data from 2003 except Public Administration from 2005.

It is clear that those institutions that elicit the highest number of "trust a lot" responses are informal institutions involving small groups of people. In the middle there are institutions that elicit mixed responses: newspapers and local government are very local issues, and the quality of local institutions varies widely in Mexico due to the autonomy of each state for institution-building and the inability of the federal government to force reforms. At the top are the least trusted institutions: public administration, banks, judiciary, government, police, and political parties.

Here, I focus on explaining why Mexicans would consider political institutions untrustworthy. A large part of this is the widespread belief that clientelism abounds and the political process is not democratic, which are common concerns among many different socioeconomic groups of voters. I will evaluate all these concerns here. In addition, I discuss the situation of political competition in Mexico, and how this has changed after what Mexicans call "the transition to democracy".

2.3.1 Is Mexico democratic?

The answer to this question depends largely on the definition of democracy that is used. If the definition is that of Dahl (1971), relating to opportunities for information and participation in the political process, most scholars agree that Mexican democracy is satisfactory or even at a commendable level when compared with other countries with similar resources (e.g. Bizberg, 2008; Negretto, 2008). The Constitution stipulates that all elections must be "*free, authentic and periodic*" (Article 41), and determines that subnational elections (governors, local congresses, town halls and mayors) are to be "*with universal suffrage, free, secret and direct … and carried out with certainty, impartiality, independence, legality and objectivity as the main guidelines*" (Article 116:IVa-b). Interviewees agree that access to both voting and candidacy is at a good level in all parts of the country. The only barrier to becoming a candidate is that in order to stand for election at any level, one must be a candidate of a party and therefore approved by an existing political party.

However, some writers consider that political democracy is insufficient, and that democracy should also consider access to economic resources and basic needs. It is a debatable matter whether Mexicans have equal access to these resources, and whether this constitutes a shortfall in democracy. Camp (1999) considers the concept of *social justice*: the

belief that all citizens will have the same rights in front of the law. Camp (1999) mentions that only a third of all Mexicans have some confidence in the judicial system, and gives the lack of social justice as one reason. As is seen frequently throughout Mexican history, the perception of social justice influences whether people support the operation of formal institutions.

Whilst the current state of democracy is considered relatively good, it has not been that way for long. Schedler (2004) states that democratic transition begins when authoritarianism is no longer a certainty, and democratic consolidation occurs when the democratic regime is a relative certainty. According to this definition, Mexico is in transition.

Figure 2.9 The Polity IV Polity Index in selected countries, 1970-2009
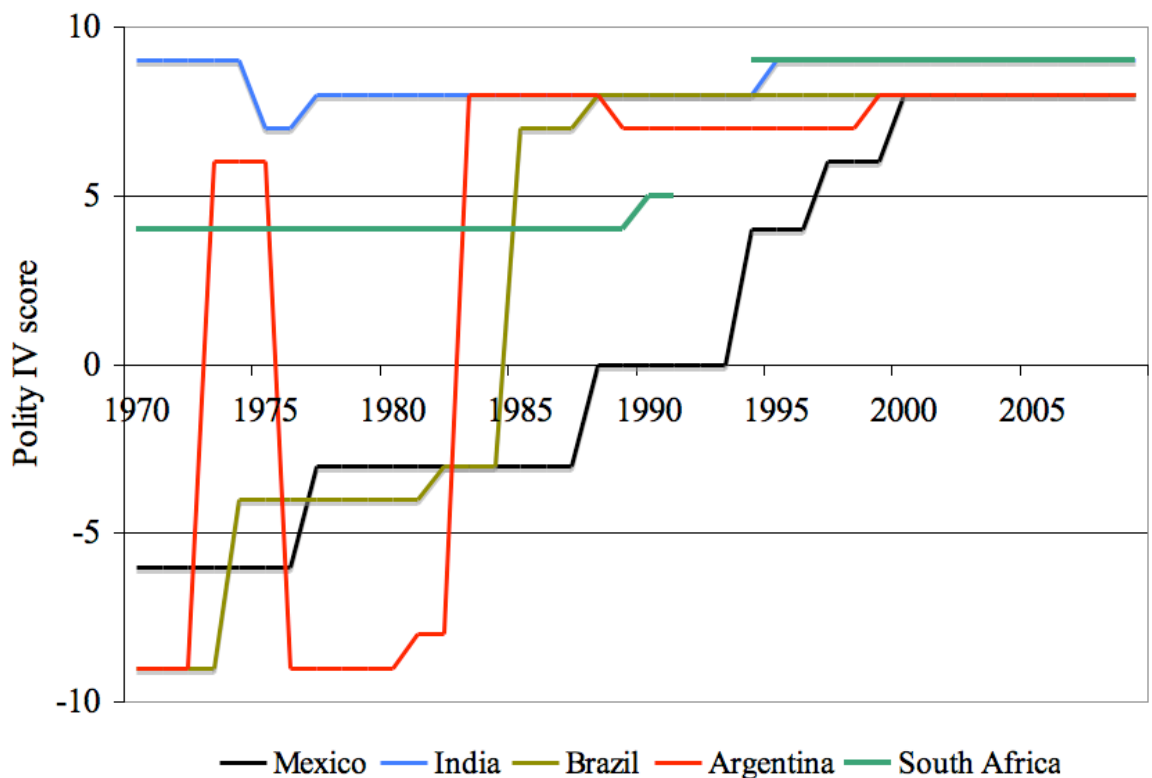
Source: Polity IV Polity Index, where −10=fully institutionalised autocracy, +10=fully institutionalised democracy. The figures for South Africa in 1992-1993 are denoted as -88 or "transition" and therefore no reliable figure is available for those years.

In Figure 2.9, Mexico is presented among other countries with similar federal structures (India, Brazil and Argentina), a similar 1970 starting point in terms of democracy (Brazil and Argentina), and a tendency of one-party domination (India, Brazil and South Africa). It is clear that Mexico's rise from a figure of −6 (classified by Polity 4 as "autocracy") to the level of 8 ("democracy") has been remarkably consistent. Argentina, on the other hand, has

experienced large fluctuations; Brazil and South Africa each had one significant rise, in 1985 and 1992 respectively. Mexico, however, has had no falls in the Polity Index since 1970, indicating a tendency for democratic conditions to improve steadily, rather than through large fluctuations in either direction.

In Brazil, the 1985 increase in democratic tendency marks the end of a 21-year military dictatorship. Levine (1979) characterises Brazilian authoritarianism in the 1970s through great fragility in the relationships between the military and other branches of the state, such as the legislature, as well as through social unrest and oppression, similar to Mexico's student and farmer protests in the 1960s.

In South Africa, the transition coincided with the repeal of apartheid laws, and the first fair and all-colour election, which would see Nelson Mandela elected president. It is notable that both South Africa and Mexico experienced changes towards democracy as a result of pressure from outside: South Africa's white supremacy laws were unique in southern Africa by 1992. Brazil was one of the last countries in Latin America to put an end to military rule in 1985, after Ecuador and Nicaragua in 1979, Peru and El Salvador in 1980, Bolivia and Honduras in 1982, and Argentina in 1983. When Brazil ended the military period, Chile was the only large Latin American nation still under military rule. However, the outside pressure experienced by Mexico to improve its democratic standing was weak by comparison. The Mexican situation, despite PRI hegemony, was viewed as a fairly stable government in the context of the region (as summarised by Davis and Brachet-Márquez, 1997:89). Oppressive methods were, however, being used to maintain PRI power (e.g. Fagen, 1977), and modern writers (e.g. Teichman, 1988) tend to acknowledge the heavy authoritarianism and political co-optation practiced by PRI, despite its dissimilarities to other types of Latin American (military) authoritarianism.

Democracy has not always been a priority in Mexico, particularly when economic realities have taken centre stage. Centeno (1994) argues that in the presidency of Carlos Salinas (1988–1994), economic reform had been treated as a priority and it was considered that political reform would follow, and in the name of economic reforms, political dissent was quieted and *"selective democracy"* was in place (Centeno, 1994:225). It is nearly established as fact among scholars that the 1988 presidential elections were flawed, as a last resort option by a PRI that was used to aggressive campaigning and voter attraction methods, but had never had to resort to electoral fraud. This shows that as recently as the early 1990s, there

was widespread doubt about the level of democracy in Mexico. Therefore, there is suspicion, particularly among the less educated, and democratic consolidation is still not complete in Mexico. Gómez Tagle (2006) argues that the events leading up to the 2006 presidential elections, an attempt by PAN to disqualify the PRD candidate, revealed the deficiency of Mexican political consolidation. This is partly due to clientelism, which was common in the PRI era, and particularly in local and municipal government is still present, if not widespread.

2.3.2 Clientelism

One of the main concerns of citizens in Mexico according to numerous political surveys (e.g. *Encuesta Nacional de Gobierno, Sociedad y Política*, 2008) is the belief that politicians have motivations other than the well-being of the constituents. This is not new and not particular to Mexico, and in much of the literature on political incentives and institutions, the general assumption is that career considerations and other selfish motives are most important to politicians. However, the concern of voters is that politicians make decisions based on clientelistic motives, i.e. based on their relationships with different groups, and I argue in this thesis that that is the case in public finance. Here I summarise what clientelism is in the Mexican context.

Fox (1994:153) defines clientelism as "*a relationship based on political subordination in exchange for material rewards*", and gives the example of clientelism where votes are given in exchange for access to distributive programmes, in other words, where citizens' rights depend on their political affiliations. Similarly, Bizberg (in Vega Cánovas, 2007) defines clientelism as "*exchanging votes for favours*". During the PRI era, this was commonplace in Mexico, but the Mexican system is renowned for its replacement of rigid authoritarian structures with the quasi-democratic PRI-led "*perfect dictatorship*". PRI's clients were normally the poor: farmers and manual workers, who could become party members just by joining a trade union. In most cases, the poor tend to be unorganised, which makes them an easy target for vote-buying and other clientelistic practices (Bizberg, in Vega Cánovas, 2007). In order to keep this ideologically loose support group, PRI needed all possible formal institutions (trade unions etc.) to be functioning, and any violent change in the structure of these institutions would have likely helped erode the PRI base.

Therefore, Mexican institutional development has been gradual. The last PRI president, Ernesto Zedillo (1994–2000), made large concessions towards democratising the political system, finally leading to the end of the hegemony (Loaeza, 2008). Therefore, the transition was peaceful: political violence has not been widespread, and political institutions have at no point been destroyed or even substantially challenged. Such development contrasts with the expectations of Acemoglu and Robinson's (2001) theory of transitions that democracy is less likely to be consolidated in an unequal context, and high inequality tends to lead to frequent regime changes.

Haggard and Kaufman (1995) observe that authoritarianism is often found in poor countries, and democracy in rich ones, with middle-income countries encompassing a wide range of democratic consolidation levels. O'Donnell (cited in Remmer and Merkx, 1982:3) argues that highly developed middle-income countries tend toward *"bureaucratic authoritarianism"*, whereas less developed countries are likely to succumb to oligarchical forms of authoritarian rule. Acemoglu and Robinson's (2001) theory of authoritarianism in unequal settings is compatible with this in a Latin American setting: typically, the countries with the highest levels of per capita income (e.g. Mexico, Chile, Brazil, Argentina) tend to also be among the highest in terms of inequality (Uruguay being the relatively wealthy and quite equal exception). In addition, in Mexico, from the 1970s onwards, there was a clear tendency for wealthy states to develop more advanced democratic mechanisms, whereas many poor states still suffer traces of populist authoritarianism.

Finally, Haggard and Kaufman (1995) provide an argument for economic crises as drivers of political transitions, one that is certainly likely to be valid in Mexico. Haggard and Kaufman (1995:34) show empirically that most countries where transitions take place have suffered economic strife (declining growth or increasing inflation) in the years prior to the transition year. Gasiorowski (1995) also theorises that from the 1980s onward, economic strife was likely to function as catalysts to a transition to democracy (in contrast to earlier decades, when economic strife was likely to hinder political development). Many authors (e.g. Schedler, 2000; Haber *et al*, 2008) argue that the economic crisis of 1994–1995 was a final trigger to the Mexican democratic transition.

Fox (1994) describes the Mexican transition as going from clientelistic to semi-clientelistic and then to pluralist, mainly through grassroot organisations that balanced between receiving economic benefits from PRI whilst maintaining their autonomy in a number of

ways, including abstaining from elections. Fox (1994) considers the various Solidarity programmes in the 1980s and 1990s to have improved links between indigenous and minority organisations and the state, which he argues helped erode clientelism. However, solidarity programmes were also used to suppress the opposition, with varied results in different parts of the country and even within states. It is clear that clientelism was particularly present at local level, which highlights the importance of sub-national study in the case of Mexico.

2.3.3 No re-election and political incentives

The no re-election rule, part of the Mexican Constitution, is one of Mexico's most important formal political institutions, and forms one of the major sources of the incentive structure of Mexican politicians. Therefore, it is of immense importance in the analysis of how Mexican politicians think about their policies and political futures. The president, senators, members of Congress, state governors, municipal heads and any other directly elected officials, as well as public officials, cannot be immediately chosen for a second term in the same position.

This rule has a number of consequences for the incentives in the political system. Firstly, no individual official can be held accountable for term-time decisions through a re-election bid. The electorate can only express satisfaction or dissatisfaction through keeping the same party in power or voting for the opposition, and the party therefore becomes collectively accountable for the actions of all its officials. However, if there is only one party in the system, even the party cannot be sanctioned through electoral means, leading to zero accountability.

Secondly, the no re-election rule necessarily leads to little guaranteed continuity. Even if the same party is in power, policies can change, as they did in PRI times.

The no re-election clause also creates a difference between the political environments in urban and rural settings. In urban settings, there is a larger supply of potential politicians and political jobs, meaning that finding replacements for each term is easier. However, in poorly educated countryside settings, the no re-election rule means that the minimum requirements for becoming a local politician are likely to be lower. Therefore, the no re-election clause is likely to penalise rural settings and lead to less qualified and less

experienced rural representatives. This, again, serves to widen the gap between the urban north and rural south.

Nacif (1997) considers that one of the main consequences of no re-election was that PRI was able to rotate officials from different factions or parts of the party, to prevent any particular faction from feeling disenfranchised and crystallising into an opposition movement. However, this strategy was not ultimately sufficient to prevent rifts, as evidenced by the creation of PRD by PRI dissidents in the late 1980s. However, it is yet another clear example of an attempt by PRI to reform the system through the formal institutions, in order to keep dissidents quiet, keep the PRI machine going, and discourage any actions that dissidents might take through informal institutions to rise against PRI.

2.3.4 Political competition

One of the main aims of this research is to map how changes in political competition have affected the distribution of public funds. There is a rich literature on Mexican political competition, due to its unique authoritarian yet non-violent history, and the gradual transition from PRI hegemony to a presidential democracy. This section is intended to give background information for the hypothesis that relationships between political parties determine the distribution of public funds, but also to show the origins of the changes in political actors and discourse since the 1980s.

It is impossible to discuss Mexican political competition without reference to PRI, which effectively controlled the country as a hegemonic party from 1929 for decades. Writers debate when the end of the PRI hegemony occurred, but most place it between the late 1980s and 2000. The "dedazo" mechanism meant that a handpicked PRI candidate would become the presidential candidate, without primary elections, and therefore automatically become president. The president's "metaconstitutional" powers of vetoing any decision, naming all officials at federal, state and municipal levels, meant that the president was essentially able to choose the representatives for the entire political system. PRI had substantial links to trade unions, and workers were often made PRI members just by belonging to unions. In addition, because the federal electoral institute (IFE) was controlled by PRI until its autonomy in 1996, the entry of other parties into *de facto* decision-making through electoral campaigns was also difficult. These arrangements virtually guaranteed

PRI with control of all political bodies, as well as substantial and nearly guaranteed voter support over decades.

As is evident from the graphs in previous sections on national electoral results, effective institutionalised political competition in Mexico began in the 1980s. Prior to this, the main expressions of political disagreement were expressed outside the formal institutional framework, and these could be easily quashed through the extensive PRI network of supporters in all sectors of the economy (Gómez Tagle, 2006). Therefore, Gómez Tagle argues, PRI did not consider it necessary to prohibit other political parties or dissident activity: it was considered impossible to construct networks strong enough to truly jeopardise the hegemony. However, successive electoral reforms, beginning in 1977 and continuing towards the important reforms of 1993-1996, led to a gradual emergence of more opposition party ideas and an erosion of the hegemony (Klesner, in Randall, 2006). Formal institutions once again played an important part in reforming political practices.

Parties have a large role to play in Mexican politics for many reasons. All candidates running in elections must run as candidates of a political party and never as independents, and "closed-list" elections, where voters can only vote for a party and not an individual candidate, mean that parties determine the order in which candidates are elected. There are independent federal senators and deputies; this is possible if the candidate left the party after his or her election to the position.

By law, campaign finance from sources other than political parties is also scarce, since only 10% of a candidate's funding may come from private supporters (Nacif, 2007). Therefore, parties determine not only the campaign platform, but also the possibility of financing and the probability of getting elected.

Therefore, the emergence of candidates from different political parties as realistic candidates for winning in elections is a reasonable proxy for the emergence of all actors' willingness to promote multipartism in the 1980s and 1990s, within the means available to each actor. The emergence of non-PRI candidates means that PRI did not attempt to quash other parties, and allowed reforms such as giving up control of elections by establishing IFE (Federal Electoral Institute). It is likely that PRI did this not out of a desire to democratise Mexico, but out of what it perceived as a necessity, to maintain political stability. The successful campaigns of other parties meant that voters were willing to vote

for other parties. Finally, it shows that other parties were not only willing to take on the responsibility of political jobs, but also able to attract candidates to represent them. Keeping the institutions intact was in the interest of all actors, including PRI, even though functioning institutions contributed to the transition.

Since the 1910 Mexican Revolution, violent political action has occurred in only a few parts of Mexico (e.g. Chiapas), and influential civil society movements outside the formal party system have been rare in Mexico. Bizberg (in Vega Cánovas, 2007:47) considers that "[political] *liberalisation never surpassed the electoral dimension*". Through unions and farmers' organisations, PRI controlled a large swathe of the population that otherwise might have become active in civil organisations.

Due to the many factors that have led to parties controlling the political scene, I consider that the most important developments in Mexican political competition have occurred through parties, and therefore our focus in political competition is on relationships between the popularity of different political parties.

2.4 Mexican federalism

The Mexican federation consists of 31 states and one federal district. In political terms, the states are relatively independent from the federation, with their own constitutions, legislative branches, and independent electoral institutes that are responsible for organising state and municipal elections. States are free to decide the organisation of state government, as well as their municipal structure. However, states and municipalities also have responsibilities in providing public services. In this section, I detail the responsibilities of the different levels of government, as well as a few exceptions to the rules.

2.4.1 Responsibilities of local political systems

Mexican states have a high degree of political freedom by what is known in Mexico as the "federal pact" (*pacto federal*). The sovereignty of the states is an important part of Mexican local politics, and despite a considerable degree of fiscal centralisation, the responsibilities of the states particularly in the political arena are not insignificant. States organise their own elections and select their own representatives in local congresses, as well as carrying out a large number of local responsibilities (as summarised in Table 2.2 below). However,

apart from the voting power of state representatives in Congress, states have little power over federal decisions, and do not function as veto players.

The states have varying ways of organising their local congresses and other state powers. The sizes of state congresses vary from 25 representatives (Baja California, Colima, Durango, Querétaro, Quintana Roo, Yucatán) to 75 (México). (Balkin, ed., 2004:193) The sizes of state congresses roughly correspond to the size of the population, and are determined in each state constitution.

Below, I summarise how tasks are divided between the federation, states and municipalities. Table 2.2 lists the branches that commonly participate in the production of each service, based on the federal Constitution. Individual states may have laws determining a different arrangement.

Table 2.2 Responsibilities of the federal, state and municipal authorities

Service	Federal	State	Municipal
Education (ages 5-18)		✓	✓ *)
Education (ages 18–)	✓		
Health	✓	✓	✓ *)
Elections (federal)	✓		
Elections (state)		✓	
Elections (municipal)		✓	
Legislation	✓	✓	
Judicial arbitration	✓	✓	
Taxation	✓	✓	✓ **)
Disputes involving two or more states	✓		
Disputes involving two or more municipalities		✓	
External defence	✓		
Public security	✓ ***)	✓	✓
Public transport (ground)		✓	✓ **)
Urban planning and zoning			✓
Maintenance of public spaces			✓
Wastewater management			✓
Waste management			✓
Tubing and drainage			✓

Source: My elaboration of the Mexican Constitution. ***)** This indicates a service where Article 115 (III:i) of the Constitution leaves the option for municipalities to participate in the tasks as appropriate for each municipality's "*territorial and socioeconomic conditions and their administrative and financial capabilities*". ****)** This indicates a service where a municipality may, but is not required to, convene with state authorities to carry out a particular activity. *****)** In 2009, the president has deployed federal police to ensure public security in selected areas that suffer from widespread and severe violence related to the activities of drug cartels, but this is not the standard practice in peacetime.

The pattern of the division of labour between the federal and state level is fairly typical of other countries with a federal structure. However, the federal Constitution is often not strict on which level of government should carry out each task, but instead leaves the opportunity for those concerned to decide. Therefore, the details of the arrangements vary between states. In addition, states have their own constitutions, which often defer both directly and in spirit to the federal Constitution. However, whilst states are obliged to respect both the federal and state constitutions, on individual issues state constitutions may be stricter than the federal Constitution, and therefore the arrangements for service production vary slightly between states. In addition, as stated above, the federal Constitution itself acknowledges the diversity in local conditions by enabling states and municipalities to organise freely the provision a number of important services, including primary and secondary education and healthcare.

2.4.2 Exceptions to Mexican federalism

Whilst states share many characteristics and methods of governance, there are some exceptions to the common practices. The two most notable are Distrito Federal (the capital) and the indigenous areas. Distrito Federal, as the only federal district, differs quite significantly from the states in terms of political organisation (see Table 2.1). Distrito Federal is not "free and sovereign" (*libre y soberano*), which is an important attribute of the other states. It does not have a state constitution, but a Government Statute (*Estatuto de Gobierno*), which cannot be revised by the local congress, but only by the federal Chamber of Deputies. Local parties cannot run for local congress in Distrito Federal, and the local congress (*asamblea legislativa*) is directly subject to the control of the federal Congress. Finally, the municipal structure of Distrito Federal differs from the rest of the country: its municipalities are called by a different name (*delegaciones*), controlled by delegates *(delegados)*, who are elected by relative majority only, with no proportional representation. Unlike the fairly autonomous mayors in other states, mayors in Distrito Federal (*jefe delegacional*) report directly to the governor.

Distrito Federal is wealthier than most other states on most counts, due not only to a high volume of business activity within the capital, but also a large number of businesses operating in other states that are registered in Distrito Federal for tax purposes and therefore paying local taxes to the capital. Distrito Federal also has access to fewer federal

funds than the 31 states, and is the only state where every municipality is classified by CONAPO as having "very low" incidence of social marginalisation.

The other special case that differs from the mainstream state and municipal organisation are the exceptions made to political structures in some areas with high concentrations of indigenous people, primarily in the states of Chiapas and Oaxaca. The protection of the rights of people with indigenous origin has high priority in the federal Constitution: Article 2 of 136 is dedicated to acknowledging the multicultural structure of Mexico. This means that the Constitution guarantees considerations of the rights of the indigenous peoples to self-determination as per the relevant cultural requirements (but within the applicable legal framework of each state). This is most saliently reflected in the municipalities governed by traditional means (*usos y costumbres*) rather than through political parties.

2.5 State-level differences

To this point, I have focused on the general trends in Mexico, and the most sophisticated examination of local conditions has been at a level of north versus south. In this section, I introduce more nuances by way of state-level data, and map a picture of Mexico that aims to explain some of the differences between states.

2.5.1 Social conditions, human development and inequality

There are large differences between levels of socioeconomic welfare and human development in different states and even municipalities. In this section I provide the general background to the conditions in which the federal, state and municipal political systems operate. I begin with an analysis of the main indicators used in Mexico for measuring poverty and inequality. All data are from 2005 and provided by INEGI (2006) unless otherwise indicated.

Figure 2.10 Gini index, 2000
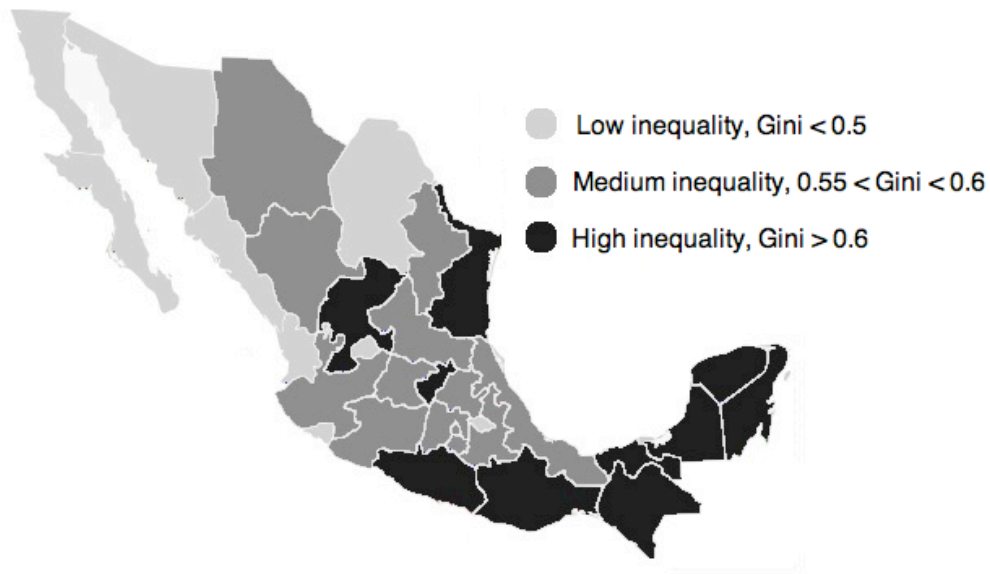
Source: My elaboration from CONAPO (2005)

Figure 2.11 Human Development Index, 2003
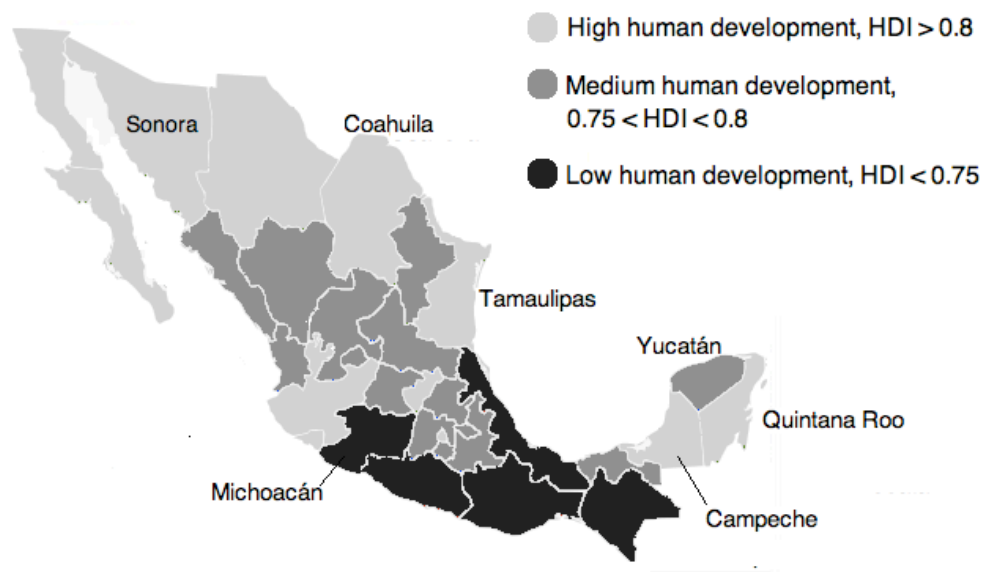
Source: My elaboration from UNDP (2004)

Comparing these two maps, it is clear that the patterns are different. The three generally poorest states (Oaxaca, Chiapas, Guerrero) are both unequal and with low HDI, but there is another group of states where HDI is medium or high but income is unevenly distributed (Campeche, Yucatán, Quintana Roo, Tamaulipas, Michoacán). The last two have in common that they are states with high outward migration, which creates high remittance income for the state, increases GDP per capita through consumption, and therefore increases HDI. On the other hand, Campeche, Yucatán and Quintana Roo form the

Yucatán peninsula and have off-shore oilfields as well as tourism, which are typical industries that generate revenue and increase GDP per capita without necessarily producing a trickle-down effect to benefit the poorest.

The states that are in the most favourable categories are the industrial states of the north. Sonora and Coahuila have the lowest differences in incomes, indicating an ability to distribute income better than Chihuahua, Nuevo León and especially Tamaulipas, which is the only border state with a high Gini index. However, UNDP (2008) makes the caveat regarding analysis of Mexican inequality that only roughly 30% of Mexican inequality is between states, and the rest is observable within states. Thus, analysis of inequality on state level has limited relevance.

Whilst these two measures, Gini and HDI, are globally the most commonly used indicators of poverty and inequality, in Mexico the exclusively Mexican measure of social marginalisation (*marginación social*) is widely used. It is an index created by the National Population Council (CONAPO) and its meaning is summarised as follows (CONAPO, 2006:9):

> *"The index of marginalisation is a summary measure that permits the differentiation of states and municipalities of the country, with respect to the global impact of the shortages suffered by the population as the result of poor access to education, living in inadequate housing, the perception of insufficient economic resources, and shortages that result from living in small communities. The index of marginalisation is a tool contributing to exhaustive diagnostics, identifying socio-spatial inequalities that persist in the country's states and municipalities".*

The situation of social marginalisation in the states in 2005 was as in the following map, with high marginalisation meaning low access to services and high incidence of poor living conditions.

Figure 2.12 Social marginalisation, 2005
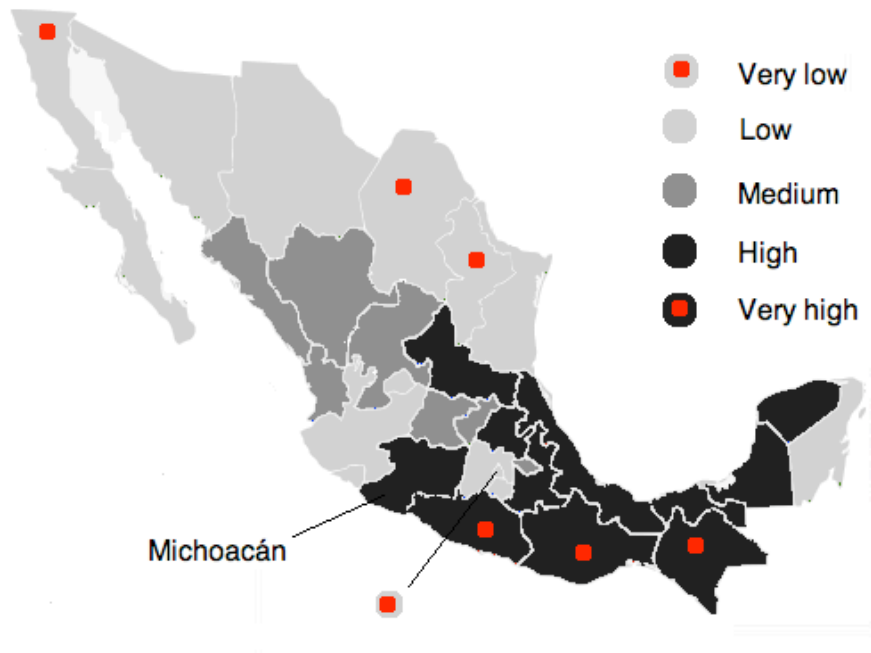
Source: CONAPO, based on II Conteo de Población y Vivienda 2005 and Encuesta Nacional de Ocupación y Empleo 2005 (IV Trimestre).

The social marginalisation map is similar to the HDI map, with few exceptions. Campeche has high social marginalisation, but also high HDI. Nuevo León has medium HDI, but very low marginalisation and medium inequality. Generally, the social marginalisation measures roughly match the HDI statistics. The main issues considered in the social marginalisation measure that are not considered by the HDI are various aspects of housing and the effect of small communities.

High migration often leads to high remittance flows from the United States, which usually helps elevate the standard of living for those at home. However, migration can also stall economic development at home. States with high outward migration, such as Michoacán, Guanajuato and Zacatecas, often generate patterns of cross-generational migration to large Mexican cities or to the United States: some families or communities develop a culture of migration, and migration becomes a rite of passage. This not only distorts the economic possibilities of the communities, but also reduces the returns to education, as migration usually involves low-skilled work.

Remittance money does not generally compensate for the opportunity cost of lost local commerce, employment and education. Remittance money is most often spent on short-term consumption, and may therefore help elevate GDP per capita and life expectancy,

which influence HDI. However, remittances are rarely spent on productive or long-term projects. This may explain why Michoacán, despite its high remittance figures (since the 1990s, consistently over 10% of state GDP), is a state of high social marginalisation (see Figure 2.12). Rather than being spent on improving housing, education or other long-term issues, 78% of remittances to Mexico are spent on rent, food, medicines and utilities (FOMIN, 2009).

I make a final note in the socio-political conditions of Mexico regarding education. In a Latin American context, Mexico's school enrolment rates are quite high. All states report enrolment rates of over 92% in primary school and over 70% in secondary school (INEGI). Living in urban areas is more likely to lead to higher educational levels. Differences between boys' and girls' education appear in secondary school, and a cultural division emerges: northern states have higher enrolment for girls, whereas southern, poor states have higher enrolment for boys. This is likely to reflect the traditional gender attitudes in poor, rural areas, which can have an impact on the economic potential of the areas.

As a final consideration in the series of factors affecting differences between states, I will consider briefly the economic conditions and activity in each state.

2.5.2 Economic trends in the states

In this section I outline the business, commercial and industrial activity in the states, with focus on the aspects that are likely to influence the environment in which the political system and public finance distribution operate. Public finance itself will be considered in a later section.

In Mexican state data, the differences between states in economic variables are larger than almost in any other domain. The large ranges of the numbers presented in this section make it impractical to use coloured maps, as the number of categories required here would be large. Therefore, I use bar charts instead of maps to present the differences. For the reader wishing to compare these to the maps in the other sections, a map with the state names is included at the end of the chapter.

The three main aspects that I cover here are presence of economic activity, exposure to globalisation, and the business environment and presence of informality. I begin with the general distribution of economic activity within Mexico, with state GDP.

Figure 2.13 GDP per capita, by state, USD, 2006
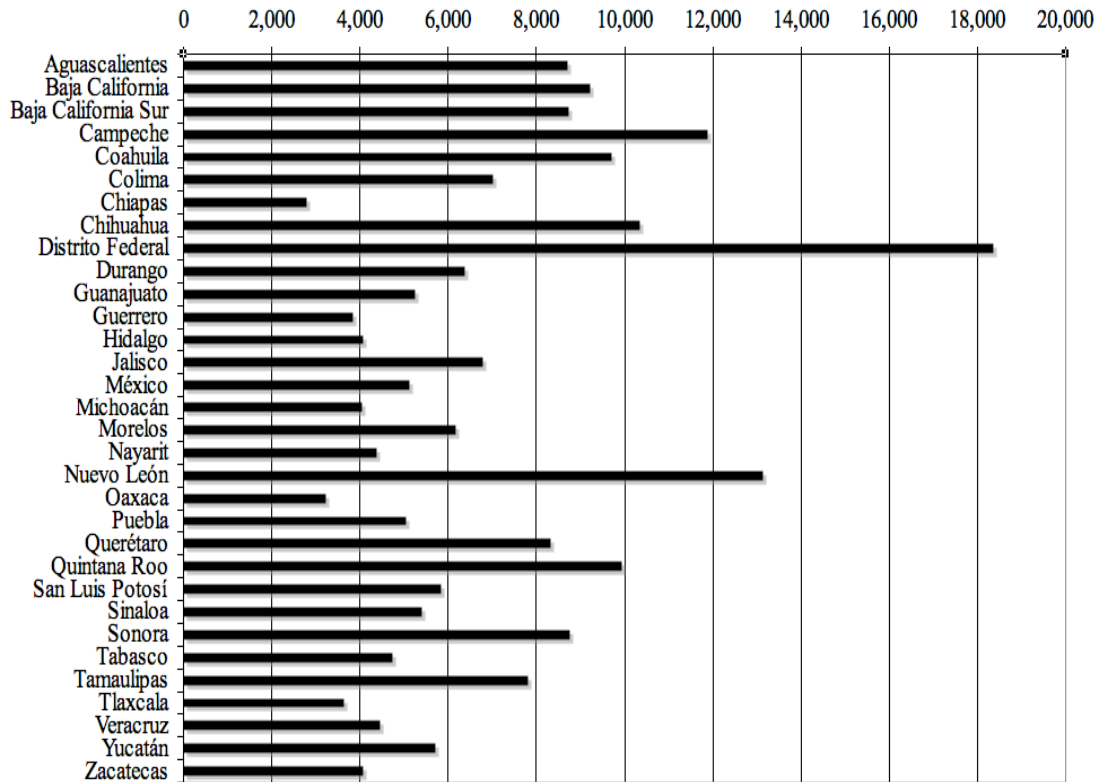
Source: My elaboration from INEGI, calculated with exchange rate of 1 USD = 11 MXN

Geographically, GDP per capita is as follows:

Figure 2.14 GDP per capita, 2006
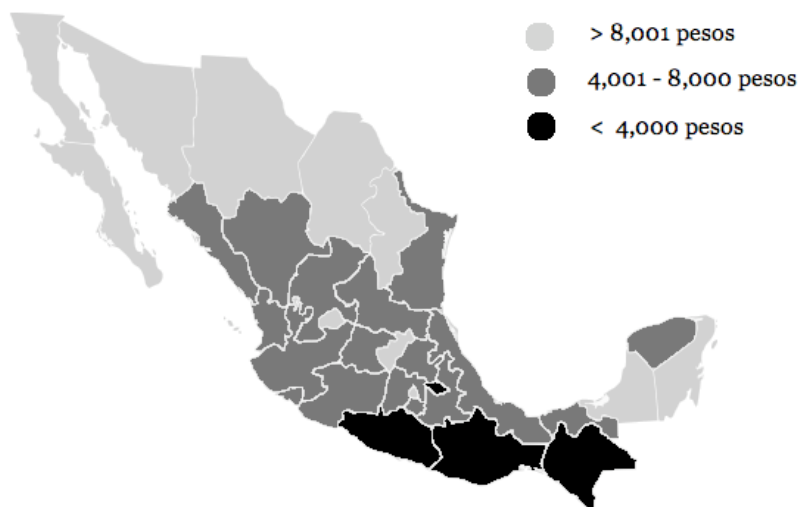
Source: INEGI

It is clear from the above graph that GDP levels within Mexico vary widely, and that in GDP terms, the north-south divide stands. On the World Bank classification of country incomes, Campeche, Distrito Federal and Nuevo León would be considered to be equivalent to high-income countries (GDP per capita over 11,456 dollars). No state in Mexico falls in the low-income category of $935 or less, and the poorest Chiapas and Oaxaca just fall within lower middle income of under $3705. The others straddle the entire range of $3706 to $11455 that encompasses the higher middle-income countries.

All Mexican states earn the majority of their GDP from services, although manufacturing is also a major source of GDP for many states:

Table 2.3 Sectors as percentages of state GDP, descriptive statistics of 32 states

	Manufacturing	Agriculture, forestry, and fisheries	Services (Communal, social, and personal)	Services (Commerce, hospitality)	Services (Financial, insurance, real estate)
Minimum	2.5% (Q. Roo)	0.1% (DF)	16.8% (Chih.)	12.1% (Hid.)	5.6% (Cam.)
Maximum	30.3% (Ags.)	13.1% (Dgo.)	39.0% (DF)	46.8% (Q.Roo)	25.6% (BCS)
Mean	16.2%	5.5%	24.2%	20.4%	12.7%

The key observations to be made about sectorial GDP data concern the different types of states there are in Mexico, and how different types of states earn their state GDP. A number of low-income states earn a large proportion of their GDP from the Communal, Social and Personal services category (e.g. defence, education, health), which, whilst important, does not generate immediate economic development, does not have the potential to expand a great deal, and has little export potential. This is the case of Chiapas, Oaxaca, Guerrero, Tabasco and many others.

A second group of states gain a large proportion of GDP from manufacturing, e.g. Aguascalientes, Guanajuato, México and Querétaro. These states can potentially experience fast economic growth, given favourable economic circumstances, but also suffer acutely from international financial crises. The third group, similarly, has a large proportion of GDP from commerce and the hospitality industry, which also has short- and medium-term growth potential. In this group are Quintana Roo and Jalisco, and also the border states of Chihuahua, Coahuila, Sonora and Tamaulipas. However, this group is especially at risk from the recent increase in drug-related violence at the border, as tourists can quickly change their preferences in reaction to the drop in perceived security.

It is worth pointing out that even though agricultural and other primary sector activity is a low contributor to state GDPs, most of Mexican agriculture is subsistence farming or for personal or local use (*autoconsumo*) and of very low productivity. Gabriel Morales (2003:34) states that the agriculture in Chiapas, Oaxaca, Guerrero, Hidalgo, San Luis Potosí and Chihuahua is nearly completely subsistence farming (which implies low potential for expansion). OECD (2007:45) characterises Mexican subsistence farming as "*isolated, far away from markets and basic services*", and "*of low productivity*". Also, it is possible that subsistence production is underreported. Therefore, one must not interpret the lack of agriculture in the GDP statistics as a sign of a fully industrialised state economy where agriculture is absent.

Fuentes Flores and Mendoza Cota (2003) show that convergence in GDP growth between Mexican states took place in 1980-1985 and divergence took place in 1985-1998. They attribute this to a reduction in public investment as a result of the 1982 financial crisis, and the emergence of private infrastructure funding, which helped growth in the richest states. Analysis on newer data corroborates these conclusions:

Figure 2.15 Divergence in 1998–2006
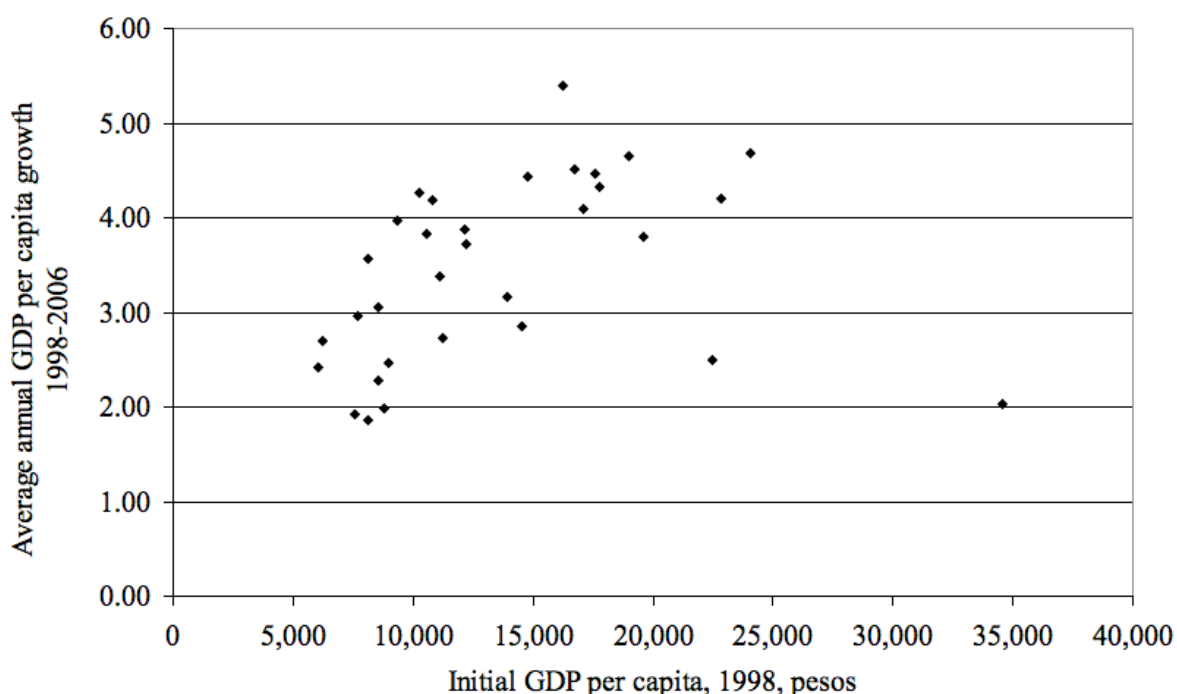
Source: Elaborated from Centro de Estudios de las Finanzas Públicas de la H. Cámara de Diputados, with INEGI data, Sistema de Cuentas Nacionales, Producto Interno Bruto por Entidad Federativa; Conteo de Población y Vivienda 1995 and Censo General de Población y Vivienda 2000 and 2005, and INEGI, Sistema de Cuentas Nacionales de 2006.

It is clear that richer states grew faster in this period also, and that the divergent tendency found by various authors for earlier decades is still valid. This should be considered in the context of extensive poverty-reduction and social programmes being in place since 1988, and with a reform in 1998, Ramo 33, which was intended specifically to take into account the real poverty and deprivation in the states, rather than being a political tool. Ramo 33 is discussed in more detail in the final section of this chapter. However, from this economic growth data it is evident that convergence is certainly not occurring, and poor states are lagging.

Running the same graph for each year between 1994 and 2005, all years except 1994 and 1995 clearly show the same trend as Figure 2.15. The 1994 graph is inconclusive, but 1995, the year of the Tequila crisis, shows a negative slope, signifying convergence:

Figure 2.16 Convergence in 1995
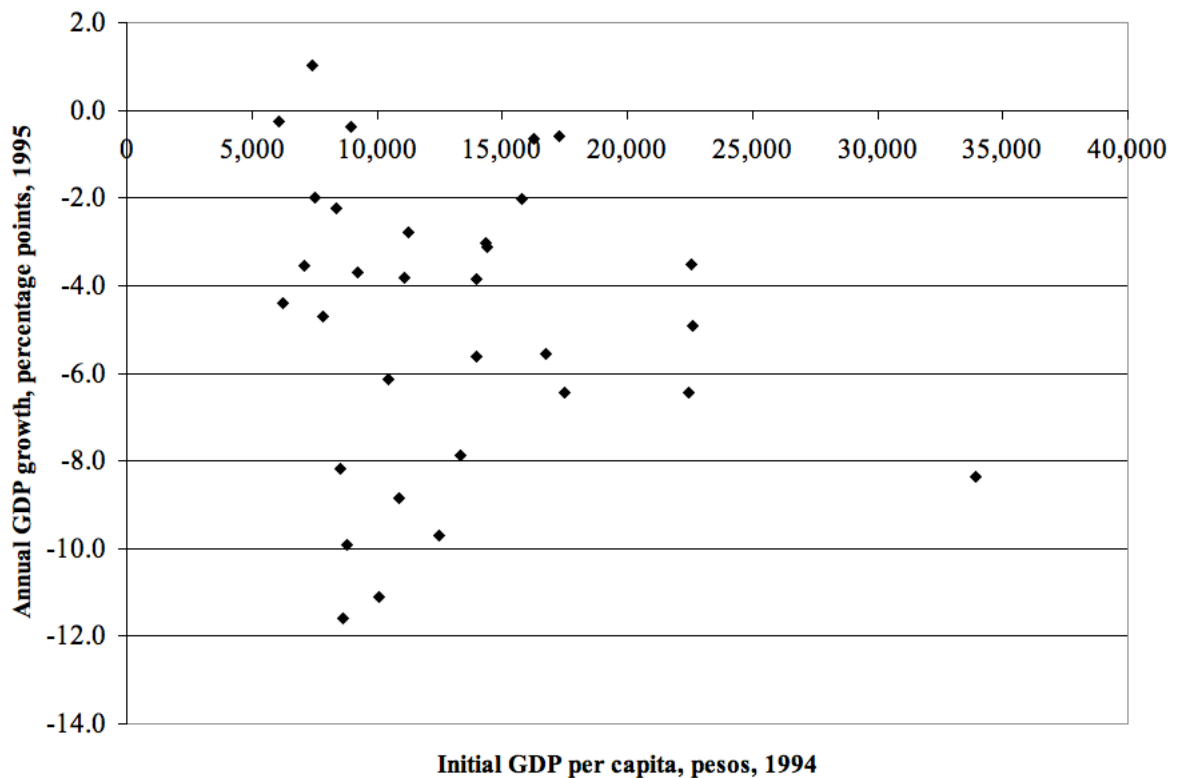
Source: As in Fig. 2.15.

However, if this is convergence, then it is convergence for all the wrong reasons. The wealthiest and middle-income states suffered the most from the 1995 crisis, due to their extensive links to the global economy during devaluation, as well as from widespread unemployment and lack of economic activity within Mexico. The middle-income states on the left are mostly mining states, dependent on export markets and therefore vulnerable to

currency changes. On the other hand, the very poor, agricultural states, as is common around the world, were not hit as hard by the macroeconomic shock, suffering GDP contraction of up to 4% when the national growth rate was –6.2%. In addition, by 1996, the trend is back to the pre-recession positive slope, meaning that as the economy made its fast recovery, Mexico returned to its normal rhythm of subnational divergence. This shows not only how persistent divergence is in Mexico, but also the importance of the richer states to the entire economy.

GDP figures naturally show a summary of economic activity, and show only degrees of welfare, whether its source is industry, petroleum, tourism or any other activity. In the next diagram, I isolate the effect of export industries, the presence of which is a good indicator of general wealth in Mexican states. The index measures the extent to which the state's economy is dedicated to exports, as compared to the national average (100). The main difference to GDP figures is that the export specialisation index distinguishes between states that host export-oriented large-scale industrial activity, and states whose high GDP is mainly due to tourism, natural resources or other non-export-oriented reasons.

Figure 2.17 Index of specialisation in the export sector, 2000, national base = 100
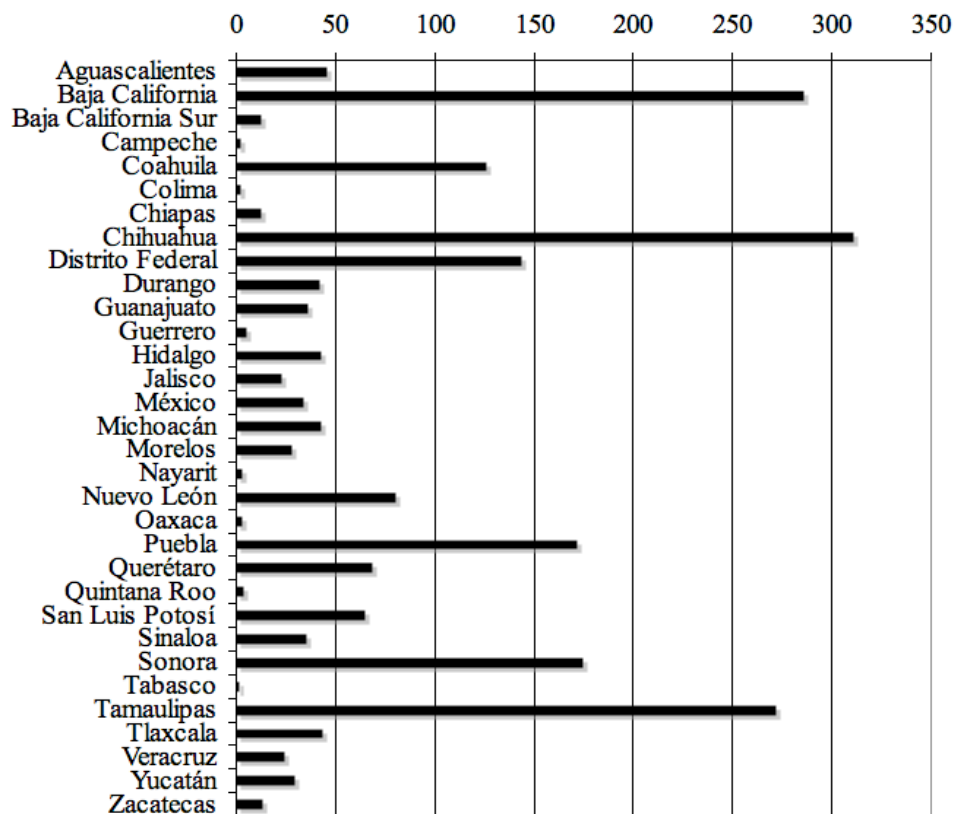
Source: my elaboration from Salazar Cantú and Varella Mollick (2004:28)

And the same data as a map-based representation:

Figure 2.18 Index of specialisation (S) in the export sector, 2000, national base =100

Above average specialisation in export sector (S > 100)

Below average specialisation in export sector (25 < S < 100)

Extremely low specialisation in export sector (S < 25)
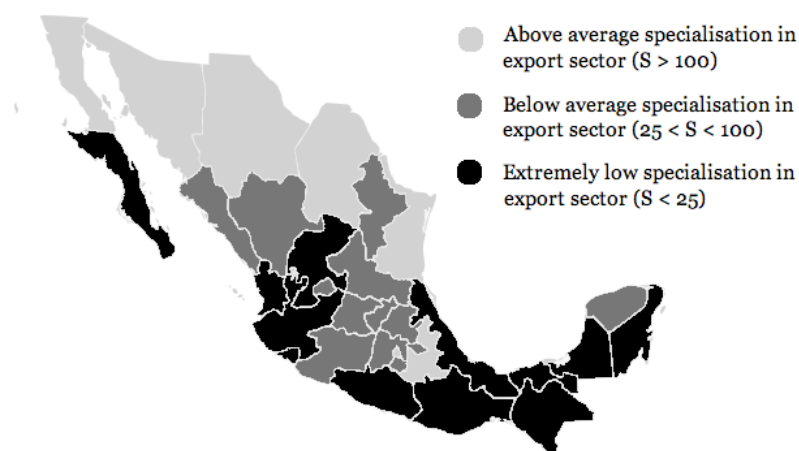
Source: my elaboration from Salazar Cantú and Varella Mollick (2004:28)

Based on Figures 2.17 and 2.18, the border states are the ones with the most export-driven economies. Together with Puebla, a poor southern state that hosts a number of large automobile assembly plants, and Distrito Federal, these states are the key to Mexican exports. The states that have high GDP but low export presence are Baja California Sur (tourism in Los Cabos), Campeche (petroleum), Quintana Roo (tourism in the Cancún/Cozumel area), and Nayarit, Jalisco and Colima (all on the Pacific coast and popular for Mexican domestic tourism).

Generally, states that have linkages to the world economy generally also have better living conditions on average. This is due to the greater availability of employment, especially low-skilled jobs, as well as the trickle-down effect on consumption in the surrounding area. In Mexico, links to the global economy became stronger with the introduction of NAFTA in 1994, but foreign investors have strongly preferred the northern states for setting up industrial plants, with some exceptions like Puebla. This was in part due to political unrest in parts of the south in 1994-1995, especially in Chiapas, but also due to the geographic, ethnic and social reasons outlined previously. Foreign direct investment is not restricted to industrial activity, but also covers other popular types of installations, such as housing developments (especially in tourist areas). The pattern for foreign direct investment (FDI) is therefore similar to GDP figures:

Figure 2.19 FDI/GDP, by state, 2006
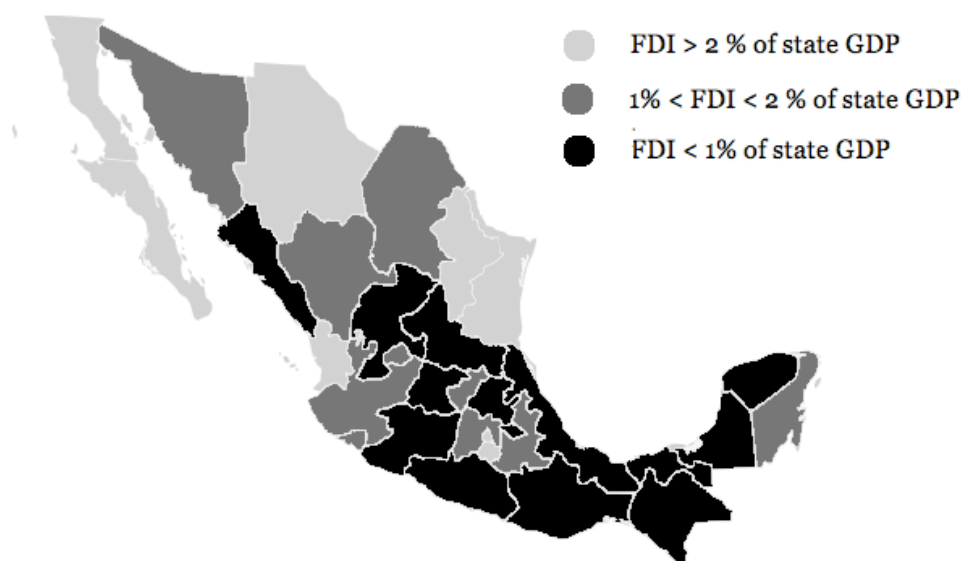
Source: My elaboration based on Secretaría de Economía, Dirección General de Inversión Extranjera, Informe estadístico trimestral; Sistema de Cuentas Nacionales de México, INEGI; IMF International Financial Statistics

Most of the states that receive high levels of FDI appear to turn that investment into exports. This is likely to be mostly *maquila* and other similar industrial activity. However, three states appear to have achieved relatively high export presence with negligible FDI: Guanajuato, Hidalgo and San Luis Potosí. All of these states have lucrative mining industries, and produce large quantities of silver, copper, zinc and other minerals for export. This explains their presence in exports without high levels of FDI. However, mining is a diminishing industry in Mexico, and are not the main source of income for any state as a whole; at best, mines and other extractive activity function as major employers in some municipalities.

It is noteworthy that in all of these measures, the same states consistently perform poorly: Oaxaca, Chiapas and Guerrero, as well as Tabasco and Veracruz, have the lowest levels of both human development and any kind of industrial activity. In this thesis, I argue that one of the reasons for persistent poverty is the institutional environment, and I include one final consideration to illustrate this. This is the tax collection rate, which gives a rough estimation of the ability of the state government to enforce its policies, as well as of the extent to which informality abounds in each state.

Figure 2.20 Taxes collected by the state as percentage of state GDP, 2006
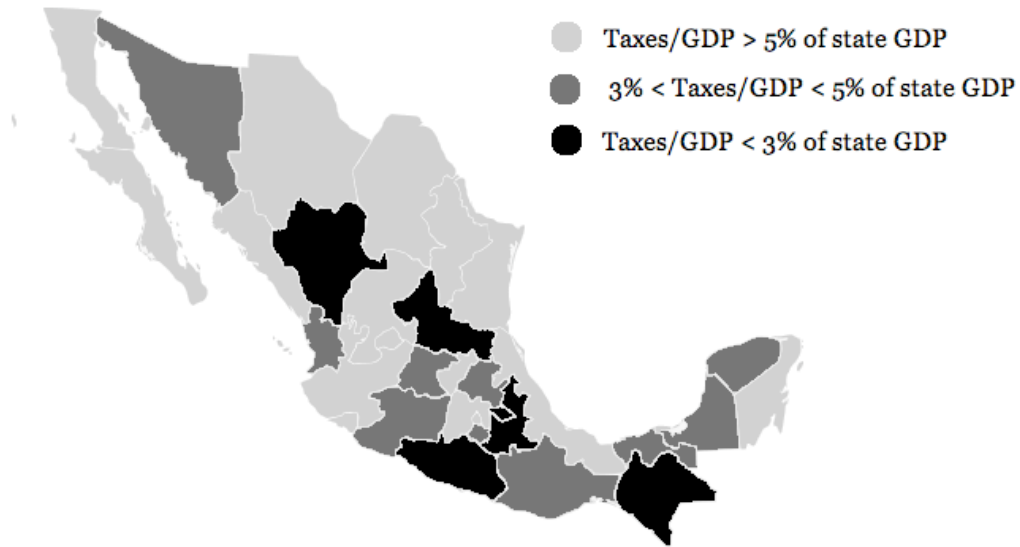
Source: My elaboration from CEFP , 2008, cited 25 July, 2008; Sistema de Cuentas Nacionales de México, INEGI.

Of the economic indicators shown so far, this is the first one that presents a slightly different picture. It is not a direct north-south divide, as taxation is also a function of the institutional environment and not only of economic activity. High taxation rates on this chart also roughly correspond to low values on the Corruption and Good Governance index, which suggests that both indices are likely to give a fair measure of the extent of informality in the state. Most authors (e.g. Hernández Trillo *et al*, no year) estimate that roughly 10% of the Mexican economy, in monetary terms, functions in the informal sector. Compared to other OECD countries, Mexican total tax revenues are low as percentages of GDP, primarily as a result of low collection rates, rather than low formal tax rates. This indicates that local tax revenue is a reasonable indicator for institutional quality.

2.5.3 Electoral trends in the states

Social inequality and economic trends ultimately contribute to electoral outcomes. In this thesis, I study how electoral outcomes influence public finance, and how public finance can influence local socio-economic factors. Therefore, in this penultimate section, I give an electoral context to the socio-economic maps and show the differences between states and the different environments in which the political parties, campaigners, election organisers, and other political actors work.

Federal elections in Mexico tend to give similar results in both Senate and Deputy elections. In the 2006 elections, a state was overwhelmingly likely to give the largest vote share to the same party in both chambers. The largest parties in the states in the 2006 Deputies elections are as presented in the following map. I use raw vote share when possible, rather than seats, because seat numbers are in part determined by electoral rules, and may not correspond to vote shares.

The question of whether to use vote shares or seats has been solved here thus: when raw vote share is not available, as in the case of the state congress or mayors, numbers of seats are used. Otherwise, raw vote share is a better indicator of the political preferences of the electorate. In presidential elections, raw vote share is the only available measure because there is only one seat to be won. In Chamber of Deputies elections vote share is more reliable, because the complex mixed winner selection system does not permit direct calculation of vote shares from the final selection of winners (due to deputies being elected partly through relative majority, partly through first minority and partly through proportional representation).

Figure 2.21 Largest party by vote share in Chamber of Deputies elections, 2006

Source: My elaboration from IFE online electoral results database

On the federal level, right-centre PAN appears to dominate, particularly in the wealthier states of the north. In the poorer south and around the capital, left-wing PRD is the leading party in many areas. PRI has emerged as the winner in federal elections in few regions in recent years, and in the 2006 presidential election, the PRI candidate, Roberto Madrazo,

did not win in any state, with the north overwhelmingly voting for PAN candidate, current president Felipe Calderón, and the south for runner-up Andrés Manuel López Obrador.

In local politics, PRI still holds greater power, as I discovered also in the context of national electoral trends. PRI governors abound in states with all types of socioeconomic conditions, from the wealthy, industrial north to the poor, largely indigenous Oaxaca and Puebla:

Figure 2.22 Party affiliation of state governor, 2008
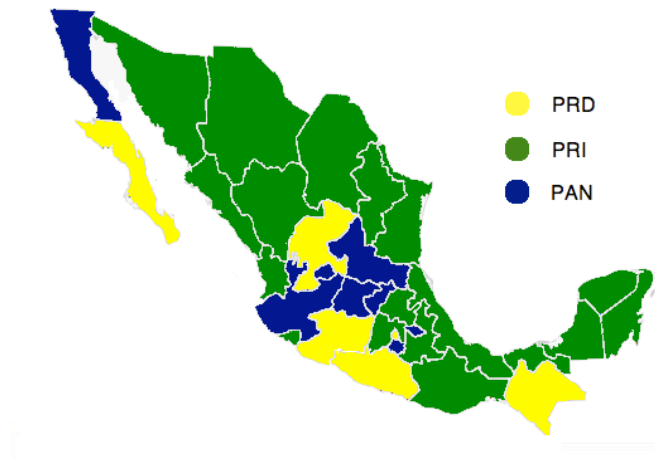
Source: My elaboration from http://rulers.org/mexstat.html, cited March 2008

The state congress map is almost identical to the governor map, with some exceptions in situations where two parties' vote shares tend to be very close. There is no requirement that a state congress majority must be from the governor's party, but in practice this often happens: in 2007, in 30 of 32 states. There are many reasons for why this might occur. One common factor is campaign endorsement by the incumbent governor for his party, which is generally permitted by state laws. Another is grass-root networking by the incumbent party, which may or may not have clientelistic characteristics.

Figure 2.23 Largest party in state congress, 2007
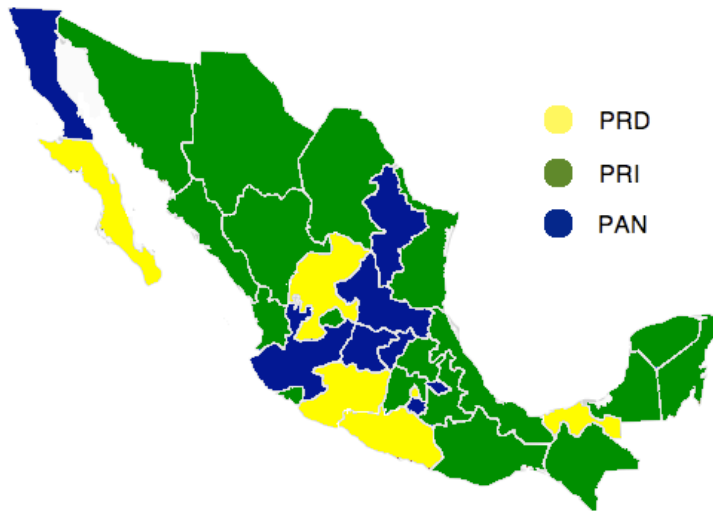
Source: My elaboration, from various state electoral institutes, collected by Rachel Flores Romero from the Autonomous University of Tlaxcala. Note: in 19 states, the party in question won the 2006 election with an election alliance with one or more smaller parties.

It is clear that most states tend to follow the same party in all levels of elections. The north is an exception: it consistently favours PAN in federal elections, but PRI in local elections, which can be the result of various factors: the Revolution-era split of the north between various groups, socioeconomic conditions, or differences in economic activity between different areas.

In Section 2.5.1 of this chapter, I found that nationally, PRI had held its leading position better at the local than federal level. I hypothesised that this may be due to PRI's more efficient efforts on the ground, or to the influence of electoral reforms in limiting the maximum number of seats one party may have in each body, and therefore awarding seats relatively more easily to runners-up than to the winner.

Therefore, something has happened that improved PAN's access to raw votes in federal elections. This could be increased access of opposition parties to advertising in federal campaigns, which was stipulated in the electoral reforms. Alternatively, the reforms improved transparency, which discouraged vote buying or intimidation of opposition voters by the PRI machine. This highlights the relevance of the electoral reforms not only in the seat allocations, but also in the electoral environment and the voting experience.

It appears from the comparison of these maps that the northern states are primarily responsible for the national difference between federal and local election results. It is an

interesting trend that PAN appears to be making inroads into federal politics in the north in traditionally PRI-controlled areas, but is consistently unable to win governorships or state congress majorities in the same areas.

The central and southern states tend to prefer the same party across the board in different elections. If we measure each state's leading party in federal deputies (by vote share), governor, state congress (by number of seats) and mayors (by number of municipalities), I find that in 11 states, the same party was leading in all of these in 2007, denoting a very strong presence in the political system of these states by one party. In five of these states that party was PAN, in four PRI, and in two, PRD.

In the north, it appears that there are forces at work that help PRI at a local level. Around the country, many a state is controlled (and represented in Congress) by a party that may be a *de facto* hegemonic party in that state. This shows that despite improvements in the political system, both PRI and the concept of hegemony are well and alive in Mexican politics. However, PRI hegemony has been much reduced from its extensive reach in the 1980s, and no party can be nationally considered a leading party today.

This brings us to the final consideration in this section: electoral competition. Competition is perhaps the single most important factor in determining the political environment in a state, and manipulating electoral competition has been at the root of many clientelistic practices in the past. For example, in the late 1980s and early 1990s, PRI approved the selection of opposition governors in Baja California, Chihuahua and Guanajuato, allegedly in return for other political favours (Bruhn, 1996). Similarly, municipalities where other parties threatened PRI's position were more likely to receive financial incentives from PRI-administered government resource-transfer programmes (Díaz-Cayeros et al, 2007).

In federal deputy elections in 2006, the states where PRI attracted the largest vote share, it was usually by a small margin (on average the margin was 0.96 percentage points between PRI and the runner-up). On the other hand, states won by PAN and PRD were won by an average margin of 11 percentage points. It is clear that the states where PRI won in 2006 were on average more contested than the others. PAN's large margins are explainable by its target audience differing from those of PRI and PRD, since PAN is currently the only large socially conservative party. While one might expect PRD and PRI to compete heavily for voters with pro-poor, centre-left agendas, PRD is also able to win by large margins. It is

also possible that PRI was suffering from a legacy of anti-hegemonic sentiment in 2006, which likely made some voters prefer the alternatives.

However, in light of the 2009 results, the anti-hegemonic sentiment lasted less than a decade: 2009 marked a PRI comeback of sorts. In the 2009 Chamber of Deputies elections, PRI won its states by an average 15.5 percentage-point margin, whereas PAN's wins were with only 6.7 percentage points and PRD's with 8.3. This emphasises that PRI is not a party of the past, and did not self-destruct after the end of the hegemony.

Between the large swing of 2006 to 2009, it is difficult to say which outcome – if either – represents the "true" political sentiment. It is most likely that voters are still oscillating between the options given: multiparty democracy versus the political stability of hegemony, and "the devil you know" of PRI versus "the devil you don't" of PAN and PRD. In Chapter 3, I return to the difficulty of mapping political preferences in an environment where ideological demarcations are fuzzy and forgotten even by politicians when convenient.

Whether there was a PRI comeback or not, it is important to distinguish between the extent of PRI hegemony in the past and the apparent one-party control in some states today. PRI vote shares in the 1991 federal deputy elections were between 43% and 75% in every state, and a large number of small and medium-sized municipalities gave PRI over 80% of their votes. IFE statistics show that in 1991, exactly 100% of voters in some municipalities gave their vote to PRI, possibly because there was no other party on the ballot, or by vote-buying mechanisms, social or union pressure, or other arrangements that abounded in the hegemonic era.

Díaz-Cayeros et al (2007) classify a municipality as having a hegemonic party if it *consistently gives a 65% vote share* to the same party. There are few of these left. I list below every electoral district (data is no longer publicly available by municipality) that matches this definition in the past six Chamber of Deputies elections, and summarise the 1991 election for comparison:

- 2009: Saltillo (Coahuila), 73% to PRI
- 2006: Iztapalapa (DF), 67% to PRD; León (Guanajuato), 68% to PAN
- 2003: Gómez Palacio (Durango), 69% to PRI; Ciudad Serdán (Puebla), 66% to PRI
- 2000: El Fuerte (Sinaloa), 65% to PRI; León (Guanajuato), 68% to PAN
- 1997: Acatlán de Osorio (Puebla), 67% to PRI; Ticul (Yucatán), 67% to PRI
- 1994: El Fuerte (Sinaloa), 68% to PRI; León (Guanajuato), 68% to PAN
- 1991: 103 districts in 28 states, over 65% to PRI.

Since the 1994 reforms, there have been hardly any districts that can Díaz-Cayeros *et al* (2007) would classify as hegemonic. The only potential candidate is León, Guanajuato, a city that has given roughly 68% of votes to PAN in every second election, but even there the vote share is not consistent. Therefore, hegemony is no longer present to the extent it still was in the 1980s and early 1990s. This change is due partly to electoral reform and therefore a general presence of other parties in the electoral arena, and partly to the general improvement in political transparency and the diminished ability of PRI to win elections by buying votes.

2.6 Public finance

In this final section, I outline the public finance mechanisms that will form the focus of this study. I argue that public finance is one of the main channels through which the political system influences the economic well-being of states and municipalities. The main focus is on the distribution of federal funding in transferrals from the federation to states and from states to municipalities, and especially on those programmes that attempt to reduce poverty and equalise conditions between states.

The so-called Solidarity programmes started in the 1980s for a reason already much covered in this chapter: placating unrest. However, they have continued from then, with exceptional success among Mexican government programmes. Here, I summarise the Solidarity programmes, and then outline the new approach that was taken from 1998 onwards and which forms the main argument of this thesis.

2.6.1 Pre-1998 solidarity programmes

The emergence of "solidarity" programmes in Mexico began with direct cash transfers to families in the 1980s, given by the PRI federal government. The first set of programmes of the Solidarity wave was Pronasol, which was a programme introduced in the Salinas presidency in the late 1980s. It is widely argued to have been politically motivated: Díaz-Cayeros *et al* (2007) argue that the main motivation for the programme was to help PRI recover from its split into two, PRI and PRD, and to reassert the power of PRI as the controlling party. Through cash subsidies to families, voters were encouraged to remember the generosity of the PRI government in the polling booth. Langston (2001) considers that the key motivation for Pronasol was to offset some of the losses suffered by the poorest people as a result of Salinas' neoliberal reforms.

The commonly marketed mission of Pronasol, to help the poor, is also rejected by Díaz-Cayeros *et al* (2007), based on the selection of municipalities that the programme helped: small, middle-income municipalities, chosen within a complex framework of electoral strategies, rather than the poorest municipalities. The results of Díaz-Cayeros *et al's* (2007) analysis show that private goods were more likely to be given where electoral competition was high, whereas public goods were bestowed on communities less discriminately. This suggests a two-pronged approach: cash transfers where votes were needed, and public goods to veil the programme as a poverty-reduction approach. Fox (1994) also notes the progressively greater inclusion of local organisations and actors, and cites a desire from the designers of the programme to reduce bureaucracy and devolve the programme to the local level.

The devolution of poverty-reduction programmes to the local level continued in the 1990s, when a new set of formula-driven programmes was introduced. However, at the same time, discretion in the use of the funds was reduced. The new programme was introduced in two parts: Progresa and FDSM (Fund for Municipal Social Development). Progresa aid was mainly dependent on practical requirements, such as households sending children to school and participating in other activities deemed essential for improving social infrastructure, and was renamed Oportunidades in 2000. Díaz-Cayeros *et al* (2007) point out that Progresa/Oportunidades was a rare social programme to survive through two presidential terms, under two different parties, but Rocha Menocal (2001) argues that Progresa was still not an apolitical programme.

FDSM, on the other hand, and later FISM (Fund for Municipal Social Infrastructure) gave financial support directly to municipalities based on their levels of social marginalisation and poverty. These programmes were the predecessors for Ramo 33, the formula-based public finance mechanism I analyse in this study.

2.6.2 Ramo 33: A formalisation of public finance

The key difference between Ramo 33 and the previous programmes (Pronasol, Progresa, Oportunidades) was that Ramo 33 put the state and municipal governments in charge of distributing funding to families. In the earlier programmes, the federal government gave direct cash transfers to households, whereas Ramo 33 directs federal funding through various levels of local government. Thus the key difference is that the federal government is not directly involved in deciding the recipient households. This reduces the strength of the link between a voter's preferences in federal elections and funding received by the voter's household.

In 1998, the soon-to-be-outgoing Zedillo government reformulated the federal revenue-sharing system, and the same system is still functional, with some adjustments. Currently, Ramo 33 is the primary mechanism by which federal funds are transferred to states and municipalities. It was created in 1998, and accompanied by a constitutional amendment in 1999 that turned municipalities from administrative units to a third level of government after the federation and state levels (Sánchez Flores in Noriega, ed., 2005). This reform in governance required matching budgetary reforms, to enable municipalities to finance the political reforms.

Ramo 33 is the general term used for the programme that implemented the current form of federal finance to states and municipalities, including *participaciones* and *aportaciones*. Its main contribution, in addition to establishing the municipality as a practical level of governance, was the establishment of funds earmarked for socioeconomic development. For the first time, this was done with strict formulae for the distribution of funds to both states and municipalities, as well as for the end use of the funds.

The Law for Fiscal Coordination (LCF) gives some leeway to states regarding the distribution formulas. Special accommodations are made for situations where municipal

data is not available for all the required poverty indicators, which is not an uncommon occurrence in Mexico. The LCF permits the use of simpler indicators, with equal weights, to determine municipal need for federal aid. Díaz-Cayeros *et al* (2007) argue that these options are strategically used by states, employing the formula most advantageous to the state budget, and the alternative formula is used by roughly two thirds of the states. However, whatever formula is used, the discretionality accorded by Ramo 33 is far below that of Pronasol, Progresa or even FDSM, and Ramo 33 displays a far higher degree of needs-based distribution for poverty reduction. Therefore, Ramo 33 is likely to provide a more controlled, transparent and predictable environment for public finance.

Ramo 33 is mainly made up of two types of funding: *participaciones federales* and *aportaciones federales*. *Participaciones* are the federal funds that give states discretion on spending, and *aportaciones* are funds that must be spent on particular ends: social infrastructure and poverty alleviation.

2.6.3 *Participaciones*

Participaciones are one of the focal points of this thesis. It is a federal fund that comprises of most federal taxes (*recaudación federal participable*), but with some exceptions. *Participaciones* funding is distributed directly to states. States can spend 80% of this funding as they wish, and a minimum of 20% of all funding given to states under *Participaciones* legislation (LCF Chapter 1) must be forwarded to municipalities.

The *participaciones* funds are as follows:

- General *Participaciones* Fund (*Fondo General de Participaciones*). 20% of federal taxation becomes part of this fund. It is distributed to states on the basis of a state's GDP growth relative to the whole nation and tax collection improvement by the state relative to the nation, i.e. a reward for good performance.
- Fund for Municipal Promotion (*Fondo de Fomento Municipal*). One per cent (1%) of federal taxation forms this fund. It is distributed by the state to municipalities based on the improvements in tax collection in the state, with financial incentives for states to collaborate.
- Fiscalization Fund (*Fondo de Fiscalización*) is comprised of 1.25% of federal taxation. It is distributed to states based on their ability to collect taxes, seize (illegal)

merchandise, and carry out fiscal inspections and record debts owed to the federation.

Municipalities with special responsibilities (border control, ports and customs) are given small amounts of additional support. Overall, the *participaciones* funds are intended to incentivise states towards economic growth and good governance.

States are free to distribute *participaciones* funds as they wish to municipalities, as long as the amount distributed is at least 20% of the state's *participaciones* income. Edmonds Elías (1997, written prior to Ramo 33) states that where there are no laws to determine the distribution formulas from the state onward, the process is strongly subject to political preferences, and that is still likely to be the case. Some states distribute to municipalities by population, others by tradition (e.g. that the state capital must get a particular percentage). Many states do not have a fixed formula, and the distribution is often not made public (Edmonds, 1997). This enables politically motivated distribution of *participaciones* funds.

LCF (Chapter I, Article 3) obliges the federation to disclose annually the distribution of *participaciones* funds to states, complete with schedules, formulae, variables and amounts, in the *Diario Oficial de la Federación*. However, there is no such requirement for states to disclose how they have distributed the funds, which makes *participaciones* spending very difficult to track.

2.6.4 *Aportaciones*

Of the two types of federal funds, *aportaciones* are by far the more regulated due to their function as equalisers of social inequality. They are to be spent *"exclusively for works, basic social actions, and investments that benefit directly those sectors of the population that find themselves suffering from social lag and extreme poverty"*. (LCF, Chapter V, Article 33).

Aportaciones are comprised of seven funds, whose names and relative importance is as follows:

- FAEBN (*Aportaciones* Fund for Basic and Normal Education), 65.2% of aportaciones in 2003, mainly for teaching staff

- FASSA (*Aportaciones* Fund for Health Services), 12.2%, health personnel and infrastructure
- FORTAMUNDF (*Aportaciones* Fund for the Strengthening of Municipalities and Territorial Divisions of the Federal District), 8.9%, financial strengthening of municipalities
- FAIS (*Aportaciones* Fund for Social Infrastructure), 8.7%, social infrastructure
- FAM (Fund of Multiple *Aportaciones*) 2.8%, education infrastructure, food programmes and community social assistance
- FAETA (*Aportaciones* Fund for Adult and Technological Education) 1.2%
- FASP (*Aportaciones* Fund for Public Security in the States and the Federal District) 1.0%, personnel and infrastructure.

All these funds distribute funds to states, but only two distribute resources also directly to municipalities (FORTAMUNDF and FAIS). FAIS is therefore divided in two: FAISE for states and FAISM for municipalities. The Chamber of Deputies is responsible for determining the annual total amounts of both FAISM and FORTAMUNDF spending.

FORTAMUNDF resources are distributed both from the federal executive (through the federal Treasury, SHCF) to states, and from states to municipalities, based directly on the population of each state and municipality.

FAISE resources are distributed from the federal executive, through the Ministry of Social Development (Sedesol), to states, based on the incidence of extreme poverty and the following indicators: average income per inhabitant in a household, average educational level of a household, space in housing, availability of sewage sanitation, and availability of electricity or fuel for cooking (Law for Fiscal Coordination, Chapter V, Article 34). The local government of each state distributes FAISE aid to municipalities based on similar criteria as those of FAISM.

FAISM resources are distributed directly to municipalities, and the criteria are based on their "*redistributional nature*" (LCF, Chapter V, Article 35), and give preference to "*municipalities where extreme poverty is largest and deepest.*" The variables that are considered under FAISM are population, minimum budget per inhabitant, mortality rates, the standardised Mexican social marginalisation index, and total federal spending scaled by

population. If data is not available on these, the LCF stipulates that decisions must be based on income, literacy, and housing conditions (mainly sanitation and electricity).

The conditions determine that preference must give preference to areas where the level of these variables is *significantly lower than the state average*. In other words, the official aim of the federal officials who decide the distribution is to harmonise living standards within the state. A number of scholars have argued that in their current form, the public finance rules (especially with regard to *aportaciones*), rather than improving the potential for convergence, serve to perpetuate the inequalities that existed at the moment of the creation of the policy (Ruiz Durán, 2005; Giugale *et al*, 2001). This is an important consideration and one that will be at the centre of my criticism of the current system as a poverty-reduction mechanism.

2.6.5 The role of *participaciones* and *aportaciones* in state budgets

The total amount of *participaciones* has been similar to the total amount of *aportaciones* given out nationally, through the entire period in which the funds have been thus labelled (1998–2007). However, their contributions to state budgets are quite different. In the following diagram I present a simplified outline of the structure of state fiscal income.

Figure 2.24 Components of state fiscal income, 2006
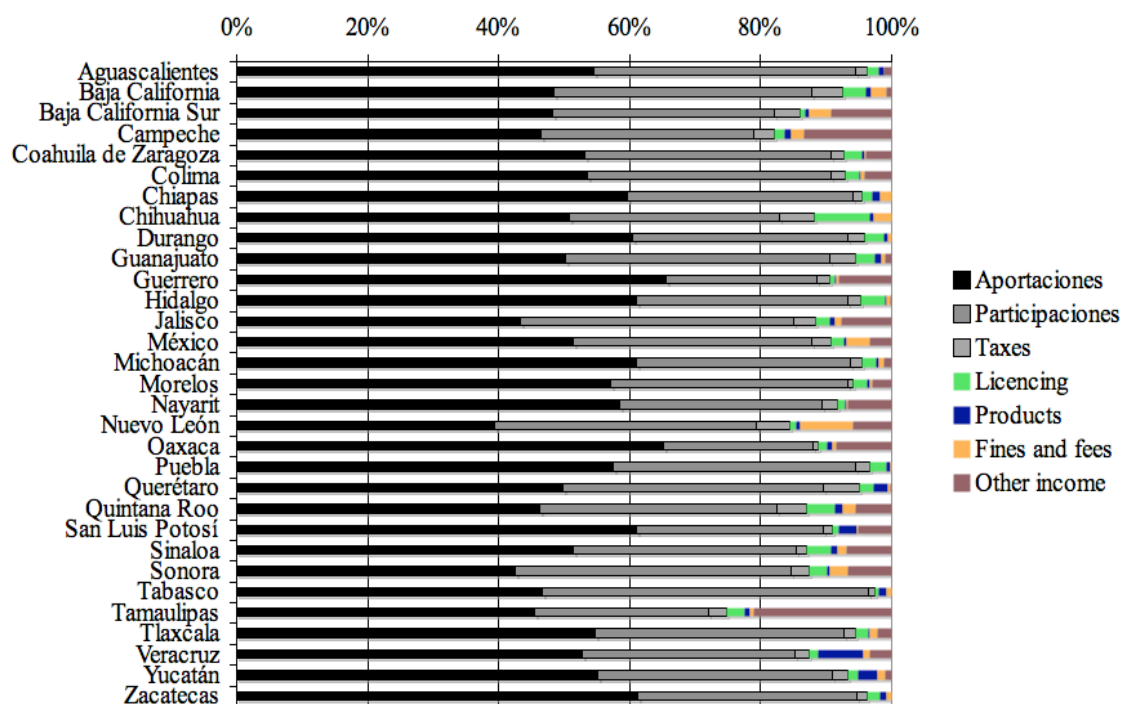
Source: My elaboration from INEGI: Estadística de finanzas públicas estatales y municipales

There are two main conclusions to be drawn from this data. Firstly, federal funding (*aportaciones* and *participaciones*) constitutes between 70 and 95 per cent of every state's income, a substantial sum by any account. Secondly, there are great variations in the balance of *participaciones* to *aportaciones*. The wealthier states of the north tend to receive under half of their income in earmarked *aportaciones*, whereas Guerrero and Oaxaca receive nearly 70%. This greatly limits the ability of some states for self-determination in budgeting.

State-generated income also varies a great deal. Some reasons for this are outlined in Section 2.5 above: more efficient tax, fine and fee collection in states with high-quality institutional environments, higher incidence of licensing policies in some states, or natural resources (in the Products category).

Over time, *aportaciones* have increased both as a percentage of state GDP and percentage of total state income. However, while *aportaciones*/GDP has undergone a steady rise, a dramatic rise in *aportaciones*/total income occurred in 1994–1997. This is an indication of the change in government policy to centralise receipts and implement revenue-sharing schemes. By the 1950s, the government considered revenue-sharing not to have been a redistributive success (Díaz-Cayeros, 2006). States have preferred revenue-sharing schemes to raising revenue by local taxation, because revenue-sharing involves more guaranteed flows of income, as well as giving automatic federal funding irrespectively of the state's efforts to raise revenue. Careaga and Weingast (in Rodrik, ed., 2003) argue that Mexican states entered "fiscal pacts with the devil" in the 1970s, surrendering local discretion in exchange for greater federal funds; Díaz-Cayeros (2006) regards this as a testament to the power of PRI to persuade states to participate, through its local influence within state politics. The trend to centralise has continued to date, and Ramo 33 and other similar programmes have strengthened it. One of the key questions of this thesis is whether Ramo 33 has been better at redistribution than previous efforts.

State income has become a major issue in budgetary negotiations, and regional funding is a large component of the federal budget. State and municipal funding accounted for 97% in the budget increases during 1997–2003 (Sour *et al*, 2003). Considering that federal funding accounts for the majority of each state's total income, it is clear that federal budget increases have a large impact on the financial positions of states and municipalities.

In the presence of the strong federal revenue-sharing process, other sources of state and municipal income are necessarily limited in importance. I have covered taxation in some detail in Section 2.5. Income from licensing, products, fines and fees is strongly subject to the state's particular conditions: not only its rules and regulations, but also its ability to enforce these.

States' borrowing is not explicitly itemised in state budgets. Mexican states and municipalities are able to borrow freely from national entities, but the federal Constitution prohibits any loans to states or municipalities from abroad or denominated in foreign currencies. The Constitution also stipulates that state and municipal debt is only to be incurred for "productive public investments" and not, for example, for debt restructuring. Most state and municipal debts are to commercial or development banks and are guaranteed by the federal *participaciones* of the state.

This illustrates the importance of the flows of federal funding to the spending ability of Mexican state governments. Any changes in federal funds will have an immediate effect on the expenditures of state government, especially given the strict requirements that states have for borrowing – effectively a balanced budget requirement.

State spending, on the other hand, is more difficult to analyse, not only because there are no disclosure requirements, but also because the categories are broad, and items are not categorised to benefit detailed analysis.

Figure 2.25 Components of state spending, 2006
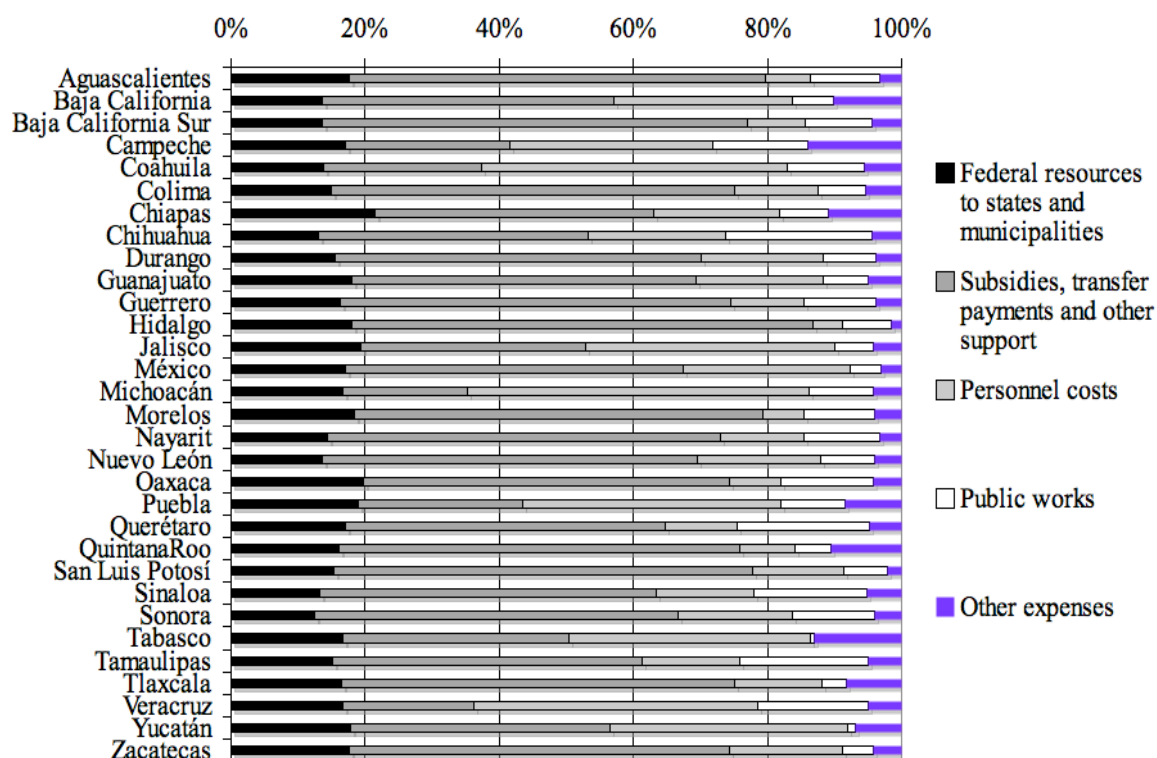
Source: My elaboration from INEGI: Estadística de finanzas públicas estatales y municipales

Other expenses in this diagram include e.g. financial investment, purchases of buildings and furnishings, and the utilities and services used by state government in its functions.

Federal resources to states and municipalities are very similar in all states, which is unsurprising, as it is determined by the LCF. Before 1998, federal and state resources to municipalities varied widely, and were very unpredictable. In order to stabilise municipal income from one year to another, the LCF (1998) stipulates that from most types of incomes of the state, municipalities must get a minimum of 20% (e.g. general *participaciones* fund, hydrocarbon extraction fund, fiscal contingency fund, alcohol and tobacco duties, new car duties). However, there are also state income sources that the state is not obliged to distribute to municipalities, and this explains why the proportion of state income that goes directly to municipalities is generally slightly less than 20%.

Subsidies, transfer payments and other support (STA, for the Spanish acronym) refers to all state spending which is not listed under the other categories. Subsidies, as in any context, are payments to maintain the prices of goods and levels of production, as well as promotion of Mexican products. Transfer payments are, similarly, transfers from one sector of the population to another. *Other support*, finally, refers to funding non-lucrative activity, such as

the maintenance of health, education and culture services and other typical government expenses. The unusual combination of these three types of expenses into the one STA category makes them difficult to analyse in detail, but the general suggestion is that these funds generally go into activities to keep a society running, through a variety of channels.

The conclusions to be drawn from this mirror those I made for state fiscal income in Figure 2.24. It is clear that government funds are the source of the majority of state spending. However, because we do not know which states spend more on subsidies and which on health and education, it is difficult to draw clear conclusions from the largest category of expenses.

In the spending chart, it is difficult to find any one figure that would directly correspond to a state's economic well-being. One might expect poorer states to spent larger percentages of their budget on personnel costs, as per the fixed costs argument above, where a similar amount of money must be spent on public service personnel regardless of the Wealth of the state. However, whilst this might be a valid argument for administrative state and municipal personnel, it is not so for health service expenditures. In some poor states (Michoacán, Puebla, Tabasco, Veracruz, Yucatán) personnel services form nearly half of the budget (but also in much-richer Coahuila). However, in equally poor Guerrero, Hidalgo, Morelos and Oaxaca, personnel costs are very low, at roughly 10% of the total state budget. This could be an accounting issue (some states registering personnel costs in the STA category), or it could reflect a difference in the organisation of the health and education sectors in different states. However, there are no marked differences in health or education statistics between these two groups of poor states, even in statistics such as maternal mortality, which are often linked to quality of health services, suggesting no marked difference in the quality of services, and therefore suggesting that the structures of spending in different states are very different, and not directly related to state wealth.

The final large category is public works. Examined in one year, this does not yield a meaningful conclusion, as public works tend to be large projects that are planned for many years, the results give durable benefits, but the cost is shouldered in one particular year. When graphed over time, the proportions of the budget that states spend on public works tend to fluctuate from one year to another, with no marked differences between different types of states. However, it is interesting that the proportions in most states fall markedly in 1995, and the general level since has remained lower than before. The 1995 drop is likely

due to the financial crisis, but why the proportion reserved for public works has fallen permanently is a different question.

In summary, the conclusions to be drawn from state spending figures are limited. In this thesis, I focus on the distribution of funding from the federal government to states, and consider the spending of the federal funding and especially its constraints as an incentive issue only.

2.7 Conclusion

As is the case for any country, the Mexican political and economic context is complex. In this chapter, I have given context especially for the key arguments that will be repeated throughout this thesis. I began by showing some patterns of Mexican political life, especially the tendency to carry out ambitious formal reforms, but often fail in their practical implementation. I showed the tendency of Mexican political actors to respect formal institutions enough to not destroy them, yet not enough to obey them, leading to a strange concoction of strict but often flouted rules. This mix gave rise to the unusually sophisticated and durable PRI hegemony, which dissolved through an institutionally appropriate process in the 1990s, creating a more diverse political game, but often played with the old rules of the PRI.

I also showed the tendency of economic failures to concentrate in particular areas. The Mexican divide into a rich north and a poor south is well documented in both academic literature and popular understanding, and is present in the economic indicators shown in this chapter. The divide, however, diminishes when non-monetary measures are introduced. This is one of the keys to the arguments in this thesis. The quality of the institutional environment is not constant within each group; the ability of states to generate economic development is not directly dependent on the distance of each state from the US border. This argument will be developed further in the coming chapters.

The remainder of this thesis focuses heavily on public finance as a key to economic inequality. In the final section of this chapter, I outlined the two main types of funding that I consider key sources of inequality and the division into rich and poor in Mexico. In Chapter 4, I explain the theoretical foundation of my reasoning. However, before that, I proceed to an examination of the relevant literature in Chapter 3.

Chapter 3. Literature review

Uneven economic growth has led to wide-scale poverty and persistent social and economic problems in many parts of Mexico. The typical problems for poor regions in developing countries are also present in Mexico: the inequality of infrastructure means that investment is attracted into wealthier areas and does not benefit the poor, nor does it help improve poor areas. Economic activity therefore clusters into wealthier areas and increases the wealth and growth potential in these areas. In the meantime, poor states remain in activities with less growth potential, such as agriculture, mining, and tourism, where also the returns to education are lower. These are the key questions I tackle in this thesis, using theories and concepts from a number of different fields.

I begin with economic growth and convergence. I then move on to fiscal federalism, and how fiscal solutions influence economic prosperity. I use the aid dependency literature to show how dependency on federal funding creates disincentives for development, and consider past works on rules and discretion as a tool for analysing the differences between different types of Mexican federal funding. Finally, I cover the literature on the political mechanisms that are likely to influence the workings of federal funding in Mexico.

3.1 Basics of economic growth and convergence

This chapter begins with the economic evidence from Chapter 2 in mind. It is clear that since the mid-1980s, the economic prosperity of Mexican states has undergone steady divergence, with few exceptions. During times of normal economic activity, rich states grow at a higher rate than poor states. Macroeconomic crises tend to affect all states somewhat, and especially the rich states that host much of the country's economic activity and are therefore affected by devaluation and other trade problems. However, the rich and active states are also faster to recover from crises. The poor states, on the other hand, rarely experience bouts of high growth, and where this has historically occurred, it has been due to a one-off development of a particular industry (such as the beginning of mass tourism on Mexican beaches in the 1970s and 1980s).

In this thesis, I outline the reasons for why the growth trend in Mexican states is so heavily leaning towards steady divergence, and why subnational convergence in Mexico is such a rare phenomenon. The standard definition of convergence is that "*per capita incomes of countries converge to one another in the long-run independently of their initial conditions*" (Galor, 1996:1056), with similar ideas advanced by Abramowitz (1986) and Baumol (1986).

Economic convergence is generally defined as the phenomenon where poorer countries experience higher economic growth than wealthier ones. Convergence theory attests that, *ceteris paribus*, countries will tend to converge in living standards in the long run; this is often referred to as sigma convergence (e.g. Barro and Sala-i-Martin, 1991). There is some debate over whether the convergence should be to GDP level or to a uniform level of standards of living, but these are often treated as interchangeable in the growth literature. Since the introduction of other definitions of convergence, the original is sometimes referred to as absolute convergence.

Barro and Sala-i-Martin (1992) analyse the concept of *conditional convergence*, which augments the unconditional convergence hypothesis by accepting variation in the steady state. The conditional convergence is summarised thus: "*per capita incomes of countries that are identical in their structural characteristics … converge to one another in the long-run independently of their initial conditions*" (Galor, 1996:1056). This is a newer hypothesis that takes into account the differences in conditions, and the implication is that there are different steady states for countries with non-identical conditions.

A third definition is that of *club convergence*, which is defined as follows: "*per capita incomes of countries that are identical in their structural characteristics converge to one another in the long-run provided that their initial conditions are similar as well*" (Galor, 1996:1056). This is the newest variant, and it is taking the concept of convergence towards a decline in generality and the more qualified view that similar countries will grow in similar ways. This would imply that countries with shared characteristics form "clubs" in the convergence literature and converge only within those clubs (Quah, 1996). Club convergence is an important concept here, because to some extent it might help explain the persistent lagging of some Mexican states, and I return to clubs later in this section.

There are three distinct waves in the convergence literature: convergence as a function of technology and human capital (1986-1992), convergence as a function of institutional

quality (1995-2002), and the emergence of country case studies and subnational convergence in recent years. A fourth group, which is best treated separately from the theoretical and applied work, is an intensive debate over the proper methodologies and measurements to be used in convergence research. The methodological debate has persisted throughout the existence of the convergence literature, starting with a wide range of papers on the empirics of economic growth and convergence (e.g. Caselli et al, 1996; Mankiw *et al*, 1992), and continuing to date (e.g. McQuinn and Whelan, 2007). However, here I do not cover the methodological debate at depth.

The first two waves of convergence research, technology-induced growth and institutionally dependent growth, mirrored the wider literature on the causes of economic growth. Barro and Sala-i-Martin (1995) list the basic determinants of economic growth as capital accumulation, population growth and technology. Sala-i-Martin (1997) argues that empirical research has generated such a number of statistically significant determinants of growth that it is very difficult to ascertain the "true" determinants of growth. It is likely that this reflects some degree of adjustment that is required for local conditions to find the ideal combination for inducing growth in each setting.

Economic growth is a multi-faceted issue. Barro and Sala-i-Martin (1995) review the early literature on theories of economic growth, where the most important contributors to growth have been technology, the sources of savings, and whether returns to scale are diminishing, constant or increasing.

The basic theories of growth have been supplemented over time by removing assumptions and constraints, and by adding more realistic features to the initial simplified models. Adding the concepts of endogenous technological improvement, consumers' savings preferences dependent on the economy, constraints on credit, and human capital has helped improve the general understanding of economic development. These newer additions provide a list of sources for economic growth, in addition to the traditional view of capital accumulation.

Most growth theories have been shown to be empirically valid in some contexts. Therefore, it is also possible that different growth theories could be used to explain different types of growth in subnational units. This is especially useful in situations where no single growth theory is found to be valid for a particular country or region, such as the case of Mexico.

Theories of technology as a driver of growth appear to explain growth in Mexico's northern industrial states. One of the key assumptions in these models is the diminishing returns to capital accumulation: as available capital increases, other factors of production do not, which lowers the productivity of capital. This assumption was first relaxed in the AK model, assuming that other factors of production, which enable the efficient use of capital, grow in line with capital accumulation. Murphy *et al* (1989) consider a mechanism by which several industries developing simultaneously produce higher steady-state equilibrium growth than what one industry alone could have produced, which is a similar notion of synergy. In Mexico's industrial areas, such synergy has indeed taken place, through industrial clusters and good-quality general maintenance and support services for industry. The development of new technology was long exogenous, but with an increasing ability for home-grown innovation, this may also be changing.

In large federal countries with high internal migration, the assumption of human capital accumulation matching physical capital accumulation is also likely to be valid. Borjas *et al*'s (1992) study of US internal migrants finds that migrants to a state tend to have a higher level of human capital than the natives on average, because the migrants have chosen to migrate to a state with higher returns to skills. Similarly, in Mexico, the most popular migrant destinations for skilled and semi-skilled migrants in the last decades have been the northern industrial states, while the migrant flow from these states to the United States consists mainly of low-skilled workers. Therefore, the overall supply of human capital in these areas is likely to be growing. The synergy of various sectors and many firms in the same area also make the area an attractive location for skilled workers concerned with wider career prospects in the same area.

Theories of convergence suggest that such successful economic activity in particular countries or regions will also help their surroundings, thus bringing the rest of the country or region to a higher standard of living. Among the earliest papers to mention convergence are Baumol (1986) and DeLong (1987), making economic convergence a fairly recent addition to economic growth and development literature. It is also a fairly contested literature in terms of both assumptions and methodologies, and most papers that find evidence for convergence tend to not do so unequivocally, but give ample qualifying statements about the conditions under which convergence might happen.

In developed countries, convergence is found far more likely than in developing countries. Barro and Sala-i-Martin (1992) find that US states experienced a significant amount of convergence between 1840 and 1988, and Webber *et al* (2005) make the same conclusion from data in 1929-2002. Barro and Sala-i-Martin (1992) find the same for regions of European countries from 1880 to 1988. Gutierrez and Brasili (2004) find evidence of convergence in economic development between EU regions towards a common mean more recently, and Villaverde and Sánchez-Robles (2001) find no evidence of multiple steady states (club convergence) between Spanish regions. Gutierrez *et al* (2007), on the other hand, find that farm incomes converge in the EU but not in the USA, possibly as a result of differing agricultural policies. This illustrates the importance of policies that induce equality between regions, a conclusion that Reed (2006) also makes based on a study of US states.

DeLong (1987:8) uses 1870 as the initial year of an international study, which is an earlier starting point than most studies have used, and finds scant evidence for convergence among the now-industrial nations. The variable he finds relevant for determining high growth is a Protestant culture, which he considers to be a good "*proxy for the social capability to assimilate modern technology*". However, DeLong (1987) does not find strong evidence for convergence, if also not for divergence. DeLong (1987) treats technology as a public good, as have many convergence papers since (e.g. Romer, 1990). Lucas (1988), on the other hand, considers that differing *initial* technology levels, rather than technology accumulation, explain his empirical finding of no convergence. Barro and Sala-i-Martin (1992) find that a joint effect between physical capital and technology promotes the finding of convergence, but their argument for convergence is heavily laden with conditions, as in the other studies.

Counter-examples to the single-peak convergence trend also exist among the developed countries. Cheung and García Pascual (2004) find evidence of club convergence ("twin peaks") within the G7: convergence into several different steady states, rather than towards one steady state. This suggests that even within this group of wealthy countries, different steady states can be found. If such differences can be found in a group such as the G7, it is clear that the growth dynamics are likely to be very different from the developing world. After all, differences between G7 countries and their regions are smaller, their institutional environments are not of vastly different quality, the differences in industrialisation and technology are minor, as are differences in educational levels and human capital.

Indeed, human capital is another common factor in convergence studies. Romer (1990) finds this to be the single most important factor in determining convergence. Barro (1991) finds no evidence for convergence, except with countries that have unexpectedly high levels of human capital despite a low level of income. Mankiw *et al*'s (1992) model includes human capital and finds evidence for convergence, although they also find the impact of physical capital significant. Durlauf (1992) considers human capital to be one of the main determinants of income inequality between households, a finding that corresponds with the generally accepted theory of labour economics that education and income tend to correlate.

A final, newer relevant factor is a host of institutional issues. Sachs and Warner (1995:2) find that "*open trade and protection of private property rights*" are the sufficient conditions for convergence. Mankiw (1995) finds some similar evidence of the importance of institutional factors. Hall and Jones (1998:1-2) consider human capital and technology accumulation to be an outdated reason for differences in levels of productivity, and that these variables are determined by what they call social infrastructure: "*By social infrastructure, I mean the institutions and government policies that determine the economic environment within which individuals accumulate skills, and firms accumulate capital and produce output*". These findings about the importance of institutions were swiftly followed in the literature by a large contingent of studies on institutions and growth, starting with the seminal works of Glaeser, La Porta, Lopez-de-Silanes and Shleifer (1998), Rodrik (2000) and Acemoglu, Johnson and Robinson (2001).

It appears that there are trends in what is considered the key to high growth and convergence, and these appear to coincide with popular themes in research in each period. In the 1980s and early 1990s, technology and human capital appear to have been common explanations. The only variable used in this period that tended towards analysis of the economic system was economic openness (e.g. Romer, 1990), but even this is presented as an afterthought to human capital. In the mid-1990s, coinciding with the entry of the institutional economics literature into the mainstream in economic research, institutional explanations (e.g. Sachs and Warner, 1995) have taken hold.

All these explanations are, of course, common factors not only in convergence, but also in economic growth in general. They have common causes (e.g. increases in schooling

improve human capital, use of technology and often also institutional quality), and may therefore also work as proxies for each other.

However, the context of these studies is overwhelmingly some combination of wealthy or middle-income countries, and this must be taken into account in evaluating the literature. In rich regions such as the EU and US, it is rare to find an entire state or region suffering from wide-scale poverty, which on the other hand is a far more common occurrence in developing countries, such as Mexico. Here, poverty traps, or low steady states of economic development, can offer explanations for the poor performance of some states.

Quah (1996:13) describes the situation of "twin peaks", convergence of poor economies into a low steady state and rich ones into a high one, and criticises the "*production-function accounting*" of neoclassical convergence analysis. Bandyopadhyay (2001) finds a twin-peaks tendency among Indian states, with one group converging to 50% of mean income, and another to 125%. Nayyar (2008) agrees, also for India, with the conclusion of a number of different steady states, and adds that if public investment levels are taken into account, conditional convergence can occur, but that this is dependent on state governments' ability for raising the required funds. This situation is similar to Mexico's, where the federal government, like in India, is responsible for distributing federal funds to states. Barro and Sala-i-Martin (1995) consider a poverty trap model where development requires a large fixed cost to get started, in order for the economy to avoid falling back into poverty. This is a formalisation of the twin-peaks hypothesis into a set of equilibria, where attempts to push poor regions towards the higher steady state tend to fail for lack of sufficient investment.

Naudé *et al* (2008) examine subnational convergence in a South African context and find little evidence of convergence. This is explained through the unevenness of economic activity in different regions, as well as through differences in institutional quality. Silva Lira (2005) also finds little evidence of subnational convergence, in a sample of six Latin American countries. Some evidence of convergence is found in Peru (1980-1990), Brazil (1970-1990) and Chile (1980-1990). Mexico, Colombia and Bolivia are found to have experienced no convergence, but the Mexican data series is very short (1993-1996). Similarly, Fuentes Flores and Mendoza Cota (2003) find that Mexico saw some convergence in 1980-1985, and divergence in 1986-1998, and they explain the recent divergence with a lack of investment in public infrastructure, resulting from economic crises and the focus of attention on macroeconomic issues.

Durlauf and Johnson (1995) find that countries with different initial conditions have different growth paths, with poorer countries growing more slowly, but give a caveat that this may be either a twin-peaks conclusion or an indication that different countries are at different stages of a common growth path. However, Durlauf and Johnson (1995), like the others, reject the notion of linear growth, and advocate growth theories that give a better fit for both rich and poor countries and subnational units.

In addition, in a federal system, unlike in a cross-country situation, states are not independent of each other, and the relationships between states are not insignificant in analysing the whole. Most developed countries with a federal structure have invested heavily in regional development and equalisation of conditions throughout the country. In the former East Germany after re-unification, the federal government invested a great deal to bring the East to a similar economic level as the West. In the United States, federal funding is frequently mobilised to keep automotive companies in business and avoid unemployment in states where other employment opportunities are scarce, especially the Detroit area. The European Union pays immense sums to stimulate economic growth in poor southern regions, such as Greece, Italy and Spain, and to maintain agricultural production in harsh climates, like Ireland and the Nordic countries.

However, such equalising measures are to a large extent absent in developing countries with federal structures. Policies are often focused on developing the regions with the most economic potential. In Brazil, São Paulo and Rio de Janeiro and their surroundings are the most developed areas, as are Delhi, Mumbai and Chennai in India, Lagos and Abuja in Nigeria, and the Moscow region in Russia. In Mexico, a similar list is composed of Mexico City, Guadalajara, Monterrey, and a handful of northern cities. The development policies of federal developing countries are often focused on creating pockets of economic activity, technology and prosperity. Unitary systems, on the other hand, tend to produce more equal growth between different areas of the country. Føllesdal (2001) attributes this to the inability and/or unwillingness of a federal government to impose policies on autonomous states. He does not address the question of why wealthy federal governments appear to have the capacity to behave like unitary governments when it comes to regional development, but there are likely a large number of explanations for this. These can range from an egalitarian tradition in political philosophy, to a view that investment climates are best improved in the long run by reducing inequality, which is one of the major sources of

civil unrest and crime. In developing countries, inequality is more socially and politically acceptable, and resources are often not sufficient for improving conditions in all areas, which results in prioritisation.

Mexico is, on average, a higher middle-income country, nearly bordering on high-income according to World Bank classifications in recent years. However, as illustrated in Chapter 2, in Mexico, municipalities can be found within Mexico to match Western European, and on the other hand Sub-Saharan African, living standards. It is very different to induce economic growth in a rural area with poor infrastructure, such as much of southern Mexico, than it is to generate the same amount of income in a well-structured business environment with highly educated workers, found in parts of northern Mexico and in the largest cities.

3.2 Growth and convergence in Mexico

There is a basic dichotomy in analyses of Mexico's recent development and its potential, which mirror Føllesdal's (2001) view of federations and unitary governments. One side views the most economically active regions as engines for the country's overall development. The other regards economic development as a necessity in the entire country. It is partly a political and ideological division, but both sides are argued forcefully in literature, as I will proceed to show. This dichotomy is a notion specific to subnational analysis, where regions can be expected to support each other financially, unlike in the international context.

The view of some regions acting as engines for economic development stems from the neoclassical view that wealth generated in some states or regions will trickle down to others. The alternative offered by Keynesian theory was to stimulate demand and economic activity in poorer regions (Amin, 1999). Both approaches have in common the assumption that economic growth is wildly unequal between regions and will not be equalised by an invisible hand.

Mexican growth has indeed been very unequal in the last few decades (Decuir-Viruez, 2003; Graizbord and Aguilar in Randall, ed., 2006; Mendoza Pichardo in Calva, ed., 2007). The theory of some regions as engines for Mexican development is not unfounded, as state GDPs and growth rates are consistently higher in some states than others. Chiquiar

(2005:257) finds that "*the winners from the reforms were those states initially endowed with, or able to attract, higher levels of human and physical capital and better infrastructure.*"

Porter's (1990) theory of national competitive advantage includes the theory of "diamond regions". This theory is essentially based on a strategic management of the firm concept: the important issues are listed as factor availability, competition, internal demand, and a local supply network.

Porter's theory stems originally from business management, but its elements are not dissimilar to the variables used in economic growth research. Migration, education and technology – some of the most common variables in growth studies – are all factors of production. Competition in the Porter model refers to incentives for improvement due to a non-monopolistic environment, which corresponds roughly to economic openness and other trade variables. Internal demand refers to the way a nation is able to match its economic activity to local conditions to create a mutually beneficial system, and local conditions (e.g. regional dummies and legal origins) are routinely included in growth regressions. The local supply network, finally, represents investment. However, the local supply network can also be argued as representing a trickle-down effect: one company purchasing the products or services of dozens of smaller (local) companies. As Porter's variables have all been found to be significant in economic growth research, it can be considered a valid tool for analysing subnational growth.

Castaingts Teillery (in Calva, ed., 2007) considers that Mexico has three "diamond" regions: Guadalajara in the state of Jalisco in the west, Monterrey-Saltillo in the northeast, and Querétaro-Aguascalientes in central Mexico, just north of Mexico City. (See map below.) Mendoza Pichardo (in Calva, ed., 2007) states that Aguascalientes, Querétaro and Coahuila (the state where Saltillo is located) are areas of high growth and competitiveness, which likely explains Castaingts Teillery's classification.

Figure 3.1 Mexico's "diamond" regions

Source: My elaboration of map base from INEGI Mapoteca Digital, on information from Castaingts Teillery, in Calva (ed.), 2007:64.

Interestingly, only a small stretch of northern Mexico is included in this. The reason for this is likely reflected in Mendoza Pichardo's (in Calva, ed., 2007) statement that most of the border states are among the wealthy states in Mexico, but Coahuila is the only border state listed as fast-growing.

Castaingts Teillery (in Calva, ed., 2007:74) observes also that "*it is vital to begin to promote economic relations between the diamond regions, and their relations with jade* [middle-income] *and carbon* [poor] *regions*". Therefore, whilst the Porter approach appears to offer a possibility for incorporating poorer areas, the poor regions are not considered a priority in this heavily neoclassical model that appears to assume a trickle-down will result from the diamond regions to the poorer ones. Díaz-Cayeros (1995:12, original emphasis) counters the view of diamond-led development in Mexico as follows:

> "*The economic development of the country in the coming years will depend fundamentally on whether <u>all</u> the regions can reap the fruits of the new model of development based on markets open to international trade.*"

Both approaches argue for taking advantage of international trade, which has been a long debate in much of Latin America, now tending towards a consensus that openness is desirable. It is unclear what exactly Díaz-Cayeros (1995) means by "reaping the fruits", but it could range from the distribution of federal funds to building business networks and

supply chains across the country. The "diamond" might be considered parallel to the view cited above that it is unjust for the northern states to subsidise the southern through the federation. Naturally, the question of how to create incentives for all states to agree to cross-subsidisation is one of the major challenges to any federation living with regional inequality.

These two approaches – engine-led and holistic – illustrate one of the challenges for Mexican growth, and especially for policymakers trying to generate wealth in all regions whilst maintaining their political support in those regions. Salazar Cantú and Varella Mollick (2003) highlight that the wealthy areas (the border states and Distrito Federal) are all highly specialised in the export sectors, and Mexico as a whole is extremely dependent on the United States for its export market, creating a disaster if the US market for these particular goods should for any reason contract or collapse. Similarly, Alba Vega (in Calva, ed., 2007) holds that poor states depend on very few different types of economic activity, and rely heavily on low-productivity activities such as agriculture. In both rich and poor states, specialisation in particular types of activity is high. Therefore, it is a point frequently made that Mexican economic growth as a whole is vulnerable to a number of exogenous shocks (Blecker, 2009): US recessions, cheaper competitors (Chinese textiles are a concern at the time of writing), alternative products (e.g. to replace fossil fuels), and agriculture specifically to climate shocks.

Why have I so far focused heavily on the idea of engines? The reason is that it is the pattern that best explains subnational growth patterns in Mexico. The engines theory gives an accurate description of the reality of regional distribution of growth, and logically allows for the resulting regional inequalities. After the liberalisations of the Salinas presidency and afterwards (i.e. after 1988), an active policy of sectorial growth was implemented (Dussel Peters, 1998). However, in regional terms, liberalisation led to unwanted consequences:

> "*In the Mexican economy since 1988, there have arisen several structural limitations that are a direct result of liberalization strategy itself: (…) Economic, income, regional, business, and sectorial polarization in Mexico has sharpened dramatically since 1988.*" (Dussel Peters, 1998:356)

Similarly, Rodrik (1996:9) lists typical post-liberalisation values as "*fiscal rectitude, competitive exchange rates, free trade, privatization, undistorted market prices, and limited intervention*". Regional development was not a specific goal for early liberalisers, and as per the neo-liberal view, no measures were put in place to induce convergence, or to discourage divergence. This has led to inadvertent economic divergence between Mexican states for a long period.

Chiquiar (2005) concludes that the reforms that opened the Mexican economy to international trade induced regional divergence, and NAFTA did not appear to change this trend.

Chiquiar (2005) finds evidence of convergence in 1970-1985 and divergence from 1985 to 2001, and gives a comprehensive review of various other papers with the same conclusion: the break happened around 1985. Apart from the ones listed in Chiquiar (2005), Fuentes Flores and Mendoza Cota (2003) find evidence of convergence prior to 1985 and divergence in 1986-1998, and Decuir-Viruez (2003) finds evidence of divergence in 1985-2000. Mallick and Carayannis (1994), an important paper because it is among the oldest, find convergence in the 1970s, but divergence in 1980-1985.

A notable exception to these papers with relatively short time series is Carrión-i-Silvestre and Germán-Soto (2007), a comprehensive analysis of convergence between Mexican states from 1940 until 2000. They find evidence of convergence, but only if accounting for structural breaks in the time series. They find structural breaks in the series in 1949-1955, 1963-1969, 1976-1978, and 1981-1983. The first two coincide with the two ends of the "Mexican miracle" of high growth: the period of high growth began in the late 1940s, and the second where growth slowed down in the late 1960s as a result of increased violence and political instability. In the late 1970s, the oil crises are likely to have altered Mexican export conditions. The last break indicates the 1982 debt crisis.

Carrión-i-Silvestre and Germán-Soto's (2007) focus is largely econometric, and little policy analysis or explanation is attempted. However, another study with a long time series is Esquivel (1999), who finds convergence in 1940-1960, but none since then. Esquivel's (1999) main theme is geography and growth, but the study also includes a detailed analysis of the "socio-economic mobility" of states, concluding that the order of rich and poor states has changed very little between 1945 and 2000 – thus also showing that substantial convergence has not taken place, at least not since 1960, which conflicts with the papers cited above that find convergence in the 1970s.

The literature on Mexican regional convergence tends to find similar determinants of growth to much of the growth literature. Decuir-Viruez (2003) finds the most significant variables in a growth regression to be economic freedom and initial GDP, indicating both divergence and a large influence from economic liberalisation – and economic

liberalisation is primarily present in the most industrialised states. Fuentes Flores and Mendoza Cota (2003) find, with a very parsimonious regression model, that investment was significant in 1980-1985, but that in 1985-1998 the only significant determinant of growth was initial GDP, with a positive coefficient, suggesting absolute divergence, not merely conditional. Chiquiar (2005), on the other hand, finds a long list of significant variables for growth, including schooling, investment, public spending, and access to technology.

Sectoral convergence in Mexico has also been analysed by some. Mallick and Carayannis (1994) find that in 1970-1985, the only sector with strong convergence was the hotel and transportation sector. They do not offer an explanation for this 1994 conclusion, but to the reader familiar with Mexico today, it is unsurprising: Mexico's primary holiday resorts were being developed in this period, mostly in the poorest states. In the 1970s and early 1980s, highways, hotels, restaurants and international airports were constructed at record pace in Acapulco (Guerrero), Cancún, Isla Mujeres and Cozumel (Quintana Roo), Huatulco (Oaxaca), and Los Cabos (Baja California Sur).

Non-industrial economic activity, such as tourism, has indeed helped some poor areas to prosper. On a municipal level, all the tourist towns mentioned above have a social marginalisation figure of medium, low or very low, despite many being in areas where their neighbouring municipalities score high or very high. However, not only are such success stories rare, but also, a large-scale creation of an industry can only occur once, and explosive initial growth is bound to slow down. Indeed, Díaz-Bautista and Mendoza (2004) find no evidence of sectoral convergence in any sector, including hotels and restaurants, for 1985-1998.

Overall, the literature on Mexican subnational convergence is in unusually unanimous agreement that convergence took place prior to the mid-1980s, and that the economic growth paths of the states have diverged since. I have established here that reasons for economic growth and convergence are numerous, and vary between and within countries. As described above, measures for equalising standards of living and economic activity between regions appear to be less successful in federal developing countries than unitary ones, and Mexico is no exception in experiencing divergence as a result.

In Mexico, the primary attempts to bring poorer states to a higher standard of living have been through public finance: distribution of federal tax revenue and other funds to states

and municipalities. The aim of Ramo 33 is to ensure that federal funds are distributed according to particular socio-economic criteria, jointly established by the president and Congress, with the overarching aim of supporting the construction of social infrastructure. I proceed to show the research on how this is best done, as well as show why research to date has been inadequate for analysing the Mexican context.

3.3 Fiscal federalism

What needs to be considered in designing public financial systems? What is the best way to fund public services? Centralisation or decentralisation? These are the main questions tackled by the fiscal federalism literature. The way in which taxes and other revenue is collected and redistributed is key. Usually, local conditions determine how a system is designed, and both historical and current considerations are relevant. Therefore, I begin here with an examination on fiscal federalism in general and continue with a section on Mexican fiscal federalism in particular.

Weingast (2006) outlines the two "generations" of fiscal federalism literature, the first being normative (how systems should be) and the second positive (how systems are and why). The key addition to the second is that of the difference between the electorate's goals and those of a politician, such as re-election or budget maximisation. In summary, it accounts for the incentives of policymakers. The expectations of voters and politicians are clearly an information issue, varying between different institutional and even local contexts, therefore introducing the question of informational issues into the analysis of political institutions in federal countries.

Weingast (2006) summarises a vast amount of literature, primarily focusing on the second generation, which is also more relevant for my argument. The fiscal federalism literature is huge, and reaches from political ideology (decentralisation means smaller state) to political economy and purely neoclassical considerations of cost-efficiency. In the literature, the concepts of political and economic decentralisation often overlap. Political issues need to be considered when economic (de)centralisation decisions are made, because not only is political approval needed for such operations, but also the implementation of fiscal schemes will be heavily related to political preferences.

Bradford and Oates (1971a:418) state that the fiscal system employed in any given situation

will be "*a matter of politics, formal or informal*", and analyse the cases throughout as economic outcomes within political equilibria. Rodden (2002:685) similarly calls for "*a richer understanding of the way in which fiscal and political institutions co-evolve*". Inman (1987:2) considers two hypotheses: that "*aid is allocated to correct market or political failures in the local public economy*" and that "*aid is allocated to ease the fiscal pressure in the state-local sector when, and only when, it is in the political interests of Congressional representatives to do so*". The second, political explanation is found to be more relevant in his empirical study of the United States, whereas the first, economic hypothesis is refuted.

Here, the focus is on the largely centralised Mexican tax and public finance system, which is, unusually, embedded in a highly decentralised political system. This is a case rarely seen in the literature, and produces outcomes that are difficult to analyse accurately without taking into account the hybrid of a partly centralised (fiscal) and partly decentralised (political) system. In terms of Musgrave's (quoted in Oates, 1968) taxonomy that public finance consists of efficient allocation of resources, high and stable employment and output, and an appropriate distribution of wealth, I focus on the third. I begin by considering the rationales for centralisation and decentralisation.

Inman (1987) mentions the political attractiveness of fiscal centralisation. Politicians tend to prefer federally allocated budgets, because these are less easily attributable to their own efforts. Monitoring and performance evaluation is more difficult. For the self-serving politician whose main priority is his career, such an environment is desirable.

A centralised system also removes a competitive element from state-level fiscal planning. Tiebout (1956), Oates (1968) and Bradford and Oates (1971a) discuss the implications of competition between jurisdictions over taxpayers, and the potential of migration from one state to another that might be offering more attractive arrangements. Levying taxes at the federal level discourages tax-based migration. However, political decentralisation may cause that there is nonetheless an element of competition. If states are entitled to distribute funds according to their preferences, then the socioeconomic groups benefiting most from federal funding are not the same in different states. In Mexico, in poor states the poor benefit most from federal funding, in rich states the rich do. Therefore, an individual can still improve his conditions by migrating to a state where politics is more favourable to his own socioeconomic group. Oates (1968:45) argues that because mobility between states can never be sufficiently curbed, redistributive policies cannot be decentralised, and that "*the*

primary responsibility for implementing redistributive policies must in most cases rest with the central government".

Centralisation also removes the need for special federal measures to equalise conditions, which might be wildly disparate in states with fiscal autonomy, varying tax rates and social policies, and the incentives to act differently from each other (Oates, 1968). Buchanan (1950) presents the alternative of an intergovernmental transfer system to cover any disparities between jurisdictions arising from unequal fiscal capacities, and indeed revenue-sharing schemes are one of the most common ways of implementing a centralised fiscal system in federal countries. However, in a fully rational system, the states would anticipate federal intervention, which would eliminate the incentives to act differently. Thus, if the repeated-game dimension is included, horizontal equality (equality of all in the federation regardless of state or local arrangements) is guaranteed. Most papers from the 1950s and 1960s do not take this dimension into account (e.g. Buchanan, 1950 and Oates, 1968; the idea of repeated games was pioneered some time later in seminal papers such as Rapoport and Dale, 1967; and Trivers, 1971). However, it is arguable that in a system heavily built around six-year presidential administrations, where policies can change radically from one president to another, rational expectations would not be a realistic assumption, and therefore the understanding advanced by Oates (1968) holds.

Oates (1968) points out that the federal government has much more latitude in terms of using credit and deficit financing than state governments, and local governments are much more reliant on balanced-budget financing. Therefore, a centralised system is much more likely to be able to employ inter-temporal smoothing methods for expenditures at different stages of the business cycle. Rodden (2002:671) supplements this with the argument that subnational systems can be subject to moral hazard, then over-borrow and expect to be bailed out by the federal authorities: "*the possibility that subnational governments will try to over-fish the common revenue pool*". Rodden (2003) argues that the possibility of federal funding creates a tendency to overspend, whereas a financially sovereign state government would be more prudent. In most cases, this would also mean that especially the net gainers in a federal system, the poor states, are likely to overspend.

All of these arguments are in favour of fiscal centralisation: it creates equality, removes competitive elements to prevent a "race to the bottom", and takes advantage of the economies of scale of the federation in relation to the outside world.

The case for decentralisation has also been argued extensively. Perhaps the best-known theory is the Leviathan hypothesis, introduced by Brennan and Buchanan (1977), by which a centralised government will always be larger than a decentralised one: "*Total government intrusion into the economy should be smaller, ceteris paribus, the greater the extent to which taxes and expenditures are decentralized*" (Brennan and Buchanan, 1980:185, quoted in Oates, 1985:748). This view assumes that government is monolithic and monopolistic, and Oates (1985) counters that in a competitive environment, a decentralised government will be more expensive in budgetary terms due to the loss of economies of scale. Oates (1985) finds no evidence for the Leviathan argument through an empirical study, and rejects particularly the notion of a monopolistic public sector. Congleton *et al* (2003) carry out a study with more nuances, analysing the starting points of varying levels of centralisation, and the implications this has on the size of government. Their finding is that asymmetric decentralisation, a situation where some subnational governments hold more power than others, is an equilibrium state in a number of institutional settings.

Reasons for decentralisation are found also in the informational advantage of local government. Oates (1968) argues that local government is far more able to gauge the preferences of the local population, in terms of both fiscal policies and the choice of public goods provided. Rodden (2003) considers that whilst the local government may be better placed to know the needs, tax decentralisation helps the local government also have the funds for the required public goods. However, this is necessarily a trade-off between two types of informational advantage: the local versus the national, where national-level information includes issues such as availability of funds in relation to current and expected macroeconomic events.

Congleton *et al* (2003) point out that in a decentralised fiscal system, the subnational entities must also be given the political authority to implement differing policies, and the financial means to fund the services relevant to their constituencies. This implies that some degree of political decentralisation is necessary for economic decentralisation, which again illustrates the relevance of political systems in the design of economic systems.

In addition to the simple rationales for various degrees of centralisation, there is an extensive literature on the institutional design and incentive element of fiscal federalism. Institutional design (e.g. de Figueiredo and Weingast, 2005) is a large recent branch of the

literature on federalism, and analyses theory and existing systems with the objective of creating incentive structures. Shah (2005), on the other hand, tackles the same issues on a more practical level and considers federalism as a framework for the relationship between government, the private sector and civil society. Shah (2005) concludes that a decentralised fiscal system will give greater transparency than a centralised system.

These viewpoints are the tip of the iceberg in the vast number and diversity of the conceptual frameworks used to analyse fiscal federalism. In a brief literature review, one comes across not only the simple rationale for (de)centralisation (the above cited as well as Panizza, 1999), but also public choice (Oates, 1968; Besley and Coate, 2003; Rodden, 2003), regional economics and economic geography (Bolton and Roland, 1997; Alesina and Spolaore, 1995), incentive theory in the vein of new institutional economics (Qian and Weingast, 1997), applied trade theory (Shah, 2005), theory of political competition (Oates, 1985), and credit financing (Oates, 1968 and Rodden, 2002).

The Mexican federal system, like all political systems, has its particularities, which often results in general international analysis being insufficient for explaining country circumstances. Different kinds of federalist structures can lead to very different outcomes (Careaga and Weingast, in Rodrik, ed., 2003), and therefore local conditions are of huge importance.

In Mexico, the peculiarities of the political system and an unusual political history make the analysis of today's system complex. Merchant and Rich (2003:661) open their paper with a concise summary of Mexican federalism: "*The Mexican situation is complicated by a long history of frustration as far as implementing a federal system which, on paper, has one of the best constitutional foundations in the world.*" They argue that potential sources of failure have become more important than forms of government in deciding on a fiscal system, and in the context of politicians and bureaucrats as risk-averse maximisers of votes and budgets, this is logical. In Mexico, the unique characteristics of the system ensure that there are plenty of potential sources of failure, and that they are likely to be related to particular features of the Mexican system. Therefore, the remainder of this section is dedicated to fiscal federalism as it is implemented in Mexico.

As discussed above, the Mexican system is a combination of a centralised fiscal system and a decentralised political system. The federal Constitution of 1917 determines the

sovereignty of states, and successive governments in Mexico have been reluctant to challenge this. In fact, several changes were made in the 1990s to increase the states' power in legislative issues (Merchant and Rich, 2003). Díaz-Cayeros (1995:5) describes Mexican history as a story of two conflicting forces: the "*centrifugal tendencies generated by the great diversity of territorially determined political, economic and social interests*", and the centralising tendency of the concentration of powers on the president. Díaz-Cayeros (1995), writing at the peak of economic and political enthusiasm over NAFTA, phrases the dilemma of federalisation in Mexico through the incidence of economic activity. The increased international business has obliged some regions (especially in the north) to upgrade infrastructure and improve the business environment in order to accommodate foreign investment. However, in turn, the federal pact, with incentives for all to respect the federal system, is necessary to keep the system from unravelling altogether.

In an unequal and heterogeneous society like Mexico, unravelling is indeed a risk. Discord between groups from different economic, social and cultural settings within Mexico is not uncommon, and is often invoked in (mainly left-wing) political campaigns. Merchant and Rich (2003) discuss grievances by entrepreneurs in northern Mexico that the northern states suffer from effectively financing the poor states through the federation. Whilst this is not a commonly documented view, it illustrates the necessity for a stable federal structure where all states benefit from belonging to the federation, and incentives to oppose collaboration are minimised. In a system of voluntary participation, sufficient incentives to remain in the system are paramount.

Another benefit to federalism is that presented by Persson and Tabellini (1996), who argue that federal arrangements protect against "*social shocks*". In Mexico, this is a powerful argument in favour of supporting the poorer states. In addition to the Chiapas uprising in 1994, various large-scale protests from the poorer states have emerged, including an uprising in June 2006 by teachers in Oaxaca, which has spread and remains forceful. In the summer and autumn of 2006, the same teachers' groups and many others protested, bringing hundreds of thousands of people to Mexico City to back Andrés Manuel López Obrador's campaign alleging electoral fraud. The tradition of grass-root activity in Mexican politics demonstrates the potential for local political crises, and federal funds help alleviate the incentive to take part in anti-government protests.

Careaga and Weingast (in Rodrik, ed., 2003) present two more reasons why a government would benefit from a centralised fiscal structure. The first is that a government with a monopoly on taxes does not have to fear for its taxpayers moving to another jurisdiction in search of lower taxes. Mexican local politicians have supported the tax monopoly, because it removes an element of competition from state fiscal policy – although it is important to remember that some taxes are still levied locally by states in Mexico. However, Careaga and Weingast (in Rodrik (ed.), 2003) also state that many Mexican states in the 1950s were reluctant to join the fiscal coordination system. This shows not only their long-standing commitment to political independence, but also the power of the PRI government to convince or coerce all states to join.

A further extension of the size-of-government argument by Careaga and Weingast (in Rodrik (ed.), 2003) is that by basic economic theory, a monopolistic government can levy higher taxes than competing subnational governments. This is in line with the Leviathan hypothesis (Brennan and Buchanan, 1977) that decentralised government is likely to be smaller because taxes are competed down.

The second argument for centralisation in the eyes of the Mexican government, according to Careaga and Weingast (in Rodrik, ed., 2003), was the way in which centralised taxation and government funding enabled PRI to reward its own voters and punish opposition supporters. However, it is arguable that this is now an obsolete argument, both because there are now multiple parties controlling the distribution of federal funds, and because the arrival of political competition reduced the possibilities for any party to run such a large-scale network of clients. However, it is clear that state clientelism and decentralisation would be difficult to implement together, much in the same way as previously stated that PRI hegemony could not withstand internal competition within PRI.

This section has outlined the general arguments for and against a centralised and decentralised government in a federal context, and mentioned some of the specific issues present in analysis of the ideal mechanism for a federal country. In summary, the most important questions in the centralisation/decentralisation debate are competition between subnational units, incentive structures for behaving in socially desirable ways, and the predictability and transparency of actions, all of which together create the mechanisms by which federal funds are distributed.

Politics has been a relevant issue throughout this chapter. I have considered the incentives politicians might have to implement and allow certain types of administration, and how political systems help create these incentives. In the next section, I tie these together and show how politics is intertwined with economic growth in Mexico.

3.4 Federal funding, economic prosperity and politics

In Mexico, as I showed in Chapter 2, state budgets vary a great deal in the sources of their income, as well as in the priorities that state governments have in spending those budgets. In addition, divergence is persistent, and poorer states tend to lag in both economic growth and human development, despite government attempts to distribute federal funding in ways that try to improve conditions in the poor states.

These two facts together form one of the main questions of this thesis. Why do poor states remain poor, and suffer from low growth, despite the large proportion of federal funding, for many years, aimed at reversing the trend? One explanation could be that the receipt of federal funding indicates, or causes, a structural problem that prevents economic growth. However, also wealthier states receive large proportions of their budgets from federal funds, and despite this, grow at higher speeds, attract investment, and stimulate economic activity. Therefore, it appears that the structural problem, with which federal funding is related, is either only present in the poor states, is much amplified in the poor states compared to the wealthier ones, or is a result of the two different types of funding, one (*participaciones*) more prevalent in rich states, one (*aportaciones*) in the poor.

I argue that there are structural problems that cause the poor states to lag economically. These factors enable the vicious circle of poverty in states that receive large shares of their federal funding, but nonetheless remain poor.

The traditional approach to public finance can explain the different overall problems and issues that federal and subnational governments may face, as well as illustrate the interaction between subnational governments in different types of federal countries. However, the theories covered so far, whilst useful in understanding the issues involved, do not explain how subnational units in the same federal structure can end up being so different in terms of wealth, ability to compete, fiscal structures, political conditions,

migration, and levels of education. Earlier, I offered power asymmetries as one explanation, and it can be valid in Mexico.

In this thesis, the structural problem is sought primarily in subnational political institutions. In Mexico, state political autonomy is an important political institution, and political conditions are historically the largest inherent difference between the different states, as well as the most persistent difference. It can therefore explain the socio-economic differences between states to a great extent. However, in this thesis, I aim to explain why poverty and inequality are so persistent that states diverge even in the presence of programmes aimed at the contrary.

I argue that the primary source of the circle of poverty in Mexico is twofold: local political conditions have created local political institutions, and the federal funding setup in a state determines the state's incentive structure today. The main political dimension I consider is political competition and the transition to democracy. The federal funding dimension refers to the different types of funding each state receives, and the reactions each state might have to their particular federal funding situation.

Therefore, I seek an explanation for the circle of poverty that not only incorporates the issues outlined above (incentive structures and transparency), but also enables the inclusion of local political conditions in the analysis.

3.5 Aid dependency and federal funding

In explaining unequal growth in Mexico, I focus on the effect of public finance in upholding the old order of rich and poor states, as well as its role in generating persistent economic divergence. I argue especially that there are institutional barriers to the development of southern Mexico, and that public finance perpetuates these barriers.

I adopt an aid-dependency framework for explaining how public finance maintains the distinction between rich and poor. The aid-dependency literature essentially argues that aid – I use the term loosely to mean any funding exogenous to the local economy – creates incentive problems for the local economy and discourages local economic development. I argue that federal funding in Mexico has the same effect.

Bräutigam and Knack (2004:257) define aid dependency *as "a situation in which a government is unable to perform many of the core functions of government, such as the maintenance of existing infrastructure or the delivery of basic public services, without foreign aid funding and expertise"*. With the exception of the word "foreign", this applies to many Mexican state budgets, which without federal funding are very small. Naturally, one of the reasons federal funding is so important in state budgets is that states pay most of their taxes to the federation; without a revenue-sharing agreement, many states would indeed be able to support themselves and not be dependent on aid. At the same time, a number of poor states would find themselves struggling to provide the requisite level of public services without being effectively subsidised by richer states. This is a situation of aid dependency, and on this I base my argument that aid dependency is a good description for the situation of the poor states of Mexico.

The literature on aid dependency ranges from the foreign aid viewpoint of development studies to the federal aid viewpoint of public policy studies. However, the weakness of the federal funding literature in relation to the Mexican case is that it is largely US-based, and nearly all the empirical work on the topic is American: there is little, if any, literature on federal funding dependency in developing countries. Therefore, I include arguments here from both the foreign and federal aid dependency literatures, both of which have their advantages.

The federal aid dependency literature is accurate in its focus on the autonomous but interdependent relationship between the federal and state governments. It therefore has the advantage of having the correct viewpoint on key issues, such as the interest of the federal government in providing aid, which is a very different story from the motivations of international donors in giving foreign aid. The US federal funding literature thus draws on a *political* context that is appropriate for the study of Mexican federal funding.

However, the foreign aid dependency literature gives a better understanding of the mechanisms that excess aid can trigger in society, especially under conditions of inadequate institutional quality. Therefore, I use the foreign aid literature mainly to contribute to my theory of the motivations of recipients, and consider that the foreign aid dependency literature assumes a local *institutional* context that is suitable for analysing Mexico.

The aid dependency argument has been extensively applied to various aspects of fiscal federalism in the United States. A classic work is Key (1936, cited in Cho and Wright, 2007:106), who gives the main issues in federal funding dependency as follows:

i.   *the skewing or unbalancing effects of aid on state policies,*
ii. *the impact of federal funds on state fiscal efforts,*
iii. *the administrative autonomy presumably promoted by federal aid, and*
iv. *the expansion preferences of aid recipients."*

These arguments all provide feasible explanations for why Mexican states suffer from difficulty in generating economic development, and why – despite the high proportion of federal funding in all states' income – the effect is disproportionate on the poor states. I therefore structure my analysis with these four points, which are all supported by the wider literature on aid dependency, institutional development and growth.

The first concern, skewing or distortion effects of aid on state policies, materialises when the focus of state policies changes as a result of receiving aid, as compared to state policy without the aid. Nemon (2007) argues that federal aid is often the only type of funding that can be used explicitly for reducing poverty. However, in the Mexican context it is also the other way around: a certain part of federal funding *must* by law be used for poverty reduction (*aportaciones*). Therefore, it is a feasible argument that federal funding and its spending rules cause a distortion of public policy in the poor states of Mexico towards "social infrastructure", and away from productive activity.

Schneider (2005) also considers the erosion of social contracts as a key problem of external aid. Where a state government – as in Mexico – does not depend directly on local taxpayers for its funding, the implicit contract between local government and electorate is severed. This is likely to also influence whether the state provides the services relevant for the taxpayer, or whether it is more likely to provide the services required by the aid or federal funding contract.

Key's second consequence of federal funding dependency is the impact that dependency has on local fiscal efforts, and a number of authors expand this to include also institutional efforts. Riddell (2007:38) summarises recent aid dependency literature as a concern that aid was *"discouraging the expansion of domestically created revenue and self-sustaining development"*. This is one of the key arguments in this thesis. Federal funding creates a situation where there are few incentives for raising more taxes, and free-riding in the federation becomes attractive.

Burnside and Dollar (1997), on the other hand, find that foreign aid can induce growth, but only in recipients of adequate institutional quality. For the federal state, the key variable in terms of institutional quality in their study is fiscal balance. In other words, states with healthy local institutions and balanced budgets are more likely to turn aid into growth. This is what we observe in Mexico. On the other hand, Burnside and Dollar (1997) find that foreign aid has no positive effect on growth in countries in poor policy environment.

Moreover, Geddes (1994) argues that if pressure comes from outside (e.g. donors, or in the federal case the federal government), the incentive for local institutional reform is weakened because the community develops a reliance on tacit support for monitoring. In the Mexican case, communities reliant on *aportaciones* are likely to be subject to a great deal of external monitoring, and it is possible that this crowds out the development of local, organic and sustainable monitoring mechanisms. This is in line with Burnside and Dollar's (1997) finding that aid does not encourage the formation of good policies.

Key's third point, administrative autonomy, means that the intensity of supervision that the recipient receives depends on the source of funding: a federally funded agency is likely to be less monitored by the state than a state-funded agency. In other words, a local funding source (e.g. state) is more likely to be interested in the success of the funding than a faraway funding source (e.g. federal government), and more likely to be able to monitor effectively. A number of writers (e.g. Bräutigam and Knack, 2004; Riddell, 2007; Nemon, 2007) echo the theory that transaction costs for faraway funding are higher than for locally sourced funding. Therefore, if monitoring is required (as in the case of earmarked funding), it is costlier for federal funding than it would be for local funding, and there is less incentive to monitor properly.

In addition, Cho and Wright (2007) make the argument that states are likely to lose elements of their autonomy if they are strictly monitored by the federation. In the Mexican case, this creates an asymmetry between the wealthy and poor states: due to the heavy weight of *aportaciones* in poor states' budgets, they are also more likely to be monitored, and lose this element of their sovereignty. A lower degree of sovereignty also reduces the opportunities to invest in locally productive activities.

Finally, Key's fourth concern of federal funding dependency focuses on the observation that federal funding programmes tend to grow. This has also been the case in Mexico, to the extent that many states rely on the federal government for 90% of their funding. Based on Niskanen's (1968) theory of the maximising bureaucrat, Cho and Wright (2007) argue that bureaucrats will always push for higher budgets. However, in a federal funding set-up, revenue-sharing does not provide a higher budget – nationally – than fiscally sovereign states (*ceteris paribus*). However, in a federal state, the attraction of revenue-sharing is different. States prefer fiscal centralisation for reasons I outlined in Section 3.3: shared revenue is more difficult to attribute to any one politician's efforts (Inman, 1987) and the element of tax competition is removed (Tiebout, 1956; Oates, 1968). There are few economic or political theories that would argue against Key's idea that federal funding has a tendency to grow. However, the automatic growth of federal funding programmes is only good news for the poor states of Mexico if they are benefiting from the growth of the federal aid programme, and turning federal funding into economic growth. I argue in this thesis that that is not the case, and therefore the growth tendency of federal funding is not necessarily good news for Mexico's poor states.

On a final note, Key (quoted in Cho and Wright, 2007:106) observes the difficulty of co-ordination in creating a system that would give politically, institutionally, socially and economically ideal results. He notes that "[t]*he American system of grants has had important effects on the federal–state fiscal system, but incidentally rather than by design*". This is true for any federal finance system, because most systems include elements of political decision-making, random and unobservable influences, and trial and error. This also applies for the Mexican public finance system, where a political influence can be found for each and every element of federal funding. Therefore, I continue this chapter by making a theoretical distinction between the two most important types of Mexican federal funding: earmarked *aportaciones* – rule-based – and the discretionary *participaciones*.

3.6 Rules and discretion

In Mexican public finance, a systematic approach to improving conditions in particular states and municipalities is a product of the past two decades. During the PRI hegemony, a large proportion of public funds were directed at individuals, families and communities in return for votes for the ruling party. These funds were nearly all discretionary: the local political organisations decided on the recipients, and no hard and fast rules existed on

which states and municipalities would be supported, nor was it specified for what purposes the funds were to be used. In 1998, Ramo 33 was introduced, and included two substantial components (*aportaciones* and *participaciones*) with clear economic indicators outlining the formulae for how to distribute federal funds to states and municipalities, and for *aportaciones*, also strict spending rules. This marked a change in the management of clientelistic relationships: because a large proportion of federal funding was now based on objectively measurable economic indicators rather than voting behaviour, the clientelistic system was more difficult to uphold, and public finance was easier to direct on a meritorious basis and following the formulae.

Ramo 33 is not the first Mexican federal funding scheme that specifies recipients, but it is the first where rules were set at the level of states and municipalities, rather than households. Progresa, from 1994 to 2000, required families to send their children to school and see a doctor regularly in order to receive funds. Ramo 33 is the first distribution mechanism that specifically targets poor states and municipalities rather than families within them. This is a unique development in the history of Mexican public finance, and the aim of this research is to evaluate whether this strategy on the part of the Mexican government works to remove the persistent clientelistic influences in public finance. The rules and discretion literature helps isolate any influence that the Ramo 33 economic guidelines might have had in separating clientelism from public finance distribution.

Much of the literature on rules and discretion, including Barro and Gordon (1983), Barro (1984) and Alesina and Tabellini (1987) relates to monetary policy rules, such as inflation targets. Barro and Gordon (1983) make the assumption that the game is repeated, and make the since much-repeated conclusion that reputational forces can function as well as rules, whilst providing the flexibility of discretion. Barro (1984) makes a similar conclusion, but adds that simple rules improve credibility and the quality of commitments. Alesina and Tabellini (1987) also give an ambiguous answer to the benefits of rules in all situations.

A newer branch of literature has adapted the discretion and rules approach to fiscal policy. This appears to be less generalisable to global conditions than monetary policy analysis, as many of the studies take a case study approach. The more regional character may be due to the strong presence of political procedures in fiscal policy that is not present in monetary policy analysis (Wyplosz, 2002). Like in the monetary policy and rules literature, the general conclusion is that rules improve the probability of fiscal policy acting in the public

interest (Cukierman and Meltzer, 1986), can reduce the impact of politics in fiscal policy (Kopits, 2001), and that some aspects of fiscal policy should be shielded from politics through the careful use of rules (Wyplosz, 2002). Stein *et al* (1998) present a general analysis of fiscal rules in Latin America, of two different types of fiscal rules: numerical constraints and procedural rules. By numerical constraints they mean the economic indicators analysed by the above authors in fiscal policy. Procedural rules, on the other hand, refer to improved bureaucracy and other institutional quality issues, which are also argued by Wyplosz (2002) to be as, if not more, important than rules. Stein et al (1998:17) find that "*more transparent and hierarchical budgetary procedures lead to lower deficits and debt*".

Manasse (2007) is more sceptical, arguing that "escape clauses" in fiscal rules lead to rules being bent – at the discretion of governments – which leads to unpredictability in fiscal policy despite rules. However, Manasse (2007) appears to be in general agreement with the others in that bendable rules are better than no rules.

General theories of rules as controls of political will go back to Simons (1936), who sees the role of rules as follows: "*To assure adequate moral pressure of public opinion against legislative (and administrative) tinkering*" (Simons, 1936:29). The seminal work of this field is generally considered to be that of Kydland and Prescott (1977), who argue that discretionary economic decisions will not result in socially optimal outcomes. This is because rational agents will base decisions not only on past and present conditions, but also on expected future policy decisions, and therefore discretion in decisions merely reduces predictability. On the contrary, a rule based on past data would give a result with the same information as all actors have, which enables accurate prediction. In another take on the same issue, Cukierman and Meltzer (1986:386) define a theory of rules and discretion as government tools, in a situation of imperfectly informed voters, and find that "*any government with private information that maximizes the probability of reelection will choose not to maximize social welfare*".

These informational and institutional aspects are primarily of interest here. In this thesis, the rules and discretion question becomes relevant in the analysis of earmarked and discretionary spending, whether earmarked spending alleviates poverty as it is intended to do in the Mexican context, and whether the discretionary funding is spent on socially suboptimal purposes, as the theory predicts.

Kydland and Prescott's (1977) argument is at heart that rational voters know that without predictable rules, politicians can be swayed, post-election, to deviate from their electoral platform. Some economists argue that in Mexico, this is not unusual: Hernández Trillo (2008a) recounts how the fiscal stabilisation fund for oil revenue has been through frequent changes, despite its original justification being to tie the hands of governments, and keep the oil revenue for bad times. Kopits (2001:3) agrees with the general aim of rules: they "*seek to confer credibility on the conduct of macroeconomic policies by removing discretionary intervention*".

Manasse (2007) offers an alternative interpretation of the benefits of rules. He argues that politicians will avoid the costs of violating rules, and in the process manipulate variables to stay just within the acceptable limits. While this argument originates from deficit limits and other numerical rules, it can be applied also to projects that earmarked funds are spent on: politicians may be tempted to stretch the definition of what projects comply with the earmark, or choose projects based on how they fit the earmark, rather than what is socially optimal.

In this situation, rules may be an improvement over full discretion to avoid the most clientelistic or biased decisions, but rigid rules may not be the optimal solution. This is the argument of Wyplosz (2002): good institutional arrangements are more optimal than rules, because they enable the individual treatment of cases. However, this, again, reduces the level of commitment and credibility of the principle of equality between cases (as described in Barro, 1984), and it is likely to be the institutional environment that determines which leads to the most socially optimal outcomes: rules or institutions.

Cukierman and Meltzer (1986) argue that rules exist to prevent politicians from pursuing vote-maximising policies at the expense of socially optimal policies. They draw on the vast literature on electoral cycles in economic decision-making to show that discretion will lead to socially suboptimal policies and encourage vote-maximising, but that rules might control the cycle. However, Manasse (2007) argues that rules only temper the tendency for pro-cyclical policies in extreme good and bad states of the economy; in intermediate states, he argues rules encourage a countercyclical stance.

There is some consistency in the literature that if socially optimal policies are the goal, then rules are as a method preferable to government discretion. The option of institutions as controls of political behaviour and incentives is widely argued in the institutions literature,

but is not often immediately available, due to the long-term nature of institutional change. The rules and discretion literature appears to suggest that rules are a good potential short-term solution to the problem of a self-interested government and an uninformed public.

Both the aid dependency argument and the rules and discretion approach illustrate the importance of politics for public finance. Therefore, I expect these theories to shed some light on the question of Mexico's persistent economic divergence, and help outline the role of local political conditions in influencing public finance and economic growth in Mexican states.

3.7 Political competition

I argue above that Key's (1937) federal funding dependency theory and Kydland and Prescott's (1977) theory of rules and discretion are causes of Mexican inequality and the economic divergence of states. However, I also argue that formal and informal political institutions are an important catalyst for how these issues generate divergence.

I begin this review of political science literature with political competition, which I argue is one of the key issues in Mexican political history. The notion of political competition also gives a rationale to the assumption of politicians' self-interest, an assumption made by much of the literature as well as in this thesis.

The main streams in the political competition literature are spatial models and the median voter hypothesis. Both theories are widely applicable in other environments also, and especially in the realm of organisational economics and organisational behaviour. The paper generally credited for the median voter hypothesis (Black, 1948) explicitly states his aim is to "*contribute to the development of the theory of trade-unions, the firm and the cartel*".

The spatial theory was pioneered by Hotelling (1929) and popularised by Downs (1957), with the premise that in most markets, each seller will have a quasi-monopolistic position, and will be preferred by some proportion of the market. Both politicians and voters are attempting to maximise utility, and the "space" considered by the theory is concerned with "*issues, policies, programs* [and] *platforms*" (Balzer and Dreier, 1999:614). Osborne (1995:262) describes it as follows: "*In a two-candidate competition each candidate can obtain more votes by moving*

closer to the other candidate, so that a situation is stable only if the candidates' positions are the same." The model assumes single-peaked preferences and a situation where voters are not actors in the political process, and that candidates are only concerned about winning the election. These stipulations are restrictive, and ignore the time dimension present in the political game.

The spatial model is closely comparable to game theory, with its use of decision rules and interdependence, i.e. the dependence of a candidate's decisions on those of the other. Hinich *et al* (1973) take this point further and analyse voting as a zero-sum, infinite super-game.

In the spatial model, the variable of interest is the ideological distance between the candidates, and various issues relating to determinants of ideological distance can be considered with the spatial theory. Some such relevant issues for this research are the incentives for extremism (Osborne, 1995:288), relative certainties of the candidates' positions (ibid:289), incentives for growing the ideological distance between candidates (ibid:291) as well as the notion that votes for minor parties are wasted (ibid:293).

The seminal paper of the median voter theory is also considered to be Black (1948), which shows the similarity of the two theories. The main difference is that the median voter theory assumes convergence of candidates' positions to the median, whereas the spatial model refers to the equilibrium, which can be anywhere within the policy space. The median voter theory is summarised by Roemer (1994) and predicts that two candidates offering the same policies is the stable situation if there is full information on the distribution of voters.

Both the spatial and the median voter theory rely heavily on the informational aspects, and their conclusions can be altered by changing any one of the many assumptions: a unimodal preference distribution, full information, attitudes to risk, and rational politicians and voters. Downs (1957) argues that parties have incentives to cater to the irrational in the electorate; Shepsle (1972) continues that fully rational voters will, by the assumptions of the spatial and median voter models, not elect fully rational politicians. Hinich *et al* (1973:160) consider the difference between pure and mixed electoral strategies, where pure strategies refer to a fully disclosed set of preferences, and a mixed strategy involves presenting a pure strategy to voters but really altering it after the election. Shepsle (1972) considers the possibility that a candidate be equivocal or noncommittal in his views, and argues that the

risk-averse voter will be drawn to unequivocal candidates, whereas a risk-loving electorate is more difficult for candidates to convince, and this may encourage candidate ambiguity. Alesina and Cukierman (1990) show that in reconciling ideology with vote maximisation under imperfect information, ambiguity is the preferred option for politicians that wish to combine these two goals.

Candidate ambiguity is an issue intimately linked to voter information and asymmetric information in the electoral system. Shepsle (1972) argues that polarising issues encourage politicians to take ambiguous stances, and that this is an angle that discredits the median voter hypothesis. Further literature on polarisation, however, is scant and focuses mainly on the American political system (e.g. Poole and Rosenthal, 1984; Baldassarri and Gelman, 2008), despite the fact that polarisation is often cited as a problem in high unequal economies, especially in the Latin American context. In addition, the political polarisation literature is highly empirical and does not include extensive reference to theory, and has few links to the highly theoretical political competition literature. The theoretical foundations of polarisation are in the social cohesion literature, which is covered in detail by literature in sociology and social psychology (Friedkin, 2004).

Banks (1990) tackles this issue by altering the assumptions of the spatial model and analysing the effect of incomplete information on electoral choices. He does this by balancing the costs: those incurred by voters of finding out the distance between the advertised and real position, and those incurred by the electoral winners when the distance is eventually revealed. If the latter are larger, then the politician has an incentive to be honest, a situation leading back to the original models. If, however, politicians can expect an insignificant punishment for not keeping promises (as in the Mexican case with no possibility of re-election), the validity of both the spatial model and the median voter model can be questioned, and the importance of informational issues becomes clear.

Black (1948:34), in the seminal paper for the median voter theorem, considers the value of the median voter theorem to be that it brings a theory of group decision-making to economics. This, as well as the development of the spatial theory through theory of the firm, shows that the original intentions of political competition literature were to bring political considerations to economics, whilst keeping those aspects of economics that were popular for organisational research at the time. The emergence of issues that are not readily quantifiable, such as utility, expectations, commitment and credibility, are the

contribution of this literature to political science, and to some extent to widen the scope of economic theory.

Commitment and predictability issues are important in the context of Mexican politics, and one solution to the asymmetric information problem was found in Mexico between 1929 and 1997: the hegemonic party, and its various means of informing voters of likely outcomes, as well as ensuring that there were no surprises at the polls. The network by which Mexico was controlled is generally characterised as a clientelistic system. Therefore, I proceed to an analysis of the literature on clientelism, in order to examine the mechanisms by which such control might be exerted.

3.8 Clientelism

In this chapter, I have mentioned many times over the effect that clientelism has on various parts of the Mexican economy and political life, from household incomes and electoral behaviour to the incentives of politicians and the strategies of political parties. Of the themes covered in this chapter, this is perhaps the one that most requires a specific definition, not only because the literature is vast, but also because the term is very flexible, and together with its various synonyms has generated a number of definitions.

Kitschelt and Wilkinson (2007) summarise the clientelism literature in political science in three waves: principal-agent, statist/institutional, and comparative. The first wave focused on levels of economic development as a cause of clientelism, the second on political systems, and the third is largely a case-based literature, the one that recent analyses (e.g. Piattoni, in Piattoni, ed., 2001) criticise for conceptual and theoretical vagueness. As the literature developed from the 1960s to the 1990s, the political circumstances changed: dictatorships became rare and democratic electoral systems became the norm. This sea change in the conditions under study may be the reason for the move away from the principal-agent approach, which emphasised economic development, and the emergence of the comparative brand of clientelism literature, which focuses on the political.

Both the statist and comparative branches of clientelism literature make extensive reference to particular country cases. Another popular theme is particular ideologies and ideals, such as democracy and the market economy, and clientelism's compatibility with such ideals. Piattoni (in Piattoni, ed., 2001:9) laments that some "*conceptual stretching*" has taken place,

and a general definition of clientelism remains elusive. Kitschelt and Wilkinson (2007) attribute this to the broadness of the term, and to the notion that one definition is difficult to coin for such a large phenomenon. They argue that any type of clientelism that one might analyse at length is essentially a sub-case of the overarching concept.

Today, the terms *clientelism* and *corporatism* are often used interchangeably. Corporatism was the term initially used by writers of seminal pieces on the topic, such as Mihail Manoilescu and Andrew Shonfield, in the 1960s and 1970s, with relation to exchange between organisations. The term *clientelism* has also been used since the 1970s (e.g. Graziano, 1976 and references therein), but is generally used with reference to situations of power asymmetry. Ospina Peralta *et al* (2008:2922) follow a similar distinction: they consider that the client in *corporatism* is a formal organisation, but the term *clientelism* is best used if the clients are "*individuals and/or loose networks of association*", with an unequal power relationship. Keefer (2005) defines clientelism similarly, with reference to a power imbalance. Therefore, in this research, I use the term *clientelism*, because it is a better description of the situation in Mexico.

The primary focus of definitions of clientelism/corporatism in the political science literature is on the characteristics of the unit being influenced: a worker, a group of workers, an organisation, or an entire target audience (for a political idea or party). Specifically, whether the client is an individual or group is considered relevant by Landé (1973): he argues that especially the powers held by some groups compared to others determine the incentives of the patron. However, the ties between individuals or groups are not considered of importance in determining the relationships between patron and client, although both Graziano (1976) and Landé (1973) agree that these ties can be highly varied, as well as changeable over time.

Landé (1973:127) points out that the changeable and flexible nature of clientelistic structures means that clientelism is a persistent phenomenon in any type of political environment, and concludes: "*The study of the political process is deficient insofar as it fails to give attention to such structures*". Writers on institutional economics would agree that the study of incentives is relevant, and that clientelistic systems are long-lived and stable, as long as they have no powerful opponents. This argument is based on the theory (e.g. North, 1986) that individuals will always prefer to maximise personal utility over collective utility, given a positive cost of information.

Therefore, clientelism in its different forms is an enduring form of political collaboration. This is borne out by Graziano's (1976:169) argument that "*by preventing the legitimation of power, clientelism also hinders the institutionalization of authority*". In other words, clientelism not only prevents the effective functioning of political systems today, but also complicates the development of systems that might become efficient in the future.

Besides definitions, other issues in clientelism that writers have focused on are explanations for clientelism and its links to political system (authoritarianism) and political culture, and the social, cultural or historic characteristics of societies where clientelism is present. For example, Shonfield (1965:161) argues that when a political system (government, trade unions) attempts to interfere in the market, that some form of clientelism is bound to ensue. Schmitter (1979, 1989) cites later literature in response to Shonfield, calling into question the compatibility of the market economy, clientelism and democracy. Schmitter (1979) argues that clientelism is a form of intervention by non-market actors, and is therefore incompatible with a market economy. Similarly, he considers that (state, as opposed to societal) clientelism hinders democracy by emphasising the authoritarian nature of the state. On the other hand, Piattoni (in Piattoni, ed., 2001) argues that democracy improves the power of clients over patrons, weakening the clientelistic relationship. Either way, writers appear to agree that clientelism and democracy are to some extent incompatible in practice, and unlikely to function symbiotically.

A number of branches of literature from the social sciences have examined clientelism from different angles. In addition to political science, clientelism has been examined in the fields of anthropology, sociology and economics. The first two generally focus on network and group theories, and due to their weak relevance to the theories employed in this research, these views will not be considered in this chapter.

Economists primarily focus on the effect of informational issues on the incentives of political actors. Thus, economic explanations of clientelism follow from the basic texts of informational economics. Keefer and Vlaicu (2008) argue that governments whose campaign promises lack credibility, or who find credibility too costly to achieve alone, use political parties, trade unions and other organisations as intermediaries to improve their credibility in the eyes of voters. Robinson and Verdier (2002) consider the problem that a policy that attracts votes as a campaign promise is not convenient for a politician to

implement once in office. Their thesis is that offers of employment in the bureaucracy, or other favours as a result of a vote, can help incentivise a voter to vote correctly, or tempt an official to induce voters towards appropriate voting decisions.

These approaches present clientelism as a solution to the problem of asymmetric information in the electoral process: namely, that a voter cannot know how a candidate will behave once in office, and an officeholder cannot know if the voter will vote again even if promises are kept. The uncertainty of the electoral process creates an incentive for all sides to rely on mutual dependency, which is inherent in clientelistic transactions. Thus, each side agrees to the clientelistic framework in order to ensure a favourable outcome for itself, or to achieve what Robinson and Verdier (2002) call "efficient income redistribution". Robinson and Verdier (2002) argue that clientelism is most likely to appear where inequality is high and factor productivity is low, because an equal and highly productive system would prefer a fair, non-clientelistic regime, and clientelism would therefore not be a stable state.

Due to the comparative tradition in clientelism literature, country examples and case studies abound. There is an extensive literature on clientelism as practiced by PRI, Mexico's hegemonic party for much of the 20th century, the implications of this for political concepts such as democracy, and the economic issues such as clientelism in income redistribution. In Mexico, I argue the relatively new presence of "*exit options*" from the clientelistic PRI regime (Fox, 1994:182) has profoundly changed the incentives in the political system. In Chapter 2, I considered income redistribution programmes such as Pronasol, which was highly criticised for politically motivated distribution of government funds. I also examined the changes to the political system as clientelism went from automatic norm to a practice greeted with disapproval.

The definition of clientelism used in this study primarily follows the informational economics understanding of the concept, which helps understand the redistributive element of clientelism that is central to this research. However, the regional and socio-demographic undertones of this research call for some understanding of the political considerations. An understanding of how the different types of clientelism emerge with different client groups helps understand why the strategies of Mexican political parties varied widely in different regions and situations. The tenacity of clientelism in its different forms helps understand why, despite a widely recognised transition in Mexico towards the

end of clientelism and the beginning of true democracy, traces of clientelism are difficult to eradicate.

Therefore, our working definition of clientelism will be the following: *A practice by a political party or grouping to exchange favours or rewards for support, done for the purpose of broadening the duration or extent of their power and/or reducing that of opponents.*

A working definition is useful not only because of the wide array of definitions of clientelism in the literature, but also to underscore, again, the assumption of electoral motivations. Clientelism in this thesis is taken to mean only those actions that are expected to lead to electoral success.

3.9 Political competition and clientelism in Mexico

The story of PRI told in Chapter 2 is at the centre of most of Mexican political research. Casar (2000) states that prior to 1988, little literature was available on the role, internal structure and functioning of the Mexican Congress. Political researchers in Mexico focused heavily on the analysis of presidentialism to the extent of considering other alternation as having little significance (Hernández Rodríguez, 2003).

As shown in Chapter 2 with the "multiplicative" powers of the president as head of the hegemonic party, the de facto powers of the president began to diminish in the 1980s, along with the strength of the hegemony. Cansino (1995:62) summarises as follows: "*The two pillars of the Mexican political system are* presidencialismo, *or the power of the president to rule almost by fiat, and the hegemonic ruling party.*" However, this is a description that was valid only during the hegemony; Mexican presidentialism has never been strong, when compared to other presidentialist countries in Latin America.

Today, the legislative (Congress) is much more important than in the context Cansino (1995) was observing. (Casar, 2000) The judiciary has also grown in importance, when the Supreme Court's role in mediating between the executive and legislative grew (Zamora and Cossío, 2006). Therefore, also the focus of literature shifted from presidentialism towards a study of the Mexican parliamentary system and its particularities.

Langston (1998) argues that political competition in Mexico until 1988 – and the study of it – was essentially focused on intra-PRI competition for power. Various events indicate that PRI was internally divided. The earliest signs were the break-away by various prominent members in 1989 to form the PRD, and widespread accusations that President Salinas or another PRI insider commissioned the murder of progressive PRI presidential hopeful Luis Donaldo Colosio in 1994. After Colosio's death, the choice of Ernesto Zedillo for the PRI presidential candidate was decisive in determining the fate of PRI, although writers disagree on whether Zedillo himself was a divisive choice, or whether he was obligated to take actions that helped divide the party (as described in Langston, 2001). Ultimately, Zedillo's actions as president were effectively not supporting the hegemony, but rather endorsing democracy (Loaeza, 2008). Sartori (cited in Cansino, 1995) predicted in 1980 that in the presence of competition, PRI would find it difficult to maintain its unity; this appears to have been an accurate description of what would happen in the 1990s.

Estevez *et al* (in Wong and Friedman, eds., 2008) divide the PRI into two groups, left-wing and free-market, and argue that the dominating faction in each state was determined by the economic conditions in that state: poverty, inequality, employment, etc. Ames (1970) predicted that economic recession was the only scenario that would be able to threaten the PRI's position, which at the time of his writing was still extremely strong. Buendía Laredo (2000) argues that exactly this has happened: during both the hegemony and the transition, incumbent popularity has risen with economic booms and fallen with crises and recessions. Buendía Laredo's argument continues that the nature of political competition had not changed in the 1990s from the basic tenet that good economic policies would result in re-election, and that electoral behaviour therefore remained similar from the hegemonic era to the transition to democracy.

In addition to the economic explanation of electoral results, a political explanation from the turbulent conditions of the 1990s has emerged. Moreno (1999) agrees that voting behaviour did not change markedly through the 1990s, and considers that voters were not bound by ideology in their voting choices. Instead, Moreno (1999:73) argues, Mexican voters in the 1990s preferred to support the nascent democracy over any economic preferences: "[Democracy] *is a theme that will cede its central position, once the question of whether the step towards democracy should be taken or the authoritarian system upheld is no longer the point of dispute.*" Crow's (2005) econometric study of electoral behaviour in the 2000 and 2003 presidential and congressional elections found that voters from all kinds of party and

socioeconomic backgrounds had switched to PAN to support Vicente Fox for the first non-PRI president. However, many of these voters had split their ballots by voting for Fox in the presidential race, but for a PRI or PRD candidate in the simultaneous congressional or local elections. Further, in 2003, many of these voters switched again, away from PAN, in 2003, showing a pattern of voter reactions to the electoral situation, rather than directly basing votes on economic or social ideology.

In general, ideologies and parties have proven difficult to match to each other in the Mexican context, which may render the median voter and spatial theories difficult to apply. There are few ideological dimensions of Mexican parties on which authors agree. Moreno (1999:47) characterises the Mexican right and left during the transition as being resistant to change (right) and pro-democracy (left, although the author has put the word "democracy" in quotation marks, perhaps indicating that its definition is not clear or generally accepted).

Colomer and Escatel (2005) find it difficult to distinguish between the three major parties, if the distinctions are made on voter self-placement, indicating that most voters hover in the centre, are reluctant to label themselves clearly left or right, and therefore easily switch parties between elections. Camp (1999) states that over half of Mexicans do not identify themselves as supporting any particular party. In Britain, 67% of voters identified themselves as either Labour or Conservative in 2001 (Clarke *et al*, 2004:80). Pew Research (2008:np) gives the same figure of 68% for US voters in 2004 that identified themselves as either Democratic or Republican. Although in both countries the proportion of voters who identify strongly with a major party is declining, it is still far larger than in Mexico. In addition, in Mexico three parties together have managed to gather a far lower percentage of dedicated voters than have only two parties in the UK and the USA. This suggests that even with a wider amount of choice, Mexicans are reluctant to commit to a party.

This creates a very volatile situation in terms of electoral competition: voters in Mexico choose not only based on current and expected policies, but on such a long list of scales that it is difficult for a party to consistently please voters on all these scales. Moreno (1999:49) summarises these as follows: "*socialism–capitalism, democracy–authoritarianism, federalism–centralism, liberalism–conservatism, isolation–internationalisation, traditional culture–new culture*".

The disregard that parties have for strong ideological positions is also evident in political coalitions formed for electoral purposes. In some states, even PAN and PRD – which would be ideological arch-opposites in most countries – joined forces in the short term, in the 1990s, in an attempt to beat the hegemonic PRI. Even at the presidential level, a common PAN–PRD candidacy was attempted for the 2000 election, but this proved difficult in practice for the reasons outlined in Chapter 2, and ended with each party nominating its own candidate.

This apparently erratic behaviour by parties and voters also leads to problems in applying theories. Greene (2007:204) applies the median voter theory to the Mexican 2006 presidential election, but emphasises the limitation that candidates' positions are difficult to identify, and the only information available to do this are the self-placements of their voters. In an electoral environment such as the 2006 election where "*valence issues, such as the aptitude of the candidate and his honesty and credibility*" played a large part, voter self-placement can result in spurious placement of candidates on the scale. This clarifies the problem of Moreno's (1999) list of continuums quoted above. Voters might base their decision on one or more of these – or something else altogether, such as the candidate's perceived personality. This leads to a situation where signalling becomes weak, and the median voter and spatial theories of electoral behaviour are therefore difficult to apply.

Greene (2007) also notes other problems with the median voter or spatial theories. These are the fact that the Mexican president is chosen on relative majority in one round, and it is therefore possible not only to win with a relatively small percentage of votes (like Felipe Calderón's 37% in 2006), but also for the winner not to be a Condorcet winner. It is also possible that no one is a Condorcet winner, especially given the large share of swing voters in the Mexican electorate and the weakness of party ideology. The second problem is that the game-theoretical interdependency argument of both theories assumes two competitors, when in modern Mexico, the competition is between three large parties. Both of these caveats regarding electoral theories apply as strongly to most other elections, and especially to federal elections.

It is arguable that 70 years of one-party rule left Mexican voters unaccustomed to evaluating ideology, preferring to focus on the obvious issues where there was near-full information, such as personality, or likelihood of (clientelistic) returns from voting correctly. Candidates of the hegemonic PRI are, in retrospect, considered to have been under such

ideological control that their moves were fairly easy to predict (e.g. Langston, 2001). In response to a series of predictions from Mexican intellectuals in 2000 that PRI could not survive unless it underwent a fast and thorough change, Granados Roldán (2004:4) summarises the PRI's modus operandi and points out that despite lack of change, PRI remains an important actor:

> "*The great paradox is that … PRI did not dissolve, it does not lose all the elections, the dinosaurs* [hegemony hardliners] *did not disappear, it does not exert a responsible opposition, it has no ideological agenda or programme to speak of, and still, 28.5 million citizens in the last few years have cast their vote for PRI in local elections.*"

During the hegemony, PRI's careful strategy to keep all its clients happy led to an ideology where the main principle was to stay in power by not offending, and its ideological position was best characterised as "pro-PRI" or "pro-hegemony".

In addition to parties not being consistent between them on a traditional left-right ideology, a further explanation for the unpredictability of the ideologies of parties can be found in their internal inconsistencies. The circumstances surrounding the final decade of the hegemony created internal ideological tensions in various political groups, which in PRI and PRD have been well documented. Some of the PRI tensions were outlined above. For the PRD, González Suárez (in Larrosa and Valdés, 1998) describes an internal confusion for forming an ideology that would accommodate both the traditional Mexican left – the Mexican Revolution's ideal for a workers' government – and the new Democratic Current led by Cuauhtémoc Cárdenas, the party's nearly undisputed leader in the early 1990s. Hilgers (2005) argues that PRD remains a fractioned party, where different types of vaguely left-wing ideologies often clash.

PAN, on the other hand, appears to have experienced fewer internal rifts, perhaps resulting from its strategy of "*gradualism*" (Reynoso, in Larrosa and Valdés, 1998:349) and social conservatism. This was likely perceived as relative calm in an environment with an unstable economy, PRD calls for a social revolution, and PRI's methods of holding onto the hegemony having been heavily questioned since the election of President Salinas in 1988. The 1994 context of a serious political uprising in Chiapas gave PAN the opportunity to portray itself as the anti-violence, pro-institutional party (Reynoso, in Larrosa and Valdés, 1998). Alarcón Olguín (in Larrosa and Becerra, 2005:76) argues that PAN, to date, keeps to guidelines designed to "*avoid a greater dispersion in a growing party*",

which shows a conscious strategy to avoid the problems experienced by the other two large parties.

Thus, it appears that non-ideological electoral strategy concerns are heavily present in all the three major parties. The failure of parties to attach themselves to clear ideologies reduces the informational content that ideologies normally carry about future policies. In the absence of the possibility to re-elect the same politician, even choosing another candidate from the same party had no guaranteed results. During the hegemony, PRI attempted to mitigate this uncertainty at the presidential level, through the quasi-formal "dedazo" mechanism of each president handpicking his successor. However, no formal mechanisms have existed for members of Congress, governors, or municipal elections to reduce uncertainty.

As stated above, clientelism has been Mexico's (and especially the PRI's) answer to the problem of information. Clientelism in Mexico has taken a number of forms. The general public's vote has been courted with public infrastructure projects or other public goods, direct cash transfers, and vouchers for public services. Favours have been exchanged for funding between politicians, trade unions, businesses, and other organisations. Shefner (2001) adds to the list the limitations to any organised activity of groups not sympathetic to PRI, as well as strategic incorporation of dissidents into PRI activity to prevent a large-scale rebellion. Because of the huge extent of PRI's power in Mexican society during the hegemony, it is likely that most political and economic interactions in the country involved a brush with PRI officials.

Much of Mexican political science literature on clientelism focuses on the electoral variant (Fox, 1994). Examples of this can be found in the work of Graziano (1976), as well as the more recent works of Langston (1998; 2001), Schedler (2000), Shefner (2001), and finally Hilgers (2005) and references therein. Díaz-Cayeros *et al* (2007) define clientelism in Mexico in even more specific terms as discretionary private goods, whereas the same act of providing with public goods are termed as pork barrelling, a dichotomy of terms that is used in several papers by the same research group (e.g. Díaz-Cayeros *et al*, 2002). This approach is defended with the fundamental differences between the incentives given by public and private goods. Such precise definitions of clientelism are fairly rare in the Mexican (and international) literature, but it is more common to see the argument that the

electoral dimension, and provision of private goods in exchange for votes, is the key to Mexican clientelism.

Fox (1994) sets clientelism as the predecessor to democratic consolidation in the Mexican context, implying that the end of clientelism would mean the acceptance of democratic principles as default in politics. Many authors in fact seem to be writing about the absence of clientelism, which they term "democracy".

The arrival of democracy is linked to the demise of clientelism by a number of authors. Both Shefner (2001) and Díaz-Cayeros *et al* (2007) argue that the presence of social movements and NGOs is likely to reduce clientelism in the Mexican setting, a conclusion that presents clientelism as almost synonymous to autocracy. Montambeault (2008) presents a qualified objection to this based on a study of two Mexican municipalities, arguing that social movements can reduce clientelism, but only if they are apolitical; otherwise, they can serve to maintain clientelistic structures. This is a reasonable conclusion, considering that in the PRI era, NGOs and other organisations without fundamental political or ideological aims were often incorporated as clients (Shefner, 2001). However, it is possible that NGOs are able to improve the availability of information especially in rural communities, as well as inform voters of their options for both education and civic participation.

However, a caveat needs to be made for any conclusions on the nature of clientelism in Mexico. Landé's (1973) point that the institutional and political setting is essential to clientelism analysis should be revisited here. The Mexican political system in the hegemony was vastly different to what it is today. Cansino (1995) terms the Mexican institutional setting – from the final years of the PRI era, as the time of writing suggests – as a "*sui generis hybrid*": a system alone in its genre, difficult to compare with others. However, today, the Mexican political system is less peculiar, and rather easier to compare to other countries. Granados Roldán (2004) argues that even in the post-hegemonic era, the Mexican political system is affected by the legacy of the PRI system, and is not easily comparable to most other political systems.

This highlights not only that hegemonic PRI's brand of clientelism was different from those of other countries, but also that practices today are likely to be significantly different from those used in the PRI era. Therefore, any investigation incorporating Mexican political

history will necessarily have an element of comparative research between the hegemony, transition, and what some are now terming as democracy.

3.10 Institutional factors: Information and incentives

In this thesis, the broad assumptions are those of institutional economics, and especially the arguments of North. The key assumption I make is that decisions are not fully rational, and in accordance with the institutional economics framework, I take into account issues that neoclassical economics does not consider. The most important are the role of information and incentives in political decision-making. I give particular attention to the issue of transparency for three reasons. Firstly, it is an issue that is likely to distinguish between good and bad institutional environments in Mexico. Secondly, it is an issue that is likely to differ between federal and local level, which gives the opportunity to test for the influence of party politics and transparency. Thirdly, it is a pressing political issue in Mexico, which gives this work relevance.

The remainder of this chapter is dedicated to creating a framework for analysing the political setting in Mexico, and explaining the rationales that voters and politicians may have for their behaviour. I begin with institutional economics, which is a broad term for a number of issues related to incentives, information, and other mechanisms through which actors influence each other. Informational economics, further, illustrates the variety of difficulties that the institutional environment can pose for political and economic decisions. Both streams of literature challenge those assumptions of neoclassical economics that are most distanced from political realities, among these rationality and costless information.

Institutional and informational economics have been one of the primary ways in which political realities have been linked with economic decisions in the economics literature. The literature that challenges the concept of costless information, and therefore the notion of perfect information, consists of numerous theoretical studies on asymmetric information and reputation.

The seminal paper of the information economics literature is Akerlof (1970:488), who summarises the purpose of the classic "lemons" study as follows: "*a structure is given for determining the economic costs of dishonesty.*" This description crystallises much of the literature on institutional environments and, more specifically, informational economics. Akerlof

(1970) was the first to link the microeconomic problem of unobservable attributes of goods (quality) to unobservable attributes of the transaction (trust). This idea is built on the work of others such as Stigler (1961), who was one of the first to analyse the concept of reputation in the goods market.

These papers mark the first steps in recognising that the perfect information assumed in neoclassical models is often a fallacious assumption, and give a start to an understanding of how asymmetric information influences incentives in economic transactions. Stiglitz (2000) traces the literature, starting from the 19th century, and shows how the issue of information was largely ignored on a theoretical level until the last decades of the 20th century. The assumption was that prices would convey all relevant information, and the information available through prices – incentives and behaviours – was not considered (Stiglitz, 2000).

The concept of non-monetary incentives in economic transactions, then, is a product of the institutional economics literature. This literature stems from North (1986), who characterises the issue as one of contracting and, in order to make contracting credible, a need for monitoring follows. North (1986) gives the five "building blocks" of institutional theory as follows: utility maximisation by individuals, cost of measuring, cost of enforcement, institutional change, and views about the fairness of contracts. These, together, form a network of incentives, which explains behaviour that would be considered irrational in the predictions of neoclassical economic theory. These incentives may include any issue that is not considered in the economic model: personal preferences, political reasons, or (as per the institutional development argument) an expectation of how conditions might change as a result of behaviours.

New institutional economics, essentially, augments neoclassical theory by relaxing some important assumptions. Langlois (in Langlois, ed., 1986) summarises the emerging themes of new institutional economics as rationality, game theory and competition, and social institutions. Other authors, such as North (1986) and Eggertsson (1990) have described similar sets of themes.

North (1993) argues that neoclassical economics assumes rationality and the ability of actors to know what is in their best interest, in essence ignoring the need of individuals and societies to make decisions under uncertainty and under a host of socio-political norms and constraints. The concept of satisficing (a satisfactory but sub-optimal solution) is

prominently present in the assumptions of much of the institutional economics literature (Eggertsson, 1990), but would be difficult to accept for a proponent of a purely neoclassical approach. However, decisions under uncertainty are at the core of not only the institutional economics, but also, and especially, the informational economics literature.

The static character of neoclassical economics, a failure to consider the possibility of evolution for preferences and institutions, is another assumption that institutional economics challenges (North, 1993). A later addition to neoclassical economics, game theory, incorporates the time aspect to the study of incentives, in the form of repeated games, which are today an important part of the study of political economy and choices of political strategy. In addition to institutional evolution, the addition of the time dimension also introduces concepts of credibility and predictability (e.g. Manning *et al*, 2000). In a context such as Mexico's "transition to democracy", these issues are important to take into account when studying the reactions of actors to changing conditions.

The final theme, social institutions, is a socio-political addition to neoclassical theory. Schotter (1981, in Langlois, ed., 1986:17) defines it as follows: "*A social institution is a regularity in social behaviour that is agreed to by all members of society, specifies behaviour in specific recurrent situations, and is either self-policed or policed by some external authority*". Institutions have an informational function in society, and it is often not in any one actor's interest to act against the norm, especially in a repeated game. In this thesis, I analyse political decisions with a game-theory perspective, including the time dimension and the dynamic nature of new institutional economics.

There has been some debate about the relationship between the neoclassical and institutional frameworks. North (1978:974) argues for the conservation of the neoclassical framework:

> "*Neoclassical theory has made economics the preeminent social science by providing it a disciplined, logical analytical framework. To abandon neoclassical theory is to abandon economics as a science. The challenge is to widen its horizons to come to grips with these issues.*"

North (1978) sees institutional economics as an augmentation of neoclassical economics, and as conserving the scientific basis of the neoclassical paradigm. Hodgson (1988) counters that in the development of institutional economics, the development of the theoretical framework has been neglected, and the focus has been excessively on describing the functions of institutions. Neither view dominates: after the basic outline of the literature, as

outlined above, few theoretical developments have been made. A notable exception is Crawford and Ostrom (1995): a study of "a grammar of institutions" where various branches of literature on norms, rules, sanctions, aims and conditions are carefully dissected using an elaborate conceptual framework. Their conclusion, however, is mainly an affirmation of the complexity of the issue, and their definition of institutions: "*explanations for observed regularities in the patterns of human behaviour*" (Crawford and Ostrom, 1995:582).

A newer prominent branch of literature in the realm of institutional research is that pioneered by Acemoglu *et al* (2001, 2002, 2005): the origins and consequences of institutions and their relationship to economic development. This is the primary theme of current empirical research in institutional issues. The main conclusion from these studies is that once institutional factors are accounted for, the impact of geography and many other variables previously thought to influence economic growth, is diminished. Rodrik (2000) similarly finds that democratic conditions induce high-quality growth. Glaeser *et al* (2004) heavily criticise the mainstream methods, such as ordinary least squares, and remind that there is a correlation between institutional variables and growth, but that the causality may be that growth improves institutions, and not vice versa.

As recounted above, institutional factors as determinants of economic growth, via public finance, are a relevant theme here.

Therefore, it has been established in literature that institutional factors influence growth. I argue that this happens in Mexico mainly through public finance. The political institutional factors influencing public finance in Mexico can be roughly divided into two categories: the development from a hegemonic party to multiparty democracy (political competition), and the erosion of PRI's clientelistic support system (improved transparency). These trajectories are to some extent parallel: as I showed in Chapter 2, the entry of other parties into political life during the hegemony contributed to the eventual erosion of clientelism, and induced better monitoring of political actions. However, political competition and improved transparency should not be treated as identical developments. Even with credible multiparty competition at federal level, there are some states and municipalities where opaqueness remains in politics, sometimes despite the presence of various parties.

3.11 Conclusion

I believe the transition to democracy and transparency are key factors in explaining different types of political decision-making in Mexico, and public funding is a prime example of such a process. I began this chapter with the premise that whilst all states operate within the same federal framework and receive similar proportions of their income from federal sources, the wealthier states are consistently growing faster, causing divergence in the states' growth paths over time. In public finance literature, I found evidence that political conditions are likely to be a key determinant of how public finance influences wealth and growth, and I base my theory of Mexican public finance and growth on this evidence.

In summary, I argue that Mexican political conditions – the transition to democracy and increased transparency – have a substantial impact on public finance mechanisms. The structure of the federation, combined with engine-led rather than holistic economic growth, leads to a situation where dependency on federal funding slows down growth in the poorest states. In Chapter 4, I summarise my hypotheses, and provide more specific research questions as a basis for the empirical work in Chapters 5–6.

Chapter 4. Hypotheses and research questions

The central argument of this thesis is that the current Mexican public finance scheme, in the context of the Mexican socio-political conditions, does not help reduce the gap between rich and poor states. The first reason offered here is that the public finance system is constructed for a country divided into rich and poor, and is designed in a way that perpetuates the division. The second reason I suggest is that the type of funding intended to reward and stimulate economic activity (*participaciones*) is not spent on economic development where development is most needed, because there are no political incentives to do so.

I divide the argument into three hypotheses. Firstly, I show that there is a political influence in the distribution of Mexican public funds to states and municipalities, both before and after the new guidelines and legal obligations that have been introduced since 1998 for the distribution of federal money (I test this hypothesis in Chapter 5). The second part argues for a vicious circle in the use of public finances (the empirical parts of Chapter 6), and the third contends that the vicious circle affects poor states disproportionately because of the political system (also covered in Chapter 6).

The major contributions of this study are the intersections made between political and economic considerations. The Mexican political environment and Mexico's transition to democracy have been studied widely. A number of authors, as cited in Chapter 3, have tested Mexican subnational economic growth empirically and found divergence. However, these are rarely tied together. In this thesis, I intend to show how the Mexican political system and public finance maintain the socio-economic differences between the states.

4.1 Hypothesis 1

Clientelistic practices and political influences remain in the distribution of public funding in Mexico.

This is the historical part of the argument, as it provides a background for the institutional environment in Mexican public finance today, as a result of Mexico's unique political

history. A number of authors have shown that clientelism was present in Mexican public finance as late as the 1990s. I show that despite the presence of public finance distribution rules, politics still interferes to maintain the division into rich and poor states.

In Chapter 5, I sketch the changes in the distribution of public funds over time: the effect of the "transition to democracy" on distribution, the effects of improvements in transparency in some levels of government but not in others, and the consequences of different types of grants (particularly, earmarked and discretionary).

I particularly focus on political competition and the presence of multiple parties. The rationale for this hypothesis is to show and isolate the effect of the political environment during the "transition to democracy". I argue that Ramo 33 is no more effective than previous programmes in reducing the final economic inequalities between states and regions. One of the well-documented reasons for the failure of previous programmes was the widespread political motivation for public finance distribution since the early 1990s. My aim here is to test whether such political influence is still present.

I argue that one of the main determinants of public finance is the political distance between the distributor and recipient, measured in terms of party affiliation. However, I also argue that this clientelistic effect has diminished with the increase in multiparty participation in the political process. Therefore, electoral statistics are a key source of information for this.

Question 1. Are there differences between spending in hegemony and spending in a multiparty set-up?

Previous literature suggests that Mexican governments, especially from the PRI era, have a history of electorally motivated public spending: money tended to be directed where it was most likely to support the desired election results (e.g. Díaz-Cayeros *et al*, 2007). However, after the end of the national hegemony, it is not known whether the practice continues – especially in states or municipalities where there may be an effective local hegemony by PRI or another party.

Theory contests that improved information should lead to a better adherence to the rules, and fewer abuses of the system. Therefore, it would be logical to assume that the presence of various parties aided in reducing politically motivated spending, and therefore brought spending down.

I test this theory in Chapter 5 with state- and municipal-level data on federal elections, governors, members of the 32 local (state) congresses, and mayors. I expect to see more politically motivated spending where hegemonic practice continues, or where the same party controls both the level of government awarding the grant (e.g. federal government) and the recipient level (e.g. state government).

Question 2. Are there differences between PRI and other parties in terms of spending?

In Question 1, I addressed how the arrival of political competition affected the political motivations in public spending. With Question 2, I tackle another dimension of the Mexican "transition to democracy": is politically motivated public spending a PRI specialty, or are all the parties equally willing to use public finance as an electoral tool? Therefore, in addition to seeing whether a politically competitive Mexico still uses this method, I examine whether it is only particular groups that do, or did.

Again, this is analysed through data on political competition. My expectation is that spending in PRI-controlled states is indeed higher than the spending of equivalent states under the control of other parties. This is based on two main points. Firstly, PRI had the necessary "political infrastructure" in place to continue the practice: it was informally institutionalised. Secondly, the platform of PAN as an institutional reformer for much of the 20th century (Nacif, 2007), and the criticism that PRI received from the opposition for politically motivated public finance programmes, would make it more difficult politically for PAN to be caught in similar actions. It is doubtful that PRI alone would engage in such activities, but I expect to find PRI engaging in them to a much greater extent than PAN or PRD.

Question 3. Is transparency greater in federal than state funding decisions?

Due to the federally imposed reforms of the Mexican political system in the 1990s, transparency at federal level has improved in recent years. However, the federal government is unable to impose similar reforms on the decision-making processes of "free and sovereign" states, as stipulated by the federal Constitution. As states control their own electoral and legislative processes, so they also control any issues related to the

transparency of state governments. The federal government cannot induce a state to improve transparency, and transparency must therefore be a local initiative.

I argue that the political system at the federal level is more transparent than at local level, because it is not in the interest of state politicians to improve transparency. The incentives are aligned against voluntary transparency on both the personal and state level. On a personal level, it is not in the interest of a vote-maximising politician to call for transparency. On a state level, if only one state makes a transparency initiative and reveals information that other states do not, it risks losing a competitive advantage to politicians from less transparent states. This risk could especially influence presidential elections, where candidates typically come from different states.

Question 4. Do earmarks work to reduce the political motivations in public finance?

I focus on two types of federal funds: one earmarked (*aportaciones*) and the other discretionary (*participaciones*). *Aportaciones* are interesting, because their conditions are clearly laid out in the Law for Fiscal Coordination (LCF), and any deviation from purely socioeconomic distribution is likely to be a politically motivated act.

Participaciones, on the other hand, are distributed on the basis of economic growth and performance, and their end-use is fully discretionary. They are therefore easier than *aportaciones* to spend in support of personal, clientelistic or electoral goals, and thus, any patterns in *participaciones* spending should be considered as evidence of politically motivated spending on behalf of the federal government.

Therefore, I expect some association between *participaciones* and political affiliation that may not be present between *aportaciones* and politics.

4.2 Hypothesis 2

Poverty and federal funding form a vicious circle.

The key argument in Chapter 6 is that there is a vicious circle in the political system, and the chapter mainly consists of empirical testing of this circle. Firstly, I ask what determines *aportaciones*, and hypothesise that poverty should be one of the key determinants, as per the Ramo 33 rules. Secondly, I ask what elements of public finance are most significant in determining the wealth of a state.

Ramo 33 stipulates that *aportaciones* funding should be distributed on the basis of poverty incidence in each state. However, divergence continues to occur between Mexican states, leaving the poor states with an economic standing where catching up to the wealthier states continually becomes more difficult. Furthermore, in addition to little improvement in relative poverty, there have also been few poverty-reducing effects attributable directly to this funding, and few changes in poverty figures around the approximate time of its implementation in 1998.

Figure 4.1 The poverty – federal funding – poverty circle
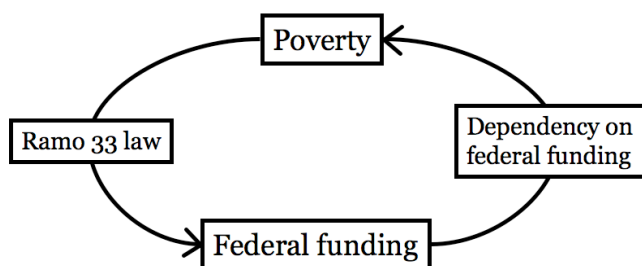
At its most basic, the circle theory states that poverty leads to federal funding, which in turn maintains poverty. This gives a circle whereby states in receipt of a large proportion of their income in federal funds tend not to use those funds in a way that would improve their situation.

Question 5. What are the main determinants of aportaciones? Is poverty relevant?

This question is mainly intended to clarify whether *aportaciones* are distributed according to their distribution formula. The formula dictates that *aportaciones* funding should only be determined by various aspects of poverty in the states, as well as previous levels of *aportaciones*. If the distribution formulae are followed, poverty should appear as one of the main determinants of *aportaciones* levels.

Question 6. What are the main determinants of the poverty levels of a state? What is the role of public finance?

This question is intended to mirror Question 5 to establish the second half of the circle, and to test whether federal funding in fact contributes to maintaining poverty. Following Key's (1936, cited in Cho and Wright, 2007) theory that dependency on federal funding exacerbates poverty, I expect to find that the proportion of a state's revenue that comes from federal funding is a significant determinant of poverty. In the analysis, I break federal funding down to its components, *aportaciones* and *participaciones*, and expect both to be significant.

Rodden (2002) makes a similar argument based on a general inability of transfer-dependent communities to attract finance flexibly, both due to their practical circumstances (poor communities, low investment, low and inflexible economic activity such as farming) and to higher risk ratings and therefore higher cost of capital. It is a two-way relationship between poverty and federal funding dependency, and I analyse it as such.

Dependency on federal funding correlates heavily with state income in Mexico. I theorise that this is due to the inefficiencies in public finance caused by the suboptimal incentive structure in transfer-dependent states.

Question 7. Do spending rules aid in directing spending to socially optimal ends?

The literature on fiscal rules and fiscal discretion, starting with Kydland and Prescott (1977), has reached a consensus on the superiority of rules over discretion in fiscal policy to achieve a socially optimal outcome. Effectively, the regulations on *aportaciones* are the only

fiscal rule in Mexican public finance, and therefore, these spending rules should produce a better social outcome than similar amounts of discretionary spending.

However, most writers on rules acknowledge that in order to function, rules require the fulfilment of certain conditions, such as sufficient monitoring and enforcement. The focus of this study is on the conditions that influence the functioning of this rule. I also test the validity of the hypothesis by comparing the effects that *aportaciones* and *participaciones* have on poverty, and expect to find that *aportaciones* are more effective in reducing poverty than *participaciones*.

4.3 Hypothesis 3

The Mexican political system contributes to maintaining the vicious circle, especially in poor states, leading to low state economic mobility.

This hypothesis combines the findings from Chapters 5 and 6. I present characteristics of the Mexican political system which, intertwined with the structure of the economy, fiscal centralisation and the public finance system, lead to continued divergence of rich and poor states.

I base the analysis on the notion that *aportaciones* and *participaciones* are both necessary, because each caters to a particular section of Mexico. Each type of funding is necessary but not sufficient on its own to keep different socio-economic groups happy. *Aportaciones* are intended for poverty reduction, established as a means to ensure that poor states allocate funding to reducing social marginalisation. This is enforced with a spending rule. However, in order to maintain the wealthier states in the voluntary fiscal centralisation pact, they needed assurances of continued federal support. Therefore, *participaciones* are essential to ensure the continued participation of the net payers. The question of why both types of funding are needed is key to understanding why the undesirable effects of the dual funding are difficult to remove: neither funding can be terminated as such.

Question 8. Do federal funding recipient states have a preference to expand federal funding?

In Mexico, the federal government collects 95% of all taxes, in contrast to the average of other countries, which is 30% (Díaz-Cayeros, 2004). Therefore, compared to most other

countries, Mexican federal funding has relatively little space to expand, as it is already at an extreme. However, based on Key's argument that recipients prefer to expand funding, I argue that Mexican states have a preference to expand particular types of funding.

According to Downs' (1957) vote-maximising theory of political decision-making, policies are set so as to maximise votes, and Niskanen's (1971) theory posits that bureaucrats attempt to maximise budgets. Based on these theories, I hypothesise firstly that states will work to maximise the funding they receive from the federal government, and secondly that the funds will be spent in ways that are seen to maximise votes.

Therefore, I adopt Key's argument that recipient states prefer to expand federal funding. I combine Downs' (1957) and Niskanen's (1971) arguments for the Mexican case: I believe states will work to maximise the kind of funding that will win the most votes. In the case of poor states, the most popular funding will be that which allows for helping large groups of poor voters: this is likely to be *aportaciones*. Díaz-Cayeros *et al* (2007) confirm that two-thirds of states use an alternative *aportaciones* formula, provided as a contingency measure for states with insufficient statistical information for the primary formula. This shows that poor states take all possible measures to maximise their funding, regardless of the impact it has on transparency. In wealthier states, vote-maximisation is a more diverse strategy, from job creation to institution-building. Therefore, the kind of funding that permits more flexible spending is preferred: *participaciones*. I thus argue that federal funding recipients have a strong preference not only to expand federal funding, but that the aim of this is to maximise votes.

Question 9. What is the effect of having the two types of public funding?

I argued above that state governments aim to maximise votes by expanding federal funding. I also argue that in Mexico, this leads to a division between states, where divergence will easily occur. In Chapter 6 I argue that the system of two kinds of federal funds, earmarked *aportaciones* and discretionary *participaciones*, combined with a populist, short-termist political system, effectively creates incentives for states governments to effectively profile themselves as either wealthy or poor.

I make the argument that the combined dynamic of Mexican politics and the public finance rules leads to a situation where there is little incentive for a poor state to attempt to become wealthy.

Chapter 5. Political influence in public finance

The first hypothesis under examination is Hypothesis 1, on the impact of political factors on public finance in Mexico. I argue that despite attempts by the federal government, political influence remains in the public finance system. This argument will later be used to show the precise effects of different political influences, and show how politics interferes in the distribution of federal funding to produce unequal distribution of funds to states and municipalities.

After the theories and groundwork in Chapters 2–4, this chapter and those that follow are dedicated to examination of the statistical evidence. Using a large database of political and economic data put together for the purpose of this empirical analysis, I consider here various links between the relevant variables to come to conclusions about a number of topics covered in Chapters 2 and 3.

Hypothesis 1: Clientelistic practices and political influences remain in the distribution of public funding in Mexico.

I tackle this question in terms of the following research questions, detailed in Chapter 4:

Question 1. Are there differences between spending in hegemony and a multiparty set-up?
Question 2. Are there differences between PRI and other parties in terms of spending?
Question 3. Is transparency greater in federal than state funding decisions?
Question 4. Do earmarks work to reduce the political motivations in public finance?

The objective of this chapter is to establish the influence of the political system in various elements of Mexican public finance. By "influence" I refer to issues such as transparency, adherence to formal rules and the enforcement of rules, and the presence of clientelistic tendencies in public finance decisions.

The main political dimensions that I consider in this chapter are detailed in Table 5.1, with a rough division into how I believe each influences transparency:

Table 5.1 Dimensions of the Mexican political system

Transparency less likely	Transparency more likely
Hegemony	Multiparty system
No political competition	Political competition
PRI in power	Old opposition parties in power (PAN, PRD)
State/municipal level	Federal level
No spending rules on public funding	Spending rules on public funding

In this chapter, I consider the influence of these factors on Mexican public finance. The main considerations are the total spending figures of states, the sizes of various spending elements, and their relationship to the socio-economic conditions in the different states.

In this chapter, the focus is primarily on the general overview of states, and here I do not for the most part discriminate between data points based on their identity (state and year). The reason for the treatment of all data points equally is to find any general trends that are valid for Mexican states over time, independently of the political and economic changes that have taken place over time. Where attention is given to a specific state, it is for reasons of sharpening the analysis, or where there is reasonable suspicion that the distribution of data points and the interpretation of trends cannot be assumed to be independent of local conditions.

I begin with a simple overview of the development of state spending over time and under different political conditions.

Figure 5.1 Growth of spending per capita, by state, adjusted for inflation
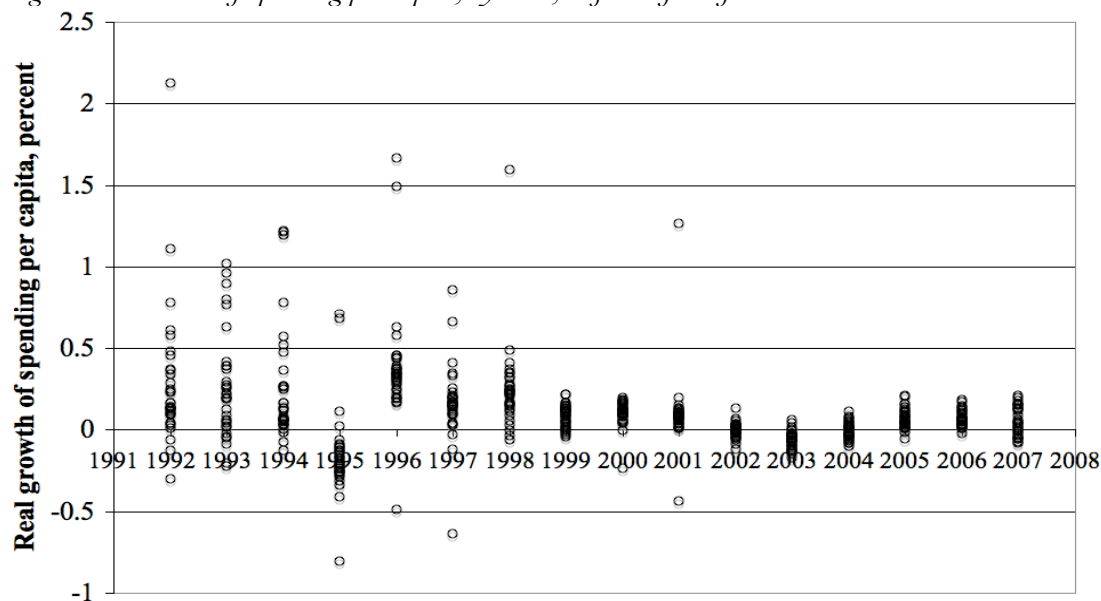
Source: Public spending and population from INEGI/EFIPEM, inflation from World Bank WDI.

This figure summarises the political tendencies of Mexican public spending in general. Figure 5.1 shows that the growth of public spending has been regularised since 1998, and large differences between states no longer occur. In the early to mid-1990s, the growth rates in the public spending of states were quite disperse, but the range has diminished after 1998. This indicates that reforms in the 1990s, which include Ramo 33, have curbed the diversity of the 1990s between different states. Ramo 33's contribution to this effect is most likely a result of the grandfathering elements especially for *participaciones* but also for *aportaciones*, where the most important determinant of future receipts is past receipts. I return to this point later.

The trends of the growth rates of state spending, and especially a break in 1998, are clear from Figure 5.1. However, the dispersion of the spending of different states is not. I depict this in Figure 5.2, with state spending per capita. These data are not adjusted for inflation; however, inflation is equal in all states, and only varies between years. Figure 5.2 therefore shows an accurate picture of the increased dispersion in the spending per capita of different states.

Figure 5.2 State spending per capita, 1991-2007

The dispersion between states in terms of spending has happened in both spending per capita and spending/GDP. Table 5.2 shows the same trend, with standard deviations of the states' spending increasing steadily:

Table 5.2 Standard deviations of spending variables

Year	Standard deviation Spending per capita N=32	Standard deviation Spending/GDP N=32
1991	328.19	No data
1992	435.42	No data
1993	513.51	2.9 %
1994	549.22	3.6 %
1995	582.55	4.6 %
1996	761.15	5.0 %
1997	949.68	3.3 %
1998	1157.02	4.4 %
1999	1315.21	4.6 %
2000	1483.98	5.1 %
2001	1250.86	5.1 %
2002	1306.53	5.2 %
2003	1405.39	5.5 %
2004	1602.82	5.6 %
2005	1884.71	6.0 %
2006	2063.15	6.2 %
2007	2861.91	No data

The dispersion can be due to a number of factors, but to some extent it is likely to reflect economic divergence and the increased economic activity in some states without the benefits spilling over to others. This can be expected in federal countries with state economic sovereignty, but unexpected in a country like Mexico, where the vast majority (95%, according to Díaz-Cayeros, 2004) of tax income is centralised and distributed by the federal government. These numbers are tentative evidence that the benefits of economic growth and growth in public spending are not being distributed equally, but the benefits remain in the richest states.

The fact that there has been dispersion leads to the first main concern of this chapter, which is establishing the spending patterns in different political settings. The literature on Mexican public finance gives rise to a suspicion that the hegemony may have used public finance as a vehicle for electoral support (with the particular example of the Pronasol programme as outlined in Chapter 2). Therefore, the question arises whether political conditions in different states generate differences in the use of public funds.

5.1 Do state governments spend less under high political competition?

I begin by addressing the first research question set forth in Chapter 4: Are there differences between spending in hegemonic situation and a multiparty set-up? By hegemony here, I do not mean PRI hegemony in the historical sense, but instead a local *de facto* hegemony. Díaz-Cayeros *et al*'s (2007) definition of hegemony is a state or municipality that consistently gives over 65% of votes to any one party. However, this definition has two limitations. Firstly, a 65% vote share to one party has not occurred at state level in a Chamber of Deputies election in Mexico since 1991, but occurs frequently in 1991. This suggests that the 65% cut-off is designed specifically to make the historical break in the early 1990s, which suggests that the 65% figure was appropriate for defining the limits of the historical PRI hegemony, but less appropriate for analysing situations where real competition for a win is very low despite vote shares as low as 40%. The Díaz-Cayeros measure limits itself to situations where there is really no meaningful political competition, and loses the nuance that can be extracted from the intensity of the political competition.

For example, it is not the same to have a 45–45–10 split between three parties as it is to have a 45–30–25 split: in the first example the two leading parties are nearly equal and

there is a credible threat of losing an election, whereas in the second example the party with 45% is unlikely to lose unless the other two forge a tight alliance (which is rare between the "big three" parties in Mexico). Therefore, I introduce a simple measure that includes the competition between the two largest parties: the difference between the winner's and runner-up's vote shares in terms of percentage points, which I term "winner safety".

In this chapter, I adopt two measures of political competition. The first is Laakso and Taagepera's (1979) indicator of Number of Effective Parties, which I detail below. The second is the "winner safety" measure. Like the Effective Number of Parties indicator, it is calculated from the percentages that each party gains, either in terms of votes cast or seats available. Measures similar to the winner safety indicator have been used in the past by various authors.

Effective number of parties (ENP) is a political competition indicator, devised by Laakso and Taagepera (1979) and widely used thereafter. It is calculated as the effective number of parties $N = 1 / \Sigma\ p_i^2$, where pi is the proportion of either votes or seats in a particular governing body, given to each competing party. N expresses the number of parties that are present in the political competition in each state.

The use of the ENP indicator is widespread, and has been applied in Mexico by a number of authors, who mainly use the measure to establish the absence or presence of hegemony: "*legislative pluralism*" (Solt, 2004), and how close the two leading parties are to each other (Takahashi, 2005). Both types of measures tackle the Mexican key problem of hegemony. On the other hand, in the Indian context, writers using this measure tend to be more concerned with the number of parties in the entire political field, in the context of ethnic or caste fractionalisation, as well as a greater presence of local parties. Khemani (2007) finds that the usefulness of ENP is diminished in the presence of a large number of small (or local) parties. Similarly, Chhibber and Nooruddin (2008) use ENP as an indicator of party fragmentation, and Saez and Sinha (2009) also refer heavily to local parties.

In this study, for federal elections (presidential and Chamber of Deputies) this is the vote share, and for local elections (state congress and mayors) it is the number of seats in each state. Vote share is used where the number of seats cannot be used, or is misleading. Presidential elections can only be measured by way of vote share (because there is only one

seat). For Chamber of Deputies elections, the vote share is more reliable as an indicator of the electorate's political preferences, because of the complexity of the Mexican mixed selection method of relative majority, first minority, and proportional representation.

On the other hand, most local elections use simpler, first-past-the-post methods to select the winning candidates for state congress, so the vote share and seat number are likely to yield very similar results. This is also the case for mayors within any given state: the proportion of votes and the number of municipal heads within a state are likely to be similar. Thus, either measure would be conceptually valid. However, the availability of data on vote shares at local level is sparse, and would reduce the dataset markedly. Therefore, I have used the seat number for the local elections, which maximises the available dataset. The choice to consider the two types of measurement (vote shares and seat numbers) in one study is not without precedent: Chhibber and Nooruddin (2004) use both, as do Saez and Sinha (2009).

To establish the distribution of political competition within Mexico, I begin by considering the distribution of political competition and whether there is truth to the assertion that poor regions are more vulnerable to political control by one party. The measure of political competition here is winner safety: a high value denotes a large difference, absence of real political competition and thus high safety, whereas a low number denotes the low safety of a neck-and-neck race and close win. Saez and Sinha (2009) utilise a similar measure, terming it "*margin of victory*".

I first consider spending/GDP against political competition in Chamber of Deputies elections.

Figure 5.3 Political competition (Chamber of Deputies) and spending/GDP, 1993-2004
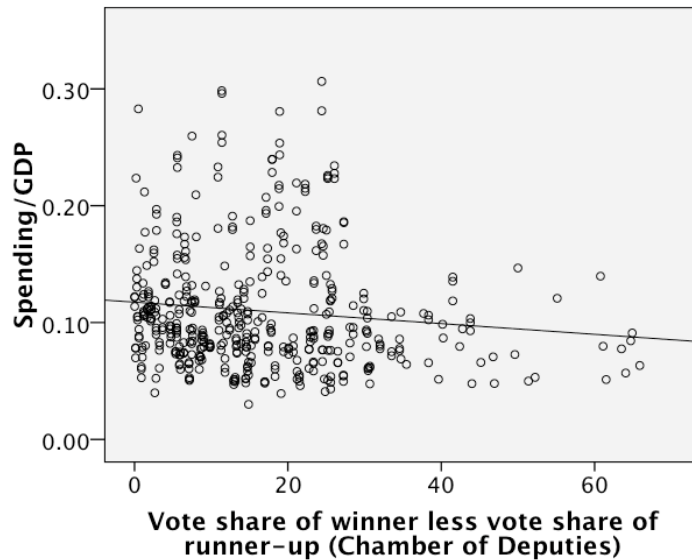
Source: IFE and INEGI/EFIPEM.

Here it appears that spending is low in states where the gap between winner and runner-up is large (a difference of over 30 percentage points, e.g. a 65–30–5 split in votes for three parties). If the gap is small (less than 20, e.g. a 40–30–30 split), spending can be either high or low. No data points were found in the top-right quadrant of the diagram, meaning that high spending does not generally coexist with very low political competition. This suggests that spending is competed up as political competition intensifies, and does not support the hypothesis that spending is high in unmonitored environments. This is in line with Sáez and Sinha's (2009) hypothesis that a large margin of victory means a local government is less likely to invest in public services.

In presidential elections, the finding is similar.

Figure 5.4 Political competition (presidential) and spending/GDP, 1993-2004
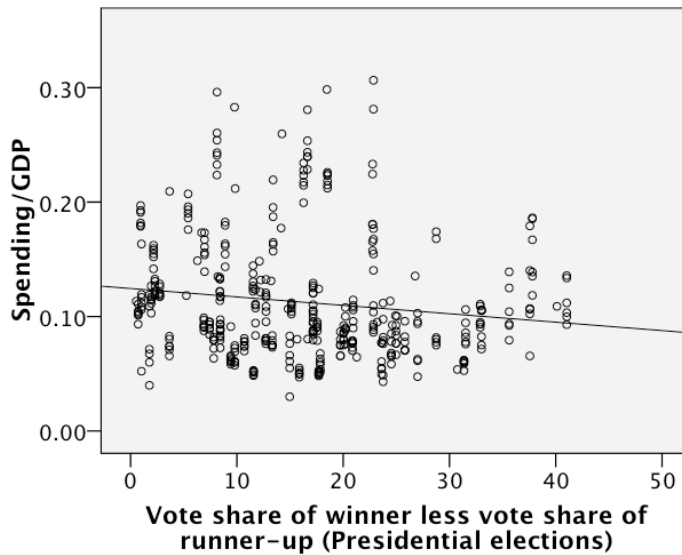
Source: IFE and INEGI/EFIPEM.

Therefore, on the federal level, it appears that a multiparty set-up will spend more on average than a local hegemony. This is consistent with a rent-seeking and opaque local hegemony where political actors pocket a sizeable proportion of public funds, versus a competitive, more transparent system where public funds are spent on public services and accounted for. I hypothesised that the presence of multiple parties should make public spending more efficient and therefore lower, but in light of Figures 5.3 and 5.4 it is more likely that multiple parties in fact reduce the leading party's rent-seeking behaviour by providing a monitoring mechanism.

5.2 Was PRI a big spender? Spending behaviour by party

I hypothesised in Chapter 4 that although PRI is most likely not the only one to spend with political motivations when in power, it is likely that PRI leads the others in politically motivated spending. I argued this is mainly because PRI continues to have some of the hegemony-era structures in place that enable this, and the cost of politically motivated spending is therefore lower.

I tackle this question through public finance numbers with information on the political affiliation of each data point (each point represents a state in a particular year).

Figure 5.5 Spending/GDP and party preference in recent presidential elections
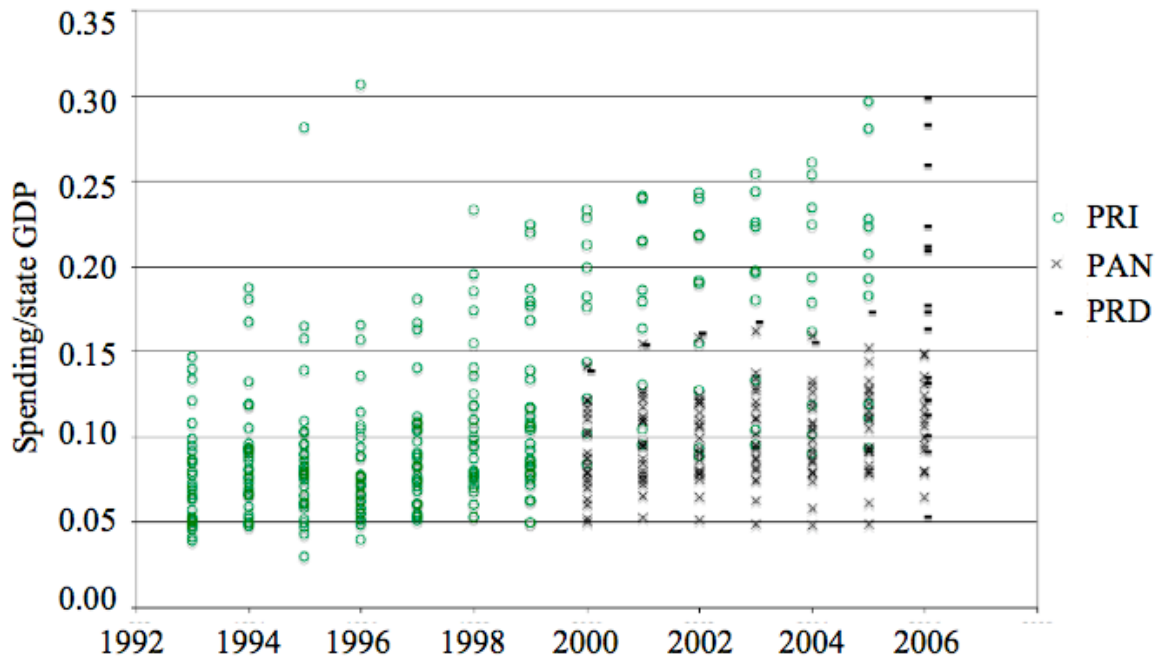
Figure 5.5 above depicts the spending/GDP measures in each year and distinguishes between states where the winner of the previous presidential election in that state had been from PRI, PAN or PRD. It appears that states that support presidential candidates from PAN or PRD tended to have lower spending/GDP, with the exception of the year 2006.

To confirm, I conduct a two-sample t-test for the year 2000, with a comparison of the spending levels of PRI and its major opposition party PAN, and then run the same analysis for 2006 with PAN and PRD. I only include one year for each, because there are only two presidential elections with sufficient data points for two parties: PAN and PRI in 2000, and PAN and PRD in 2006.

Table 5.3 Did PRI-controlled states spend more than PAN-controlled states in 2000?

Level	Variable	μ_{PRI}	S_{PRI}	N_{PRI}	μ_{PAN}	S_{PAN}	N_{PAN}	t-stat	Interp.
President	Spend per cap	5488	1512	10	4918	1484	21	1.04	Not signif.
President	Spend/GDP	0.17	0.05	10	0.09	0.02	21	**4.48***	**PAN lower**
Deputies	Spend per cap	4837	1434	18	5303	1495	12	−0.85	Not signif.
Deputies	Spend/GDP	0.14	0.06	18	0.08	0.02	12	**3.47***	**PAN lower**
St Cong	Spend per cap	5462	1357	17	5218	1986	6	0.28	Not signif.
St Cong	Spend/GDP	0.13	0.06	17	0.11	0.03	6	1.21	Not signif.
Mayor	Spend per cap	4929	1118	15	6885	1961	5	**−2.05***	**PAN higher**
Mayor	Spend/GDP	0.12	0.05	15	0.13	0.06	5	−0.44	Not signif.

For comparison, I run the same analysis for PAN and PRD in 2006. These were the dominant parties in the presidential election in 2006 (PRI did not win any states), and therefore this analysis is likely to show whether it is generally the leading party that spends more, rather than PRI specifically.

Table 5.4 Did PAN-controlled states spend more than PRD-controlled states in 2006?

Level	Variable	μ_{PAN}	S_{PAN}	N_{PAN}	μ_{PRD}	S_{PRD}	N_{PRD}	t-stat	Interp.
President	Spend per cap	8682	1317	16	9921	2499	16	**−1.75***	**PAN lower**
President	Spend/GDP	0.11	0.03	16	0.17	0.07	16	**−3.15*****	**PAN lower**
Deputies	Spend per cap	8629	1324	16	10300	2593	9	**−1.81***	**PAN lower**
Deputies	Spend/GDP	0.11	0.04	16	0.18	0.08	9	**−2.46****	**PAN lower**
St Cong	Spend per cap	8849	1972	8	10065	2834	6	−0.90	Not signif.
St Cong	Spend/GDP	0.11	0.02	8	0.17	0.10	6	−1.45	Not signif.
Mayor	Spend per cap	8313	1440	7	9913	1740	7	**−1.87***	**PAN lower**
Mayor	Spend/GDP	0.11	0.03	7	0.16	0.08	7	−1.55	Not signif.

The conclusion here is that PAN's spending compared to PRI and PRD tends to be lower in both per capita terms and as a percentage of GDP. This means that the result is not sensitive to GDP only (where wealthy states have low spending/GDP just because GDP is high). As these results only cover one year, they are also not sensitive to the upward trend in spending figures. It therefore appears that PAN-controlled states have lower spending than states controlled by other parties.

Also, it appears that the standard deviations are higher between PRD states than PAN states in 2006 (Table 5.4), which suggests that PRD's states are a less uniform group. This is a logical conclusion, especially given that PRD controls not only the poorest states of the south, but also high-performing states like Distrito Federal and Campeche. PAN, on the other hand, controls few poor states, which keeps the standard deviation small in the PAN group of states. I would expect the same to hold for 2000 and for PRI to have higher standard deviations than PAN; however, this is not the case. There is no evidence in Table 5.4 that PAN controlled a more homogeneous group of states in terms of spending. In other words, PAN won a less diverse group of states in 2006 than it did in 2000. This may be an indication of the solidification of PAN support and development of a core: a transition from "the party of democracy" to "the social conservative". This would indicate a shift from the old PAN institutional focus towards tangible political issues.

Some states that give PRI the majority in elections for the Chamber of Deputies tend to have slightly higher spending/GDP values than the rest (especially Chiapas, Tabasco and Oaxaca). However, the smallest spending/GDP also tends to be found in some states where PRI has been strong in Chamber of Deputies elections (e.g. Yucatán and Durango). All these states are in the poorer half of Mexican states, but they occupy both extremes of public spending. The tendency for poor states to have very diverse public finance positions is clear in Figure 5.6:

Figure 5.6 Spending/GDP and GDP per capita, 1993–2004
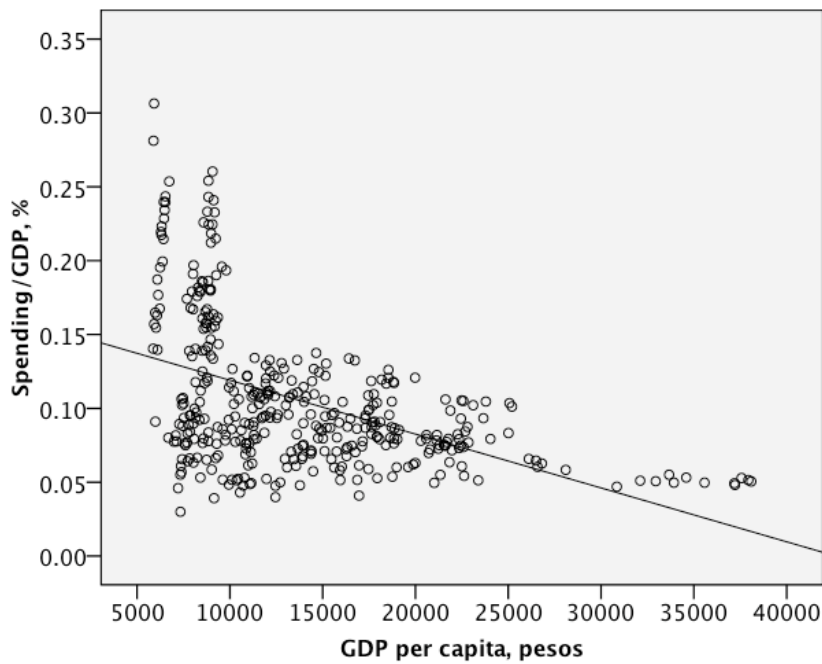
The major conclusion from Figure 5.6 is the L-shape of the pattern. Middle-income and wealthy states tend to fall in the category of 5–10 per cent of state GDP spent on public expenditures. It is evident that the richest states, with GDP per capita of 20,000 pesos or higher in Figure 5.6, are consistently spending 10% or less of state GDP on public funding. (Every data point over 30,000 pesos here represents Distrito Federal in different years.)

However, the striking point in this diagram is the diversity among the poor states of between 5,000 and 10,000 pesos in GDP per capita, who range from the equivalent of three per cent to over 30 per cent of state GDP spent on public funding. The "L" shape is present throughout the entire period from 1993 until 2004.

The large range of spending/GDP in poor states is persistent, but the gaps among the wealthier states have narrowed, showing a tendency by the wealthier states to converge to similar values, whilst the poor remain diverse. This can be an indicator not only of varying economic circumstances, but of varying political ones. Among the poor states, low spending/GDP figures are likely to result in states where GDP is high but public services are not (Campeche, Quintana Roo), whereas very high spending/GDP results are likely in poor states with little industry (Oaxaca, Chiapas).

This also illustrates the differences between the environments where PRI has to date remained an influential and important party at various levels of government. Spending/GDP is a variable that relates public spending to actual economic activity, and even in states with similar levels of economic activity, public spending figures are often different. Therefore, it is clear that the simple level of state income does not determine public spending: high GDPs may or may not trickle down to the extent that they would be reflected in public services. Especially in states where a large share of GDP consists of petroleum-related or tourism-related income, public services can be poor despite a high GDP per capita (e.g. Campeche). On the other hand, states with high GDP which accrues through industrial activity often also attracts improvements in infrastructure and transparency, and a higher trickle-down to the locals employed by industry, whose taxes, in a transparent environment, can then help raise the level of public spending. In any case it is clear that the levels of public spending are determined by a more complex set of variables than just GDP.

In the above charts and tables, two main factors have been charted against measures of public spending: the party affiliations of the electorate based on electoral results or distributions of seats in various government bodies, and the general level of economic activity in the state.

The main finding was that there is some evidence that PAN spending was lower than PRI in 2000 and lower than PRD spending in 2006, but the evidence is contradicted by a number of tests in Tables 5.1 and 5.2 that show there are no significant differences between spending by different parties. I also suggested that the results may show a solidification of PAN support into a more homogeneous group of states.

Another finding was that wealthy states tend to spend the equivalent of between five and 15 per cent of their GDP in public expenditures, whereas poor states have a far wider spectrum of public spending figures despite similar low levels of GDP per capita. This concurs with the notion that PAN supporters tend to be more homogeneous and PRI/PRD supporters more heterogeneous.

5.3 Are there differences in transparency between the federal and local levels of governance?

In Tables 5.1 and 5.2 above, I considered different levels of government as nothing more than different political circumstances, and searched for the same result (spending differences between parties) in all of them. However, to complete the analysis, I also add the question of whether there are differences between the federal and local levels. I theorised in Chapter 4 that the differences should arise because the federal government is better monitored and can enforce transparency on itself.

Transparency at federal level has been the objective of many political reforms in Mexico. However, the federal government cannot impose such reforms at state level. Therefore, it is to be expected that state-level and municipal-level political organs would have a lower degree of transparency, and with lower transparency one can expect more signs of clientelism and favouritism in the distribution of resources.

The question I posed was: *Is transparency greater in federal than state funding decisions?*

In Tables 5.3 and 5.4, it appears that the statistically significant differences in spending levels between parties occur mainly at the level of presidential elections and Chamber of Deputies elections. In other words, I have only been able to distinguish between state spending levels based on the way they voted in federal elections. On the other hand, local election results do not appear to have any connection to spending levels – not even the composition of state congress, despite the fact that the state congress contributes to spending decisions.

Firstly, I examine the levels of political competition at different levels of government:

Figure 5.7 Effective number of parties at various levels of government, average of all states, based on vote shares, 1991-2007
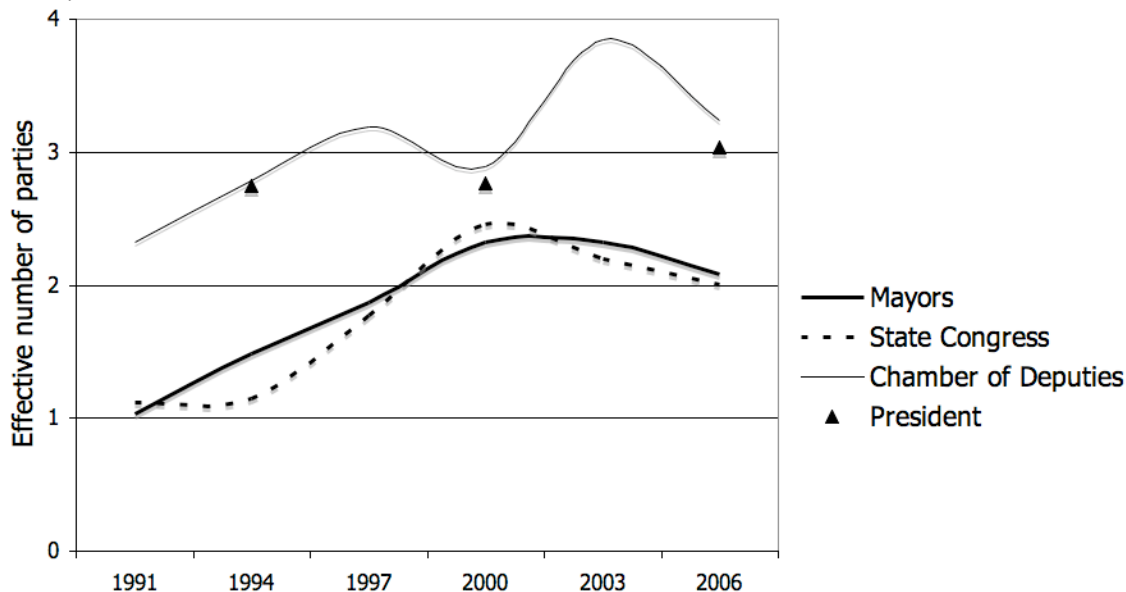
Effective number of parties is a political competition indicator, devised by Laakso and Taagepera (1979) and widely used thereafter. It is calculated as the effective number of parties $N = 1 / \sum p_i^2$, where p_i is the proportion of either votes or seats in a particular governing body, given to each competing party. For presidential elections and Chamber of Deputies elections this is the vote share, and for state congress and mayors it is the number of seats in each state. N expresses the number of parties that are present in the political competition in each state.

There is a great deal more competition in Chamber of Deputies and presidential elections than in local elections. Figure 5.7 shows that the mean state has consistently had more parties in the presidential and Deputy running than in the state congress and mayors. The margin is not insignificant: mayors and state deputies in most states effectively come from two parties at most, whereas in the federal positions of Deputies and the presidency, there have consistently been three parties in the running.

This is a natural result of two issues. Firstly, in local elections there are usually fewer positions available and therefore parties find it less attractive to enter a three-way contest, which leads to two-way contests. Secondly, most local positions are not prestigious, whereas high-profile federal positions are worth campaigning for. Therefore it is understandable

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that federal elections be far more competed. However, this can also lead to poorer monitoring of the local political situation and therefore less transparency.

In order to examine the question of political influence on public finance, I chart measures of political competition against public spending per capita. Figures 5.3 and 5.4 above showed that public spending per capita and political competition have a clear negative correlation. Here I look at the same data on the state congress level:

Figure 5.8 Political competition (state congress) and spending/GDP, 1993-2004
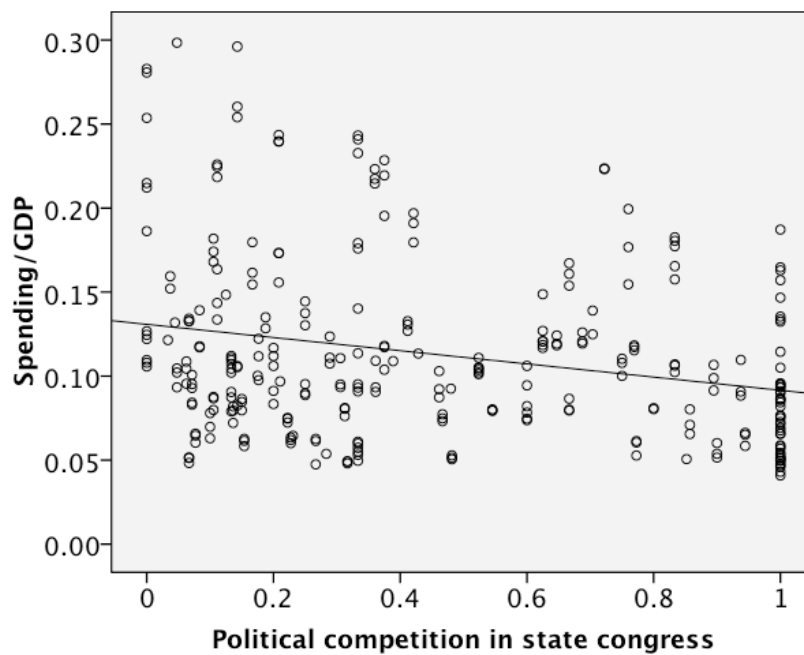
Note: Political competition measured in terms of the "winner safety" indicator, i.e. the difference between the seat proportions of the largest and second largest party. Source: INEGI/EFIPEM; political data from various state electoral institutes, collected by Rachel Flores Romero from the Autonomous University of Tlaxcala.

Above, for presidential and Chamber of Deputies elections, there was a clear indication that political competition and spending are linked. However, at the state congress level, it does not appear that there is a particular trend linking political competition to spending per capita. For mayors the diagram is similar to Figure 5.8 – there is no clear trend – and so we see that these data indicate no link between local political competition and spending, of the kind Figures 5.3 and 5.4 showed for federal political competition.

Finally, I calculate Pearson correlations between two measures of political competition (number of effective parties and "winner safety"), with two measures of public spending, in four different types of elections. I do this to give a broader statistical context to the

observation above that the links between public finance and politics are stronger at federal than local level. The statistics confirm that there are links between the two, but again fail to distinguish clearly between the federal and local level.

Table 5.5 Correlations between spending and political competition (1994-2006)

Measure of competition	Level of election	Correlation with spending per capita	Correlation with spending/GDP
Number of effective parties (high value indicates high competition)	Presidential (vote share)	0.27***	0.30***
	Deputies (vote share)	0.27***	0.16**
	State congress (seats)	0.29***	0.13
	Mayors (seats)	0.18	0.27***
Winner safety (high value indicates low competition)	Presidential (vote share)	−0.38***	**−0.14***
	Deputies (vote share)	−0.56***	**−0.11**
	State congress (seats)	−0.47***	**−0.25***
	Mayors (seats)	−0.44***	**−0.25***

Source: INEGI/EPIFEM; political data from IFE and various state electoral institutes, collected by Rachel Flores Romero from the Autonomous University of Tlaxcala. *** denotes 99% level of confidence, ** denotes 95%.

The key observation here is that most of the correlations are highly significant, suggesting that political competition has a correlation with public finance. However, it is not immediately obvious that political influence is stronger at the local level than federal. The only quadrant of Table 5.5 where local politics has a higher relationship to federal finance is the bottom right hand one (in bold): Winner safety correlated with spending/GDP.

The key measures of political competition here are Laakso and Taagepera's (1979) Effective Number of Parties (ENP) indicator, and an indicator of winner safety, similar to Saez and Sinha's (2009) "*margin of victory*" indicator and Keefer and Khemani's (2008) "*MarginVictory*". Above, I defined winner safety as the difference between the winner and second-best party. The key difference between these two is that the ENP indicator takes into account all parties, whereas the winner safety indicator only considers the runner-up as the most relevant threat.

These results indicate that the winner safety–spending relationship is stronger than the ENP–spending relationship. This shows that the perceived level of electoral threat (as measured by winner safety) is a larger motivator of spending, which is consistent with my hypothesis that political competition has an impact on spending. Specifically, this suggests that politically motivated spending is related to the immediate threat of a runner-up.

I began this section with the question of whether spending decisions are more related to local election results than to federal election results. This hypothesis was based on the idea that federal politics is better monitored than local politics. Table 5.5 supports this hypothesis. When political competition is measured by winner safety, the correlations between political competition and spending are far higher at municipal and state congress level than at the federal level.

There is therefore evidence of higher spending where the winner perceives a high threat from another party, and this evidence is strongest at the local level. This is in line with my hypothesis that politically motivated spending should occur at the local level more frequently than at the federal level.

However, for the ENP indicator of political competition, the results are less conclusive, and there is no obvious pattern between federal and local politics. Why does ENP have a weaker connection with spending than the winner safety indicator? I argue that this occurs because of the role of the smaller parties that influence the Effective Number of Parties indicator, but that are not considered by the winner safety indicator. At municipal level in Mexico, having more than two effective parties is rare. Only 11 states of 32 have ever experienced (within this dataset) a figure of three or more effective parties at the municipal level. This usually happens in two situations. The first is a politically very progressive state, such as Guanajuato, where political competition is well established. The second situation is in states where municipalities are very small, and therefore unattractive to the large parties, and so several smaller parties can win mayoralties with relatively little campaign investment, as in Chiapas, Hidalgo and Veracruz. This fractionalises the political field and increases the effective number of parties, but because many smaller parties are local (e.g. PRV of Veracruz), this does not make much difference to *de facto* political competition, and has no national significance.

The winner safety indicator ignores the smaller parties and considers only the top threats, and is thus a better indicator of whether a winner or incumbent perceives the need to spend politically. I therefore trust the winner safety indicator more as a measure of threat, and conclude that there is some evidence especially in Table 5.5 that political spending is most prevalent at the municipal and state congress level.

From the conclusion of politically motivated spending, I proceed to the final part of this section, with a further question regarding the structure of political competition. Specifically, I turn my focus to the relationships between different levels of government. It is of special interest here whether two levels of government are controlled by the same party, and whether this influences their likelihood of using public finance for political ends.

5.4 How does power-sharing influence public finance?

Above, I have shown that states with a number of active political parties spend more than states controlled by a single party. I also showed that spending is more likely to be linked to political conditions at the local level than to politics at the federal level, and concluded that this shows a political involvement in public finance at local level (but not necessarily at the federal level).

In Table 5.1, I presented hegemony, PRI rule, poor monitoring in local politics, and low political competition as potential causes of poor transparency. However, one more question remains regarding political competition, and it is related to transparency. In this section, I give further evidence as to the role of political competition in determining public spending. The specific focus is on the relationships between levels of government, and whether they collaborate more if the same party controls different levels of government.

I suggest that a federal government from a given party is more likely to bestow resources on the subnational governments that are controlled by the same party, and the same principle holds for state governments rewarding the municipalities controlled by the same party. I argue that favouritism is more likely to occur in settings where only one party is involved. Conversely, when two different parties are involved in transactions between levels of government, better monitoring should occur, and less evidence of favouritism should appear. I believe high state spending is evidence of favouritism.

In Table 5.6 below, I present the results from an analysis that compares the means from different states and years. I employ two-sample hypothesis tests to ascertain any statistically significant differences in the means of single-party and power-sharing states. The analysis is then expanded to different parts of the dataset and presented in Tables 5.7–5.10.

The two possible outcomes are single-party and power-sharing. The single-party outcome is where two levels of government are controlled by the same party. Power-sharing in the context of these calculations is defined as the two levels of government being controlled by different parties. Each state in each year is one data point. In addition to the state congress–Chamber of Deputies comparison, in Tables 5.7–5.10 there is also a comparison between mayors (measured by number of municipalities in a state) and the state congress.

The term "power-sharing" in this chapter is employed as shorthand for a situation where two parallel organs of government are controlled by different parties. "State-federal" power-sharing refers to where the majority of a state congress and the majority of votes in Chamber of Deputies elections for that state are held by different parties. "Municipal-state" power-sharing refers to a similar arrangement between the majority of seats in the state congress and the party that holds the greatest number of mayoralties in the state's municipalities.

I begin with a simple analysis of the means of spending levels in different groups. The two key groups are one-party states (data points where two organs of government were controlled by the same party) and power-sharing states (data points where two organs of government were controlled by different parties). Table 5.6 below summarises the analysis of the difference in the means.

Table 5.6 Does power-sharing affect levels of public finance? Differences between single-party and power-sharing states

Levels of government	Variable	μ_{SINGLE}	S_{SINGLE}	N_{SINGLE}	μ_{PS}	S_{PS}	N_{PS}	t-stat	Interp.
State congress and Chamber of Deputies (state-federal)	Spending per capita	4375	3291	263	6265	2547	96	**–5.73*** **	**PS higher**
	Spending/ GDP	0.11	0.05	263	0.12	0.05	96	–1.51	Not signif.
Mayors and state congress (municipal-state)	Spending per capita	4543	3218	235	6056	3037	95	**–4.03*** **	**PS higher**
	Spending/ GDP	0.11	0.05	233	0.12	0.06	89	**–1.86***	**PS higher**

Note: SINGLE refers to single-party control, PS to power-sharing.

It is clear that among various types of comparisons, some consistency is found in the conclusions. Single-party cases (where no power-sharing occurs between these particular political organs) are found to have significantly lower means of public finance than the

power-sharing cases, with the exception of spending/GDP on the state-federal level, which is also close to significant, with an alpha level of 0.13.

Therefore, it appears that power-sharing has a correlation with high levels of public finance. This confirms the conclusion from the graphical method in Figure 5.6 that power-sharing tends to coincide with higher levels of public spending. Spending per capita appears especially affected, whereas spending/GDP does not; this may indicate the previously considered notion that spending/GDP is to some extent independent of local conditions and more subject to the whims of GDP.

It appears that when the focus of the comparison shifts to the municipal-state level, rather than state-federal level, there is more significance in whether the same party controls both levels. At the municipal-state level, shared power yields high levels of public finance for both public finance variables, whereas for the state-federal level, only three of six test statistics are significant.

The relevant laws stipulate that the political affiliations of decision-makers should not influence levels of public finance. However, it appears that on the local level, there is some correlation between the two. Therefore, the hypothesis that political affiliations are more important in local politics than at federal level is to some extent borne out by this analysis. The explanation given in this thesis is that local politics is less stringently monitored than federal politics in today's Mexico.

To eliminate some income differences between different states, the same analysis was then run for the 10 poorest states (as measured by 2004 GDP per capita: Oaxaca, Chiapas, Guerrero, Tlaxcala, Nayarit, Tabasco, Michoacán, Veracruz, Hidalgo and Zacatecas).

Table 5.7 Does power-sharing affect levels of public finance (poor states only)?

Levels of government	Variable	μ_{SINGLE}	S_{SINGLE}	N_{SINGLE}	μ_{PS}	S_{PS}	N_{PS}	t-stat	Interp.
State congress and Chamber of Deputies (state-federal)	Spend per cap	4159	3491	77	6162	2261	27	−3.40***	**PS higher**
	Spend/ GDP	0.18	0.06	72	0.17	0.05	30	0.85	Not signif.
Mayors and state congress (municipal-state)	Spend per cap	4687	3323	54	5398	3686	36	−0.89	Not signif.
	Spend/ GDP	0.18	0.06	46	0.17	0.06	30	0.34	Not signif.

Note: SINGLE refers to single-party control, PS to power-sharing.

It is clear that compared to Table 5.6, the results for the poor states are not definitive. Only one of four test statistics is significant. The significant t-statistic still expresses the same broad conclusion that power-sharing states have higher spending per capita than states where power is concentrated on one party.

With the same test for the ten wealthiest states, again measured by GDP per capita in 2004, thetest gives a slightly clearer result. The states considered here are Distrito Federal, Nuevo León, Campeche, Coahuila, Quintana Roo, Chihuahua, Aguascalientes, Baja California, Sonora and Baja California Sur. The test shows that both state–federal and municipal–state power-sharing have a significant and positive relationship with public spending.

Table 5.8 Does power-sharing affect levels of public finance (wealthy states only)?

Levels of government	Variable	μSINGLE	SSINGLE	NSINGLE	μPS	SPS	NPS	t-stat	Interp.
State congress and Chamber of Deputies (state-federal)	Spend per cap	4661	3459	109	6500	3372	30	**−2.63*****	**PS higher**
	Spend/ GDP	0.08	0.02	109	0.08	0.03	30	−1.09	Not signif.
Mayors and state congress (municipal-state)	Spend per cap	4547	3423	110	7599	2656	26	**−4.97*****	**PS higher**
	Spend/ GDP	0.08	0.02	107	0.09	0.02	26	0.03	Not signif.

Note: SINGLE refers to single-party control, PS to power-sharing.

Keeping in mind the premise that any significant result in these hypothesis tests indicates political influence in public finance, the interesting difference here is that there appears to be more political influence in the wealthy states than in the poor ones. Also, only in rich states is there evidence of political influence at both levels of government. This contradicts the corruption-and-growth literature (e.g. Shleifer and Vishny, 1993) that corruption and growth tend to be negatively related, and rather shows a picture where sub-national units are able to grow despite corruption.

A further interesting observation (based on the N figures from Tables 5.7 and 5.8) is that single-party situations tend to be relatively more common in wealthy states. Of all the data points from wealthy states, 80% were single-party situations; in poor states, only 67%. In the period 1991–1999, these figures were 92% (rich) and 53% (poor): nearly all wealthy states were consistently under single-party representation (with Aguascalientes as the

exception), whereas roughly half of poor states were sharing power. After 2000, with the "transition to democracy", also the wealthy states began experiencing more power-sharing, and the difference was reduced.

Together, tables 5.6–5.8 point to the result that power-sharing yields higher level of public finance. This indicates that when there is credible opposition, it is more likely that spending is pushed up by decision-makers attempting to maximise votes.

The difference between poor and wealthy states is marked. It appears that in wealthy states, the link between political power-sharing and levels of public finance is stronger than in poor states. One reason may be that the budgets of wealthy states are to a higher extent comprised of *participaciones*, or discretionary funds. On the other hand, the budgets of poor states are mostly made up of *aportaciones*, which carry strict stipulations on how the funds must be spent. Therefore, it is possible that earmarks have helped reduce the effect of political competition on public budgets in Mexico overall.

5.5 Do public finance earmarks reduce politically motivated spending?

In order to include the effect of political decision-making in the equation, I proceed to examine the direct federal funding to states and municipalities with the same methods as above. *Aportaciones* and *participaciones*, as considered in detail in previous chapters, are two types of federal funding, with the major difference that the former is earmarked for social infrastructure and is therefore subject to spending rules, and the latter can be spent by states as they wish, most of it directly as state expenditure, and 20% directly to municipalities.

Table 5.9 Does power-sharing affect levels of public finance (aportaciones and participaciones)?

Levels of government	Variable	μSINGLE	SSINGLE	NSINGLE	μPS	SPS	NPS	t-stat	Interp.
State congress and Chamber of Deputies (state-federal)	*Aport/ Spend*	0.50	0.12	156	0.53	0.12	90	**–2.31****	**PS higher**
	Particip/ Spend	0.43	0.15	156	0.34	0.06	90	**5.82*****	**PS lower**
Mayors and state congress (municipal-state)	*Aport/ Spend*	0.50	0.12	144	0.52	0.12	77	–0.433	Not signif.
	Particip/ Spend	0.43	0.15	144	0.36	0.10	77	**3.56*****	**PS lower**

Note: SINGLE refers to single-party control, PS to power-sharing.

Table 5.9 shows the differences between discretionary and earmarked funding, and indicates favouritism in the distribution of the discretionary funding. The influence of politics on *participaciones* is significant at both state-federal and municipal-state level, and at a 99% level of confidence. This suggests that *participaciones* are strongly correlated with political situations at both state-federal and municipal-state level. In addition, the results indicate that single-party situations yield higher levels of *participaciones*, which is important, because it indicates the presence of politically motivated decision-making in the funding distribution.

On the side of *aportaciones*, there is a clear link between *aportaciones* and power-sharing where the local congress majority and Chamber of Deputies representatives are from different parties (the state-federal level). This follows the results above for overall levels of public finance: a power-sharing situation will yield higher public finance figures. Power-sharing at the state/federal level, where *aportaciones* funding is distributed to states, is on average significantly correlated with a higher level of *aportaciones* as a percentage of the state's budget. The level of *aportaciones* is not highly significant where power-sharing at municipal/state level is concerned, suggesting that *aportaciones* funding tends to be distributed to municipalities without correlation to political situations.

However, for *participaciones* (discretionary funding) the link is strong, and contradicts all the findings thus far in this chapter. I have so far found that two-party set-ups have had a positive impact on levels of public finance. However, Table 5.9 shows that one-party arrangements, not power-sharing, tend to correlate with significantly higher levels of *participaciones*.

The conclusion to be drawn from this is essentially that whilst spending per capita, spending/GDP and *aportaciones* are all more likely to be higher if several parties share power, *participaciones* is likely to be higher in a one-party set-up. This conclusion is important, because *participaciones* is the only category of income considered here that is dependent on political decisions, and also the only one where one-party control increases funding levels. It appears that in this one variable where direct political influence can be exerted, politically motivated funding is far from extinct.

Aportaciones, on the other hand, are subject to the statistical poverty and social marginalisation conditions laid out by Ramo 33. I showed earlier that the poorest third of Mexican states has a far higher tendency to power-share than the wealthiest third, and this is in line with that finding. *Aportaciones*, low income, and power-sharing consistently co-incide in these calculations.

With high levels of significance, I have shown statistically that *participaciones* funding is distributed more generously in set-ups where the awarding body and the recipient are controlled by the same party. This occurs despite the fact that in public finance overall, the trend is the opposite: where political diversity is greater, levels of public finance tend to be higher. This suggests that there are mechanisms at play, in the specific distribution of *participaciones* only, that lead to higher levels of funding if the same party controls several levels of government. In the context of this thesis, I argue this to be a result of favouritism within the political system in the distribution of discretionary funding.

In an attempt to find whether these mechanisms are related to political practices within Mexican organs of government, I include one final dimension of the same calculations: time, which works as a proxy for the transition to democracy and end of the hegemony. Dividing the dataset into two parts, 1993-1997 and 1998-2007, helps ascertain whether these results for *participaciones* are possibly biased because of the inclusion of the early 1990s in the sample. Therefore, dividing the sample into hegemony and post-hegemony, using the year 1997 as the cut-off, should help form a conclusion.

The results are not encouraging for those wishing for the elimination of political influences from Mexican public finance. In fact, there is more evidence of clientelism in the post-hegemonic era than in the last stages of the hegemony:

Table 5.10 Does power-sharing affect levels of participaciones (1993-1997 and 1998-2007)?

Levels of government	Variable	μ_{SINGLE}	S_{SINGLE}	N_{SINGLE}	μ_{PS}	S_{PS}	N_{PS}	t-stat	Interpret.
State congress and Chamber of Deputies (state-federal)	Particip/ Spend 1991-1997	0.47	0.16	76	0.41	0.12	6(†)	0.97	Not signif.
	Particip/ Spend 1998-2007	0.37	0.06	156	0.34	0.05	90	**3.83*****	**PS higher**

Note: SINGLE refers to single-party control, PS to power-sharing. (†) Due to data gaps and low incidence of power-sharing before 1997, these calculations are unreliable due to an unusually low N=6 for power-sharing states; in addition the identities of these six data points give rise to a strong suspicion of spurious correlation.

Table 5.10 shows that there is heavy evidence of the politicisation of *participaciones* in the post-1998 era, with a high level of confidence, which follows the finding above that single-party arrangements yield higher levels of *participaciones* than power-sharing arrangements.

In 1993–1997, I find no significant difference between *participaciones* levels in one-party and power-sharing states. However, this surprising conclusion is likely to be the result of a data problem. Power-sharing states were scarce before 1997, and due to data gaps the sample was reduced to six data points (Aguascalientes 1995–1997; Baja California 1995–1996, and Distrito Federal 1996). This may have reduced the statistical reliability of this particular result, and it is clear that wealthy Aguascalientes, Baja California and Distrito Federal are not alone a representative sample, and may have received higher levels of *participaciones* not because of their political arrangements but just because wealthy states tend to do so.

Table 5.11a Summary table of statistical results: Overall spending levels

Levels of government & variable	Sample	t-stat	Interpretation
State-federal Spending per capita	All states and years	**−5.73***	**Power-sharing higher**
State-federal Spending per capita	Poor states only	**−3.40***	**Power-sharing higher**
State-federal Spending per capita	Rich states only	**−2.63***	**Power-sharing higher**
State-federal Spending/GDP	All states and years	−1.51	Not significant
State-federal Spending/GDP	Poor states only	0.85	Not significant
State-federal Spending/GDP	Rich states only	−1.09	Not significant
Municipal-state Spending per capita	All states and years	**−4.03***	**Power-sharing higher**
Municipal-state Spending per capita	Poor states only	−0.89	Not significant
Municipal-state Spending per capita	Rich states only	**−4.97***	**Power-sharing higher**
Municipal-state Spending/GDP	All states and years	**−1.86***	**Power-sharing higher**
Municipal-state Spending/GDP	Poor states only	0.34	Not significant
Municipal-state Spending/GDP	Rich states only	0.03	Not significant

Table 5.11b Summary table of statistical results: Special revenue items and years

Variable	Level of government	t-stat	Interpretation
Aportaciones/revenue	State-federal, all years	**−2.31****	**Power-sharing higher**
Aportaciones/revenue	Municipal-state, all years	−0.43	Not significant
Participaciones/revenue	State-federal, all years	**5.82***	**Single-party higher**
Participaciones/revenue	Municipal-state, all years	**3.56***	**Single-party higher**
Participaciones/revenue	State-federal, 1991–1997	0.97	Not significant
Participaciones/revenue	State-federal, 1998–2007	**3.83***	**Single-party higher**

5.6 The political variables: A multivariate analysis

To complete the chapter, I finish with a section of multivariate analysis, which pulls together the variables considered above. The focus is on political competition and its role in public finance.

I have used three different models, federal, state, and municipal, and calculated each model using two methods: ordinary least squares (OLS) and generalised method of moments (GMM). Each method has been subject to controls for autocorrelation and heteroskedasticity, and no evidence of multicollinearity was found in the data. Each variable has been given a unit root test, and differenced if evidence of non-stationarity was found. Further methodological details can be found in Appendix 1.

The different levels of government can be expected to differ slightly in the functioning of the public finance system and the influence of politics on it; therefore, the use of three methods gives a robustness test for the results of each method. I mostly treat the three levels of government separately in this analysis. The federal and state level analysis are analysed first and are both aggregated at the state level, incorporating the vast majority of Mexico's 32 states, and over a varying number of years, as specified in Tables 5.9 and 5.10.

The difference between federal and state-level analysis is that the political variables are measured for federal and local level respectively, in order to highlight differences in the political environments, particularly transparency. The dependent variable and the control variables are identical for both federal and state levels. The rationale for such a pair of models is that it is effectively the same regression under two different sets of circumstances, where both local conditions and the time period are identical. The only difference is in the type of political environment. The federal environment is more transparent and better informed than the local political environment, and PRI remains stronger at the local than at the federal level.

5.6.1 Statistical analysis at federal and state level

The dependent variable for the federal and state models is the real spending per capita of each state in each year. This represents the overall amount that a state spends on one

citizen annually, and has been adjusted by a GDP deflator, with the initial year (1991) being the base year.

Effective number of parties is an indicator of political competition, created by Laakso and Taagepera (1979), first introduced in the bivariate analysis above. It shows the effective number of parties usually in an organ or legislative power, calculated as $N = 1 / \sum p_i^2$, where p_i is the proportion of votes (in presidential elections) or proportion of seats won (in state congress and municipal elections).

The effective number of parties variable is expected to have a positive coefficient, based on the previous results in this chapter that power-sharing tends to yield higher means for spending indicators than single-party control of two levels of government.

Electoral cycle is a dummy variable indicating either federal or state elections in any particular year, and it has a positive lag of one year, meaning elections in year T+1 cause spending in the previous year, year T. Theory stipulates that this should be positive, especially in an environment where vote-buying is suspected.

PRI indicators, also dummies, are used to gauge whether the mere presence of PRI in power influenced levels of public finance. As outlined in Chapters 2 and 3, there is little precedent for this in literature in the time period we are analysing (especially post-1994); it is known that PRI practiced vote-buying, but it is less known whether other parties have also done so. Therefore, the initial hypothesis is that PRI leadership is associated with higher spending.

Power-sharing is defined as above, as a dummy variable indicating whether two levels of government (president and state congress for federal-state, or state congress and mayors for state-municipal) are controlled by the same party in a given state in a given year (same party = 0, different parties = 1). This, like effective number of parties and much for the same reasons, is expected to have a positive coefficient based on the results from the previous section.

Of the control variables, real state GDP per capita is expected to have a positive coefficient due to wealthier states' tendency for better public services. Wealthier states are likely to have greater demand for better services, as the constituents are generally better informed,

as well as have more competition from private service providers in both health and education, producing pressure to improve the quality of services. Better services, ceteris paribus, cost more. On the other hand, supply of public services is also likely to be better in wealthy states, as wealthy states tend to be industrial states and compete for industrial activity and foreign direct investment. Therefore, higher quality services are both supplied and demanded. I thus expect high GDP and public spending per capita to be positively correlated.

The coefficient of population is expected negative due to a number of poor states having higher populations; however, this is mainly a control variable and the sign therefore does not carry high relevance.

The final control variable is the federal funding given to the state. The dependent variable is real spending per capita, and the objective of the model is to assess the influence of politics on spending. However, in addition to political factors and GDP per capita, one of the main determinants of spending is likely to be the federal income earned by states and municipalities. As shown in Chapter 2, federal funding forms the majority of most states' budgets, and therefore federal funding (income) per capita is likely to be a significant determinant of public spending (expenditure) per capita. Thus, I include federal funding (income) per capita as a final control variable. Federal funding and public spending are expected to have a positive correlation, as more spending is made possible for a state by higher incoming funding from the federal government to a state.

Table 5.12 Regression results, federal level.

Dependent variable: Real spending per capita, pesos						
	OLS	OLS	OLS	GMM	GMM	GMM
Constant	707.73***	609.04***	168.05*			
Effective # of parties (presidential elections) (D)	171.11	212.30	-8.11	78.93	-109.82	-225.24
Electoral cycle (federal elections, lag of +1)	34.04	-232.45***	92.17	72.75**	-426.35***	-62.46***
PRI win in presidential elections (dummy)	-95.04	77.63	91.97	-66.07	599.74***	238.63***
Power-sharing (federal-state) (D)	31.71	43.80	-34.10	-55.22	187.87***	13.10
Population (D)		-0.00	-0.00		0.00***	-0.00***
Real per capita GDP, base 93 (D)		0.16***	0.14***		0.35***	0.05***
Real federal funding per capita, base 98 (D)			0.70***			1.02***
Real spending per capita, base 91 (lag of -1)				1.02***	0.62***	0.10***
R2	0.01	0.37	0.53	n/a	n/a	n/a
DW	1.92	2.39	2.93	n/a	n/a	n/a
J stat	n/a	n/a	n/a	28.54	22.37	22.23
N	32	32	32	32	32	31
T	12	10	6	12	5	5
Observations (N·T)	384	320	192	384	160	155

Note: (D) denotes a variable with a first-difference transformation.

Table 5.13 Regression results, state level

Dependent variable: Real spending per capita, pesos						
	OLS	OLS	OLS	GMM	GMM	GMM
Constant	596.53***	535.67***	201.30**			
Effective # of parties (state congress seats) (D)	29.21	5.36	-23.34	-141.62	-72.46	-109.45*
Electoral cycle (state elections, lag of +1)	94.85	22.04	109.47	192.98***	68.01	95.45***
PRI majority in state congress (dummy)	-3.48	93.56	85.80	515.46***	-318.34	41.50
Power-sharing (state-municipal) (D)	394.62***	257.89**	62.44	268.44*	57.70	10.05
Population (D)		-0.00	-0.00		0.00**	-0.00
Real per capita GDP, base 93 (D)		0.15***	0.14***		0.36***	0.03
Real federal funding per capita, base 98 (D)			0.63***			1.06***
Real spending per capita base 91 (lag of -1)				1.00***	0.54***	0.00
R2	0.03	0.37	0.52	n/a	n/a	n/a
DW	1.79	2.40	2.84	n/a	n/a	n/a
J stat				27.64	23.22	21.87
N	32	31	30	31	30	30
T	15	11	6	7	5	5
Observations (N·T)	480	341	180	217	150	150

Note: (D) denotes a variable with a first-difference transformation.

5.6.2 Analysis of results at federal and state level

I begin with a purely political model, where the four independent variables are political competition (effective number of parties), the electoral cycle dummy, the PRI dummy, and the power-sharing dummy. I proceed to add population and GDP per capita, and finally the income control variable. This gives three models using OLS and three using GMM.

The political variables alone give a poor performance in explaining public spending, at R^2 = 0.11 at best. With GMM, the Hansen J-statistics are all at acceptable levels, but show that the simplest models in these calculations have weaker explanatory power overall. Therefore, it is clear that the politics-only models cannot be used for drawing conclusions. Indeed, they often contradict the other models, showing their low reliability in explaining public spending.

Political competition does not prove to be a significant variable in these models, at either level of government. Between 18 models, it is only significant once, at the state level. It has a negative coefficient, which contradicts the findings in the previous part of this chapter that higher political competition increases public spending as competition for votes occurs. However, here the coefficient is negative, suggesting that a lower number of parties yields higher public finance. This appears to give a weak corroboration to the idea that Mexican parties tend to spend more liberally in the absence of competition, which has long been suspected, especially where PRI is in power. However, meaningful conclusions are not to be drawn from one model only.

Power-sharing is a variable related to political competition, as it measures whether two levels of government are controlled by different parties, and therefore measures a similar tendency to include more parties in the political process as the political competition variable. (However, the bivariate correlation is not high enough to cause multicollinearity.) Power-sharing is consistently significant and positive at the state level, suggesting that where the state congress and the majority of mayors are from different parties, public finance is higher. This is the same finding as in Section 5.4 that power-sharing gives higher public finance levels. I suggested earlier that this may be because power-sharing removes the tendency by politicians to waste, and therefore increases spending on legitimate purposes.

This contradicts the original hypothesis that favouritism occurs in single-party set-ups and causes reckless public spending. The significance of power-sharing in this model is genuine and not insignificant, even if the sign is different from that expected. The result that multiparty set-ups spend more goes against the argument of favouritism, and the reason for higher spending where parties are different is likely a wholly different mechanism. An answer for this question, still in the electoral realm, is that in situations of higher competition, parties in power may compete for votes by providing more public services than they would otherwise. In this scenario, "battleground" areas are recipients of greater public funding because of their electoral precariousness and importance.

Moreover, this scenario does not exclude the original theory of favouritism. It may simply be that favouritism (pushing up spending in single-party areas) and battleground finance (pushing up spending in competed areas) are two competing effects, and these statistical results possibly reflect a move towards politicians preferring battleground finance rather than direct clientelism.

A move away from clientelism and into battleground funding would mean a shift of the Mexican states into a legally acceptable framework. Electoral reforms enacted in the 1990s specified campaign finance guidelines (Lujambio Irazábal, no year), and these reforms forced parties to disclose their funding, as well as rely heavily on public funding rather than private. This would work as an incentive to focus spending on competed areas.

Thus, at the state level, the conclusion tends towards a "battleground finance" scenario, to explain higher spending in competed states. At the federal level, on the other hand, power-sharing shows very weak significance, with only one of nine models showing it as a significant determinant of public spending. This is a marked contrast to the state level, where it was consistently significant; at the federal level, public finance appears to be independent of power-sharing altogether. It is arguable that neither the favouritism effect nor the battleground effect is at play at the federal level. Therefore, there is evidence that local spending remains less transparent and more politically motivated than decisions at the federal level.

The battleground effect and the favouritism argument, when related to public finance, are two sides of the same issue: financial influence in order to garner votes. Both are consistent with the vote-maximising priority of politicians, as well as the median voter theory; they

merely differ in that battleground finance targets divided areas, whereas clientelists target areas controlled by a particular group. Returning to the key argument of this chapter – that the political landscape of a state or municipality determines its public finance levels – it is clear that the statistical significance of the power-sharing variable at the state level points to the presence of public finance distribution based on a battleground finance scenario: states where votes are more competed spend more. This is evidence of politically motivated public spending.

Thus, a party link between state congress and mayor is a determinant of public finance, but a link between the president and state congress is not. This is an indicator of the better transparency at federal level than local. A state where, for example, the PAN candidate was supported for the presidency (therefore the president owing a "moral debt" to the state's voters) and the state congress is also controlled by PAN will distribute the same amount of public finance per capita to the state, *ceteris paribus*, as to a state where the president owes no such debt. On the other hand, where the state congress and the majority of mayors are from the same party, the relationship has a statistically significant impact on public finance, and it is likely that the electoral debt and party connections are the main mechanism; it is also possible that electoral fraud plays a role. The notion of "moral debt" in politics remains important at local level, but it appears from these results that the transparency measures of the federal government have been fruitful.

A final note on power-sharing is that it becomes insignificant in all state-level models when the federal funding of the state is added as a control variable. This suggests that the amount of funding given to the state by the federal government captures the effect of power-sharing, or vice versa. The bivariate correlation between these variables is roughly 0.1 and insignificant, and therefore the question is not of a direct correlation. More likely, it is a question of the flow of money between the three levels of government. Let us recall that federal funding is given not only to states, but also to municipalities directly (roughly 20% of total national tax revenue). Where funding is given to municipalities directly from the federation, it is logical that any relationship or "moral debt" between the state congress and mayors becomes insignificant.

The conclusion to be drawn here is that the involvement of the federal government in transactions appears to reduce the importance of party political links in these transactions. This is, again, likely to be the result of the higher transparency and integrity expected of

the federal government, and the better monitoring that gives disincentives for varied forms of clientelism.

The election year dummy appears to confirm the presence of electorally motivated spending at state level, giving another indication of the presence of political motivations in public finance distribution. If spending rises in the year prior to a local election year, it is likely to be an indicator of vote-buying or similar. However, at federal level, the result is the opposite: spending in the year prior to federal election years is significant and negative. This pattern can be explained by examining the typical pattern of federal and state elections.

Figure 5.9 Federal and state election year patterns

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Electoral cycle 1: 13 states	none	Federal	State	none	Federal	State
Electoral cycle 2: 12 states	none	Federal State	none	none	Federal State	none
Electoral cycle 3: 8 states	State	Federal	none	State	Federal	none

Figure 5.9 above shows the three possible orders of election years in the states, given that federal elections must occur every three years and in the same year in all states. Electoral cycles 1 and 2 are more common than the third, as indicated on the left side of the diagram. I found that spending in the year prior to a federal election year (years 1 and 4 in Figure 5.9) is significantly lower than in other years. It is clear from the diagram that in 25 states, years 1 and 4 are non-election years altogether, which explains the low spending. On the other hand, the year prior to a state election year is most often either a federal election year (in cycle 1) or is also the year prior to a federal election year (in cycle 2). This explains the large incidence of high spending in years prior to state election years.

Therefore, it is clear that the electoral cycle influences public spending, which indicates a degree of vote-buying or vote-inducing spending behaviour. The conclusion I cannot draw here is whether state elections prompt a larger increase in spending than federal elections, simply because the effect of the two elections is difficult to isolate in reality. This is made even more difficult by the fact that in nine states, local and federal elections are generally organised on the same date.

The PRI variable has significance especially at the federal level, and carries a positive coefficient, provided that GDP per capita is controlled for. This means that a state voting for a PRI presidency is also more likely to have higher public spending per capita. The PRI variable is only significant in models where GDP per capita is controlled for, which explains the apparent contradiction that (poor) PRI-voting states would have higher public spending per capita; it does appear that this is the result of politics rather than income. In one of the models including only political variables and no GDP per capita, the PRI variable is found weakly significant and negative, and it is a logical result given that PRI-voting areas tend to be poorer on average than PAN-voting areas.

Real GDP per capita is a highly significant determinant of public spending in all formulations of the model at both levels of government, as expected. This means simply that wealthier states tend to spend more per person on public funding. In the specific Mexican context this is to be expected, as industrial states also tend to have higher requirements for public services due to the presence of more demanding users (businesses and more highly educated constituents than in poorer rural areas).

Finally, federal funding (state revenue from federal government) is a consistent and significant determinant of state spending, as expected. The federal government is the source of a large chunk of the states' total income, so it is expected to play a part in determining spending. According to these results, one peso from the federal government generates an increase in public spending that is in the range of 0.58 to 1.06 pesos, which is a significant amount.

However, the main significance of federal funding in this model is to eliminate the effect of federal income, and determine whether the political variables are still significant after I account for the most evident determinant of spending: income. The result is that the

political variables are consistently significant at both federal and state levels even after the addition of state federal funding to the model.

Apart from power-sharing, explained above, the addition of the federal funding variable does not appear to make a difference to the significance of the other political variables. This shows that this model is robust to a large degree, and confirms that political variables play a role in determining the public spending of states.

5.6.3 Regression analysis at municipal level

The municipal-level study supplements the above analysis by providing a micro-level view of the same issues. It is argued that municipalities are the correct level of aggregation for economic calculations in Mexico, due to the large differences in economic conditions even within states. Therefore, I provide also this set of calculations at the municipal level.

Reliable data from municipalities is scant, and currently publicly available for very few years. Therefore, these calculations with one year of data sacrifice the time series element in order to incorporate the municipal-level data. I include data from Mexico's over 2,400 municipalities for one year (2002). I have run the same model as above but with cross-section data, with the same controls for multicollinearity and heteroskedasticity.

For comparison, I have included the same variables as above. The effective number of parties variable and the power-sharing and PRI dummies have been based on the year 2002, and where a 2002 figure was not available, 2001 or 2003 were used. In Puebla, Veracruz and Sinaloa, 2004 was used, and Zacatecas had no relevant information available on mayors for that time period. The election dummy is fully based on the year 2002, as are population, GDP per capita, and all public finance indicators.

The results are as presented below, similar to the findings from the previous section, and robust across different models. I have added infant mortality and municipal area as control variables for additional robustness testing, and to ensure that standards of living or geographic considerations do not determine the outcome.

Table 5.14 Regression results, municipal level, cross-sectional, 2002.

Dependent variable: Annual spending per capita, pesos					
	1	2	3	4	5
Constant	1604.63***	1271.27***	-372.81***	-30.93	-32.95
Effective number of parties (mayors in state)	-56.72	-30.58	-13.80	-22.66	-19.32
Electoral cycle (mayoral election in 2002)	-127.59***	-108.58**	-76.35***	-91.06***	-90.30***
Majority of mayors in state from PRI (dummy)	414.00***	458.43***	89.09***	84.92***	88.10***
Power-sharing (state-municipal)	23.36	54.40	172.40***	168.13***	170.55***
Population of municipality		-0.00***	0.00	0.00	0.00
Municipal GDP per capita, pesos		0.06***	0.06***	0.05***	0.05***
Federal funding per capita, pesos			1.22***	1.23***	1.23**
Infant mortality per 10,000				-8.29***	-8.58***
Area of municipality, km2					0.01***
R2	0.04	0.06	0.87	0.87	0.87
Durbin-Watson	1.76	1.85	1.86	1.86	1.87
N	2280	2257	2386	2386	2386
T	1	1	1	1	1

Note: All models estimated with OLS.

5.6.4 Analysis of results at municipal level

The first conclusion is the same as in the federal and state models: that the addition of the municipality's federal income to the model gives a substantial improvement in the overall explanatory power. Again, income is the largest determinant of spending. The electoral cycle, the PRI variable and the power-sharing variable remain significant, which again shows their importance in determining public spending. However, the effect of all the political variables is tempered when the federal funding variable is added: the coefficients of effective number of parties, electoral cycle, and the PRI variable all fall drastically.

The effective number of parties is insignificant, as it largely was in the state and federal models. This suggests that the level of political competition, hegemony or lack thereof, does not reliably help determine public spending.

However, a related variable, power-sharing is consistently positive, which suggests that if the state congress and mayor are from different parties, public spending will be higher. This is consistent with the battleground argument from above, and suggests that like state level, also municipal-level income is affected by the political conditions in the municipality. This confirms the conclusion from the state-level analysis that local levels of government tend to pay more attention to political competition, which is likely to indicate the presence of some form of preferential treatment not in line with the Mexican public finance rules.

Thus, the effective number of parties is insignificant for public spending, but power-sharing is significant. This paints an interesting picture of the Mexican political landscape. In other words, the involvement of several parties horizontally (within a level of government) is less important for public finance distribution than the involvement of several parties vertically (between levels of government).

The first conclusion is that it is critical to have several parties present in the political process. However, it appears that even a hegemonic control by one party of one level of government (low effective number of parties) does not necessarily influence public finance in any significant way, and therefore in this model, whether elections are landslides or near-ties is irrelevant to how public finance is distributed. Ultimately, it appears that the existence of a close runner-up does not produce a control mechanism.

The low significance of the runner-up at municipal level can also be explained by the fact that a municipal assembly cannot be divided. It is exclusively controlled by the winning party, and the top candidate of the winning party automatically becomes mayor. This is also the case in the "effective number of parties" as it was defined here: only one party can win the presidency, and there is no second prize. The state level was here the only level capable of giving formal positions to the runner-up (seats in state congress), and the state level was the only level at which effective number of parties was significant.

Thus, it is possible that close competition may produce better electoral campaigns, help inform the voters and indirectly produce better monitoring, but there is no evidence of

municipal governments respecting bipartisan preferences for funding decisions once in power. This is especially the case if they are not forced to do so, for instance in the institutionally single-party municipal assembly. Here we find yet another example of controls that have been implemented at federal but not state level: in the Senate, the first minority rule ensures that each state is represented by senators from both the winning and second parties, and proportional representation is a similar mechanism in the Chamber of Deputies. The municipal level is not similarly controlled. Thus, it is logical that the effective number of parties at municipal level is not significant.

On the other hand, the power-sharing variable shows that there is an electoral control mechanism in the vertical dimension: different parties controlling different levels of government act as checks and balances to each other. This shows that control of any level of government can be useful to a party if it wants to influence policies, even if it is not controlling the most important branches like the presidency, state governorship, or the Chamber of Deputies.

The coefficient of the power-sharing variable remains positive, meaning that different parties controlling the state congress and the municipal assembly lead to higher spending by the municipality. In the context of the state model, this was interpreted as a possible "battleground effect" to fund contested areas. This is a possible interpretation also in the municipal context: when a mayor and municipal assembly are working with a state government from a competing party, and possible neighbouring municipal governments from competing parties, the municipality may be tempted to attempt to secure the party's local position by spending.

The concept of vertical versus horizontal multipartyism is interesting when reflected in the context of the Mexican transition to democracy. The first chinks in the armour of the PRI hegemony were not presidential or senatorial candidates, but politicians at the municipal and state level. It has been documented, as recounted in Chapter 2, that the dwindling hegemony "permitted" a few non-PRI victories in the late 1980s, so as to avoid outright fraud or risk open conflict. However, a less documented fact is that there were non-PRI mayors around the country much earlier, the first in Michoacán in 1946 (Bruhn, 1996). It appears that PRI allowed these to happen, because they were not considered a threat to the national hegemony. However, it is possible that these mayoralties, and later governorships, played an important part in eroding the hegemony; more so than is currently

acknowledged. These results regarding public finance indicate that diversity in the levels of government can have a significant influence on the practicalities of governing.

This brings us to the final political variable: the PRI dummy. If the majority of PRI mayors in the same state are from PRI, municipalities in that state are consistently and statistically likely to spend more per capita than if the majority of mayors is from a different party. With this dataset, it is unfortunately not possible to extricate the effect of each particular municipality. Nonetheless, this result corroborates the findings above, and shows higher statistical significance that at either federal or state level. This is likely to be an additional indicator of the lack of transparency at municipal level, and a likely result of a situation where PRI mayors are led to understand that they can spend liberally.

The electoral cycle variable is negative throughout. In the results above, the election dummy was defined as the actual election year, instead of the year prior to the election year, because mayoral elections tend to have shorter campaigns than state or federal ones. However, giving the electoral variable the same positive lag of one year as in the federal and state models made no significant difference to the municipal results. This shows that the municipal election variable has the same sign as the federal model (negative), but different from the state model (positive): spending is significantly lower in states with an election in the year of study than in states without a local election in 2002.

This result is likely to be due to a selection bias of the states that had an election in 2002, and it is therefore possible that the electoral cycle result at the municipal level is spurious. A t-test confirms that the three electoral groups shown in Figure 5.9, Cycle 3 (with a mayoral election in the year of the data) is significantly different in terms of spending per capita from the other cycles (with a t-statistic of -3.05, significant at 99% level of confidence). The group with elections in 2002 is, for an unknown reason, a lower spender than the others, and the multivariate analysis was unable to eliminate this effect. Therefore, it is likely that the group with elections in 2002 was a biased selection, due to the historical accident of certain states choosing a particular election pattern.

Finally, the control variables are significant and carry the expected signs with stable coefficients. GDP per capita is positive, and it was expected that wealthy municipalities would spend more, for reasons outlined above. Infant mortality is negative, and as it is an inverse indicator of the quality of public services, this is the expected sign. Finally,

municipal area is significant and positive, meaning that larger municipalities spend more per capita, most likely due to lower population density in desert and mountain conditions, and therefore the need to build more facilities per capita to ensure universal access.

5.7 Conclusion

To what extent does politics influence the distribution of public finance in Mexico? In this chapter, I have analysed several aspects of the Mexican political arena together with public finance. I tackle these questions through three key concepts: political competition, different levels of government, and spending rules of government funding.

The key finding of this chapter was that governing parties tend to be more generous in their public spending when political competition is present. I found that there is statistical evidence of this at all levels of government.

Thus, governing parties are more generous with public funding where there is competition. The main explanation for this has been implicit throughout the chapter: parties are maximising votes, and public finance is seen as a way to attract voters. In comparing two different indicators of political competition – one established by Laakso and Taagepera (1979) and one proposed in this research – I find that the key issue in political competition is the threat perceived from the runner-up. In other words, political influence in public finance is most likely to be found in settings where competition between the top two parties is close.

Based on the statistical information presented in this chapter, I was unable to draw definitive conclusions regarding two key issues: the differences between parties, and the differences between levels of government. These findings incite further questions, and especially the topic of levels of government is interesting. If federal and local politics are equally transparent, and the federal government is making a concerted effort towards transparency, how are the states achieving such a level of transparency so as to be statistically indistinguishable from that of the federation? How are the states managing to make what appears to be a coordinated effort, without a legal framework to implement it? In the absence of an obligation for each state to improve its transparency, what are the incentives to do so? Is my perceived "increased transparency" at state level indeed a

coordinated effort and uniform development, or is it the result of a few states making vast improvements whilst some states show very poor progress?

These questions lead to another one: What types of states show evidence of politically influenced funding? In this chapter, I initially offered the answer that low-income states are less likely to monitor their politicians, because monitoring incurs a cost. However, as I showed in Figure 5.6, poor states are diverse as to their public finance levels, whereas wealthy states tend to resemble each other. Also, I showed that poor states display less political influence in their public finance than do wealthy states (Tables 5.7 and 5.8). Therefore, political interference in public finance does not appear to be distributed with the same pattern as wealth. I thus believe there is another explanation for higher presence of political influences in particular states, and lower in others.

Finally, in Section 5.5, I found that there is an item of public finance (*participaciones*) that is especially subject to political pressures. This gives an indication that public finance could be the key to the differences between states, and I base the remainder of this thesis on that idea. In Chapter 6, I therefore construct a statistical analysis of poverty, public finance, and politics, in attempting to explain the relationships between these factors.

Chapter 6. Is there a vicious circle of poverty and federal finance?

I ended the previous chapter with the conclusion that political influence exists in public finance. The key finding was that high political competition correlates with higher public finance levels. From this I concluded that there is no evidence of the presence of the Mexican clientelism of old, where the ruling party would reward its supporters with government money, in order to exclude rival parties. However, political influence in public finance remains, as there are statistically significant differences in public funding between states of different political structures.

I argued in Chapter 5 that political competition creates high public finance, because political parties regard public finance as campaign funding, and therefore invest the most in closely contested states. The fact that state spending, and also some specific items of state revenue (e.g. *participaciones*), is dependent on political allegiances means that federal funding is still allocated on the basis of political considerations, and not based entirely on the official distribution formulae. Therefore, the nature of politically motivated funding has changed, from vote-buying to battleground funding, but politics nonetheless remains a relevant issue in public finance. In other words, it is possible that political power is still "bought", albeit not through the same mechanism as during the PRI hegemony.

I also found in Chapter 5 that spending rules help reduce this political influence. In the present chapter, the focus is on how this happens, and what the implications are for poverty. I believe the main mechanism by which politics influences poverty is through public finance. Therefore, I now leave the politics aside, and focus on the circumstances by which public finance is distributed, and especially focus on the relationship between public finance and state wealth.

The relationship between federal finance and state wealth is relevant, because federal finance forms an unusually large part of Mexican state revenue. Given that there is political influence in federal finance, it is therefore likely that political influence indirectly plays a part in state wealth. In other words, politics indirectly determines which states develop economically.

In order to tackle the question of federal finance and state wealth, I asked the following questions in Chapter 4:

Question 5. What are the main determinants of aportaciones? Is poverty relevant?

Question 6. What are the main determinants of poverty? What is the role of public finance?

Question 7. Is spending skewed as a result of federal funding?

Question 8. Do spending rules aid in directing spending to socially optimal ends?

The conceptual framework for this hypothesis is the circular interaction between public finance and poverty. In this chapter, I show empirically that such a circle exists.

Figure 6.1 Circle of poverty
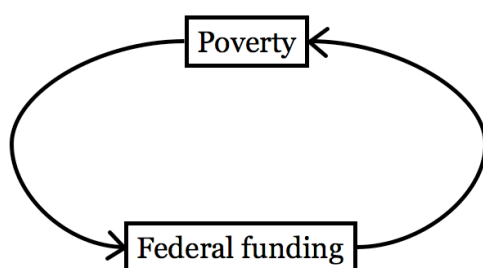
In Mexico, public finance since 1998 has been geared towards poverty alleviation, a change from earlier discretionary funding, which was often politically motivated. Ramo 33 was intended to help poor states rise out of poverty with the help of the federal government, as well as tightened rules for the spending of federal funding in order to force it to be used for the public good. However, my core argument is that even though public finance is directed toward the poor states, at the same time poor states remain poor, and I argue it is in part because of how public finance is distributed and the effect it has on the incentives in the political system. Ramo 33 funding has not been highly successful in reducing inequalities or reducing poverty in poor states. Wealthy states are able to generate growth, but poverty persists in poor states, and in over a decade of its inception, Ramo 33 has not helped reverse this trend.

In this chapter, I carry out a set of regressions to show why this occurs. However, I begin by answering a few basic questions on the allocation of public finance, and then proceed to the multivariate analysis.

6.1 Do *aportaciones* and poverty coincide?

The key assertion of this chapter is that poverty and public finance cause each other in Mexico. Therefore, I begin with basic charts on their bivariate correlations, and these will underpin the multivariate analysis later in the chapter.

Figure 6.2 Aportaciones (as a percentage of state revenue) and household consumption, 1998-2007
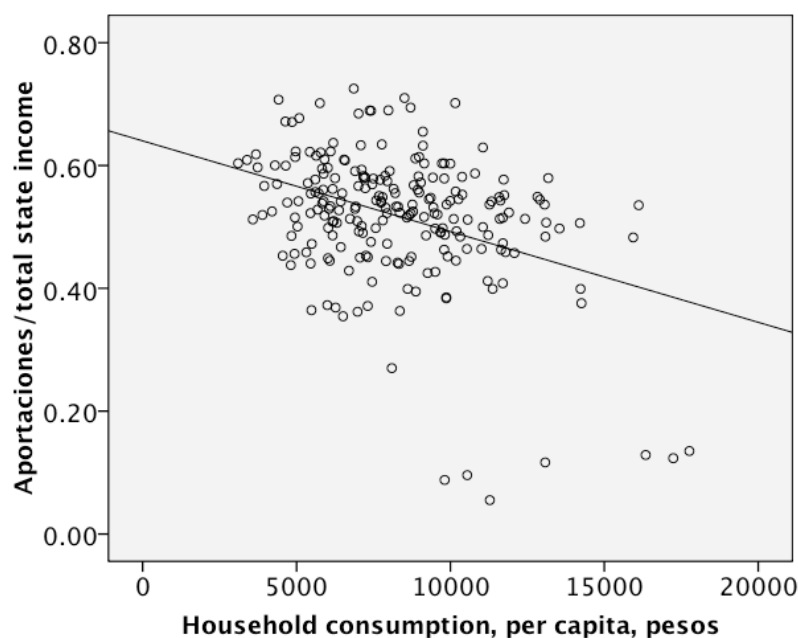
Source: Consumption data from ENIGH, all others INEGI/EFIPEM

Aportaciones appear to be roughly correlated with levels of poverty, as they should be as per Ramo 33, so this is unsurprising. Higher reliance on *aportaciones* corresponds to lower consumption per capita, so that poor states tend to receive large amounts of their finance in *aportaciones.*

In Table 6.1 below, I choose ten states to represent the "rich" and ten "poor" states. However, I believe that for such a division it is essential to include both a macroeconomic and microeconomic factor, because many states perform very differently on these two measures. Many states (e.g. Campeche with oil and Chihuahua with maquiladoras) have

high GDP per capita which does not trickle down to consumption. On the other hand, a number of states have higher consumption than their GDP would suggest: this usually indicates a state that receives a high degree of remittances (e.g. Durango and Zacatecas), informal income (e.g. Baja California Sur for tourism), or illicit money (Sinaloa). Therefore, in assessing which states are wealthiest or poorest, it is important to include both aspects.

I choose the ten richest and poorest states by ranking the states on the basis of their 2004 GDP per capita and by 2004 per-capita consumption, and then adding each state's two rankings together. For example, Distrito Federal is number 1 in both rankings, so the sum of ranks is two. The 10 states whose sum of the ranks is lowest get classified as the richest, because in terms of combined GDP per capita and consumption, they are the best off. The 10 poorest are the ones that are worst off.

The wealthiest states have lower *aportaciones/* state revenue than the poor states:

Table 6.1 Reliance on aportaciones, 2004 (Rankings: 1=highest, 32=lowest)

10 wealthiest states (ordered by sum of ranks)					10 poorest states (ordered by sum of ranks)				
State	GDP rank (1)	Consum rank (2)	Sum of ranks (1+2)	Aport/ State revenue	State	GDP rank (1)	Consum rank (2)	Sum of ranks (1+2)	Aport/ State revenue
D. Federal	1	1	2	13%	Veracruz	25	15	40	53%
Nuevo León	2	7	9	40%	México	21	23	44	53%
B. Calif. Sur	10	2	12	51%	San Luis P.	20	27	47	59%
B. California	8	4	12	46%	Puebla	22	28	50	55%
Querétaro	11	3	14	55%	Michoacán	26	25	51	63%
Sonora	9	6	15	41%	Tabasco	28	26	54	41%
Quint. Roo	5	10	15	46%	Tlaxcala	29	29	58	53%
Coahuila	4	11	15	55%	Guerrero	30	30	60	62%
Durango	15	5	20	58%	Oaxaca	32	31	63	70%
Jalisco	13	12	25	45%	Chiapas	31	32	63	62%

Source: Consumption data from ENIGH, all others INEGI.

It is clear that the wealthier states receive smaller proportions of their income in *aportaciones*, which is logical, considering that they have lower proportions of the population in need for poverty alleviation.

This is in accordance with the notion that *aportaciones* are a poverty-reduction tool. However, it also provides a key to my argument that *aportaciones*-reliant states find it hard to attract other types of revenue and thus cannot reduce their dependency on *aportaciones*.

A t-test confirms that rich states receive a smaller proportion of their revenue as *aportaciones*, and therefore that poor states are more dependent on *aportaciones* than wealthy states. However, there is no statistically significant difference in *aportaciones* per capita between rich and poor states. (To define rich and poor states, I have used the ten richest and ten poorest, based on 2005 GDP per capita.)

Table 6.2 Do rich and poor states differ in levels of aportaciones? 1998-2007

Variable	μ$_{RICH}$	S$_{RICH}$	N$_{RICH}$	μ$_{POOR}$	S$_{POOR}$	N$_{POOR}$	t-stat	Interpretation
Aport per capita	3049	1429	100	3305	1351	100	−1.30	Not significant
Aport/state revenue	0.44	0.14	100	0.55	0.08	100	−7.15***	**Poor higher**

The result shows that for an analysis comparing *aportaciones* between rich and poor states, the variable of interest is the proportion that *aportaciones* occupy in state revenue, rather than a per-capita measure. The reason is threefold.

First, when the key issue is dependency on federal funding, it is the proportion in the budget that is key, and not the amount. I argue that federal funding distribution leads to poor states receiving funding that is not perceived as earned, and when "automatic" funding outweighs "earned" funding, it leads to inefficient spending and poverty. The key is not the per-capita amount, but how heavily *aportaciones* weigh in the entire budget.

Second, I argue that the spending behaviour of states varies depending on what proportion of their revenue comes with spending constraints (as with *aportaciones*). Again, I focus mainly on the proportion that *aportaciones* occupy in state revenue, rather than per-capita amounts.

Third, per-capita amounts are misleading in the case of Mexico, because *aportaciones* are distributed on a household level and household sizes vary systematically between rich and poor states. A poor state is likely to receive more "*aportaciones* per household" than a rich one. However, the typical family in wealthy states is small, such as Distrito Federal with 1.65 children per woman, whereas a typical household in a poor state is large, like in Guerrero with an average 2.64 children per woman (CONAPO, 2010). In addition, households in poor states are more likely to house additional inhabitants, such as grandparents or children's spouses (INEGI, 2000).

Therefore, when the poor state's larger peso amount per household is divided between 6

persons and the rich state's between 4.3 persons (assuming two adults per family), the difference between *aportaciones* per capita in rich and poor states is equalised to an extent that it is no longer statistically significant. A per-capita measure is therefore misleading. This gives a third reason why *aportaciones* are better measured as a proportion of state revenue rather than on a per capita basis.

Thus, *aportaciones* and poverty do coincide, when *aportaciones* is measured as a proportion of state revenue. In other words, *aportaciones* dependency coincides with poverty. Given that *aportaciones* is a funding awarded on the basis of poverty indicators, this finding is not surprising.

6.2 Do *participaciones* and wealth coincide?

In the previous section, I showed that poor states tend to be more dependent on *aportaciones* for their revenue than wealthy states. This is logical, as *aportaciones* are a poverty-reduction fund. *Participaciones*, by the same token, should not be directly related to poverty, and they are not:

Figure 6.3 Participaciones (as a percentage of total revenue) and household consumption, 1998-2007
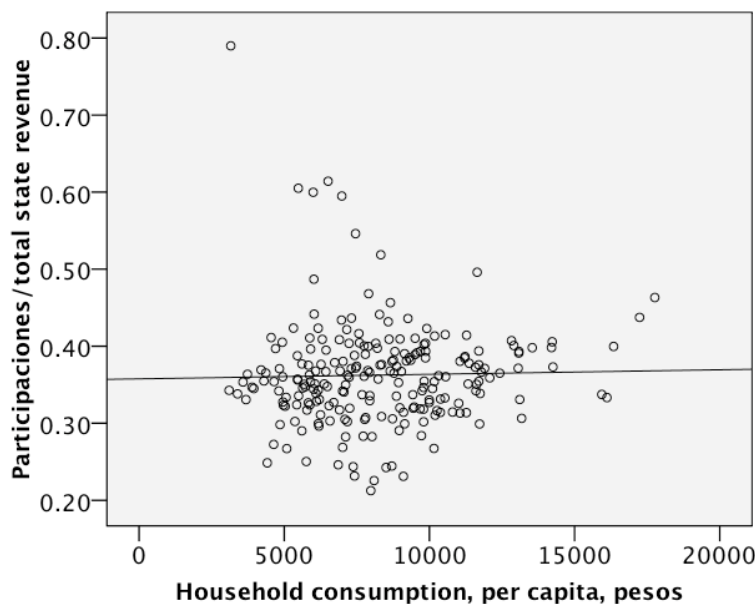
There is no apparent link between household consumption and the amount of *participaciones* a state receives. This is again logical, because *participaciones* are not distributed on the basis of microeconomic indicators, but on economic growth and tax revenues, aimed at

Mexico's engines of growth, and the states that best contribute to the common pool of tax revenue. However, there is also very little linkage between *participaciones* and taxes, and *participaciones* and GDP per capita. *Participaciones* is a complex fund, and clearly not dependent directly on any of the variables I analyse here. I repeat the above analysis of means for *participaciones*:

Table 6.3 Do rich and poor states differ in levels of participaciones? 1998-2007

Variable	μ_{RICH}	S_{RICH}	N_{RICH}	μ_{POOR}	S_{POOR}	N_{POOR}	t-stat	Interpretation
Particip per capita	2569	863	100	2183	1335	100	2.43**	**Rich higher**
Particip/state revenue	0.37	0.06	100	0.36	0.08	100	1.14	Not significant

Table 6.3 shows that *participaciones* per capita are higher in the rich states, but that there is no significant difference in how dependent rich and poor states are on *participaciones*. *Participaciones* therefore do not form a larger part of the rich states' budget than they do for the poor states. It is evident that *participaciones* are not the privilege of only wealthy states: also a state with low consumption can receive high *participaciones*, given the right conditions. A typical example is a state with oil revenue and therefore high GDP growth, but it is growth that does not trickle down to household consumption (e.g. Campeche).

In addition, I found above that the poorest states are significantly more dependent on *aportaciones* than the richest states. Therefore, it is a reasonable conclusion that federal funding, overall, forms a larger part of the revenue of the poorest states than it does for the richest.

6.3 Budget structures in Mexican states

I find no statistical evidence for a direct link between *participaciones* and consumption, or between *participaciones* and GDP. The likely reason for this is that wealthy states' budgets tend to comprise of many other sources in addition to *participaciones*. The empirical work in this chapter is primarily dependent on the interaction of the different budget items, and there are large differences between the components of total revenue in different states. These in turn influence the different spending constraints states face, and therefore their possibilities for different types of spending. I start with a summary of the budget structures of the three largest budget items.

Table 6.4 Descriptive statistics of budget items, 2006

	Aportaciones/ state income	Participaciones/ state income	Taxes/ state income
Median	52%	35%	2%
Minimum	14%	23%	0.7%
Maximum	70%	50%	19%

Source: INEGI/EFIPEM.

Federal funding (defined as the total of *aportaciones* and *participaciones*) forms the largest part of the typical state budget, and in every state, both funds are the two most important sources of income. Taxation, on the other hand, forms a much smaller part, but is still unequivocally the third largest budget item across Mexico.

The charts below illustrate two key issues on budget items that form the foundation of this chapter. First, federal funding forms the vast majority of every state's funding, and this justifies the focus of this thesis on federal funding as opposed to taxes and other income. Second, the differences between states are stark, in terms of how their funding structures influence their spending decisions. Especially the lack of non-federal funding in poor states is key. Distrito Federal and Nuevo León are included as examples of the wealthiest states, and by most accounts, Chiapas and Oaxaca are the poorest in Mexico.

Figure 6.4 Examples of states' revenue structures, 2006
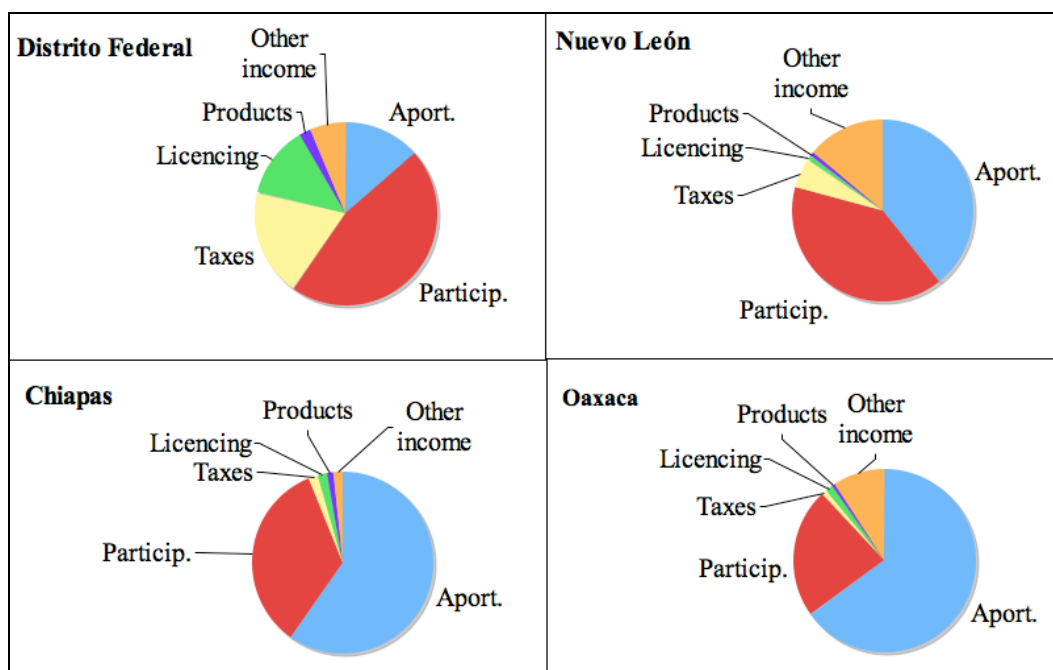
Source: My elaboration from INEGI/EFIPEM.

The revenue sources of the poor states are far less varied than those of the wealthy states. Oaxaca and Chiapas are substantially dependent on *aportaciones* and *participaciones*. On the other hand, Distrito Federal and Nuevo León with wealthier inhabitants and better institutions tend to have higher tax revenue as well as other enforceable income. The wealthy states receive more non-federal funding, such as state taxes, which are a negligible part of the budgets of Chiapas and Oaxaca. Poor states, tend to form large parts of their budgets from federal sources, in the absence of other substantial sources such as taxation, sales of the state's products (e.g. natural resources), or official income such as licensing. They are extremely dependent on federal funding. Over the period of study, 24 states of 32 were consistently receiving over 90% of their income through federal funding.

I argue in this chapter that federal funding and poverty are persistently linked on one hand because of the difficulty poor states encounter in raising non-federal finance, and on the other hand because federal funding encourages inefficient spending.

6.4 Why cannot poor states raise non-federal funding?

Funding is scarce for poor states in Mexico. This was one reason for the centralisation of taxes to the federal government, as this was seen as a way to share national revenue between all states. As is evident from Figure 6.4, state tax revenue and other non-federal sources of funding are not widely available to poor states.

Figure 6.5 Taxes and social marginalisation, 1998-2007
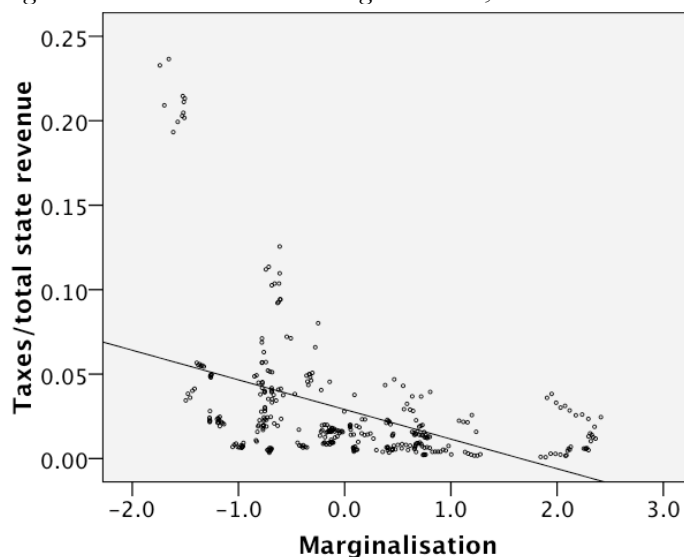
Source: Taxes and state revenue from INEGI, marginalisation from CONAPO.

States with high marginalisation (high poverty) tend to have low local tax revenue, and all states with noticeably high tax revenue (above 5% of total revenue) have a negative marginalisation index. Mexico's poor states are simply environments where tax collection is very difficult. A high incidence of the informal economy, a low level of education and a rural setting are all causes of low tax revenue.

A t-test shows that tax revenue is indeed significantly different in rich and poor states:

Table 6.5 T-test: Do rich and poor states differ in levels of local tax revenue? 1998-2007

Variable	μ_{RICH}	S_{RICH}	N_{RICH}	μ_{POOR}	S_{POOR}	N_{POOR}	t-stat	Interpretation
Taxes per capita	377	450	100	86	59	100	6.41***	Rich higher
Taxes/state revenue	0.05	0.05	100	0.02	0.03	100	4.36***	Rich higher

Undoubtedly, these results show that rich states receive significantly larger amounts of local tax revenue, both in terms of per-capita amounts as well as in proportion to total state revenue. Therefore, it is a reasonable claim that poor states are more reliant on federal funding for their state budgets.

6.5 Is federal funding spent less efficiently?

The key argument of this thesis is that high dependence on federal funding creates conditions where poor states cannot rise out of poverty. I have shown above that dependency on *aportaciones* is linked to poverty, which is logical for two reasons. Firstly, *aportaciones* are distributed based on poverty so that poor states receive more. Secondly, the side effects of poverty, such as a large informal economy and a poorly educated workforce mean it is difficult to raise other types of funding such as *participaciones* or taxes. These two factors together lead to high dependency on *aportaciones* in poor states.

In this chapter, I start with the notion of aid dependency to show that being dependent on federal finance leads back to poverty. Key (1937, cited in Cho and Wright, 2007) describes a number of problems resulting from dependency on federal funding, and I base my argument on these. First, socio-economic policy is different from what it would be with self-generated funding. Second, tax collection efforts are weaker, as the marginal benefit of improvements is low. Third, monitoring of spending is likely to be low, as long-distance monitoring is costly. Finally, weak incentives for fiscal efforts and lack of efficient monitoring create two strong reasons for states to push for expansion of federal funding.

In an environment where heavy fiscal centralisation is strongly in the interest of most of the relevant actors, it is likely to persist. However, these factors (particular policy mix, low tax collection, low monitoring) are also likely to lead to lack of economic development. The policy mix forced by *aportaciones* spending rules (towards poverty reduction) is not conducive to development of commercial activity. Low tax collection and low monitoring maintain weak institutions, making commercial activity more difficult and costly. Therefore, factors stemming directly from over-dependency on federal funding are also factors that discourage the development of commercial activity. This explains why the states most dependent on federal funding are also persistently the poorest in Mexico.

As a basis for comparing different types of sources of income, I use the three named above: *aportaciones*, *participaciones* and taxes. A basic test of the relationship between funding and spending is the correlation between each revenue item and public spending, to see whether dependency on a particular funding encourages spending.

A comparison of *aportaciones* and *participaciones* against spending shows that *aportaciones* is positively related to spending, whilst *participaciones* is negatively related:

Figure 6.6 Aportaciones and state spending
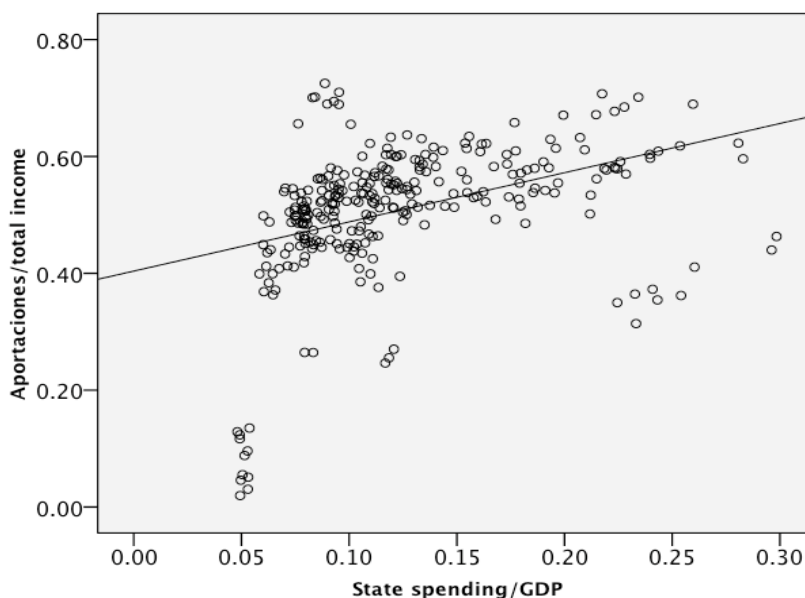
Source: INEGI/EFIPEM

Figure 6.7 Participaciones and state spending
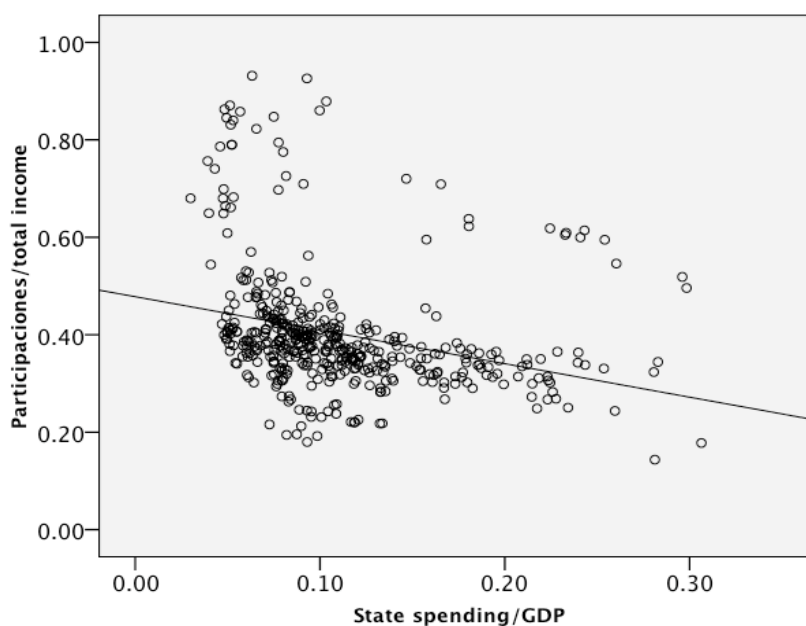
Source: INEGI/EFIPEM

From Figures 6.6 and 6.7, it seems clear that there are differences in the spending patterns between the types of funding. In Figure 6.6, states that receive a large proportion of their income in *aportaciones* tend to have higher spending/GDP, whereas *participaciones* correspond to lower spending/GDP. This means that Key's theory corresponds better to *aportaciones*: highly dependent states are likely to have lower tax collection, less monitoring (due to its cost), and also skewed policy (due to the spending rules). The *aportaciones*-reliant states have also historically been the ones with the greatest incentives to push for maximum revenue sharing, as they are the net gainers.

On the other hand, *participaciones* correlate with lower spending/GDP. This suggests that it does not necessarily conform to the theory where federal funding dependency has negative consequences, whereas *aportaciones* does. This is a possible perception by states. *Participaciones* is distributed on the basis of positive achievements (economic growth, tax collection) whereas *aportaciones* distribution is based on negative attributes (low-quality education, poor health care and inadequate housing). This can lead to a perception that *participaciones* has been earned through good economic progress, wheras *aportaciones* are possibly perceived as a type of aid. Under a perception that *participaciones* has been earned whereas *aportaciones* is automatic, the flypaper effect theory (Hines and Thaler, 1995 and references therein) would predict exactly the outcome found in Figures 6.6 and 6.7 that "earned" funding

discourages spending and "aid" encourages it.

This highlights the differences between *aportaciones* and *participaciones*. It shows that Key's theory should not be simply applied to all types of federal funding, but that the two types of funding should be treated separately in the analysis, as they are likely to carry separate mechanisms. Thus, for the remainder of this chapter, I assume that the federal funding dependency theory holds for *aportaciones*, and that *aportaciones* is a catalyst to policy skewness (inefficient spending). However, I also keep *participaciones* in the analysis, because it is the interplay of these two funds that in fact generates the circular effect.

6.6 Multivariate analysis

In the previous sections, I have shown why there is reason to believe that federal funding and low income cause each other in Mexico. By law, poverty leads to receipt of *aportaciones*. *Aportaciones*, on the other hand, lead to lack of economic development by the mechanisms detailed above.

Since the argument is for a circle, I base this section on two regressions. The first has poverty as the dependent variable, and the second has federal funding. This is with the goal of establishing the determinants of each, and seeing if poverty and federal funding have a statistically significant influence on each other even when other variables are taken into account.

6.6.1 Does poverty determine federal finance?

I begin with the regression testing whether poverty leads to federal funding. The aim of this test is to find if federal funding in reality is directed to the poorest states, as stipulated in Ramo 33, and therefore whether poverty directly causes high federal funding in the state budget. In other words, the first regression tests the left-hand side of the circle:

Figure 6.8 Circle of poverty
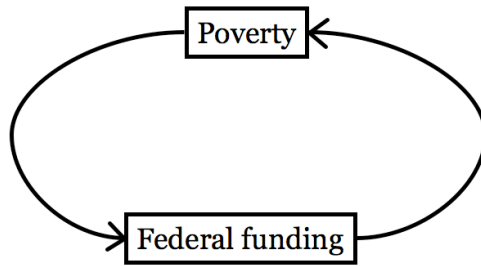
In Sections 6.1–6.3, I found that *aportaciones* is the only type of federal funding that correlates positively with state wealth, whereas *participaciones* and taxes have a different relationship to it. This is consistent with the notion in the Law for Fiscal Coordination that poverty determines *aportaciones*. The analysis in this section is geared towards a multivariate analysis of the same: establishing whether poverty leads to *aportaciones*, as per the distribution rules.

Dependent variables

I use three different dependent variables to distinguish between three different effects of poverty on public finance. These are:

- *aportaciones* per capita
- *aportaciones* as a percentage of state revenue
- federal funding (*aportaciones* and *participaciones*) as a percentage of state revenue.

Aportaciones per capita measures the direct contribution of the federal government to improvement of states' social infrastructure. I include it to see the relationship in multivariate terms, even though in the t-test I found that *aportaciones* per capita does not correlate with poverty.

Aportaciones as a proportion of state revenue, on the other hand, tests the theory that high poverty leads to a high proportion of *aportaciones* in the budget. Per Figure 6.6, *aportaciones* are considered an "automatic", aid-type source of funds, which is a type of funding that makes the recipient prone to over-spending, according to Key's theory. Therefore, the implication is that poor states are more likely to overspend because the structure of their budgets encourages it. The t-test (Table 6.2) gives the result that poor states are more

dependent on *aportaciones*, and therefore that is the hypothesis here.

Finally, federal funding as a proportion of state income is included as a third dependent variable. This gives a test of Key's federal funding dependency theory with the full set of federal funding, rather than just *aportaciones*. Thus, the aim with this variable is to see whether federal funding as a whole behaves in the same way as *aportaciones*, or if there is a difference.

Independent variables

The main independent variable capturing poverty is household consumption, calculated from the ENIGH (*Encuesta Nacional de Ingresos y Gastos de los Hogares*, Mexico's National Enquiry into Household Income and Consumption). It is a household survey covering between 11,000 and 24,000 households within Mexico, and the years available for this study are 2000, 2002, 2004, 2005 and 2006. I have interpolated 2001 and 2003 with simple averages from the two surrounding years to enable the use of Generalized Method of Moments (GMM).

The limitations of this variable for state-level calculations must be recognised, as the household sample is only representative in a few states with very large numbers of data points: the smallest representative sample is Veracruz in 2000, with 1,998 households.[3] However, this is the only source of household consumption or income data currently available in Mexico for a reasonable time series, and therefore the best available indicator of poverty.

Consumption is expected to have a negative sign, as poor (low-consumption) states tend to receive a greater proportion of their income as *aportaciones*. To capture the difference between consumption and the actual quality of public services, I also include infant mortality, which is expected to have a negative coefficient also, for the same reason as consumption. Prior to the choice of including both as independent variables, I have checked that they are not so highly correlated as to present a problem of multicollinearity (bivariate correlation 0.69).

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[3] The datapoints with representative samples at state level are the following: in 2000 Veracruz; in 2004 Distrito Federal and Nuevo León; in 2005 Puebla, Sonora, Tabasco and Veracruz; and in 2006 Guanajuato and Veracruz.

I also include infant mortality, as it is an alternative poverty-related variable. I hypothesise that infant mortality and *aportaciones* have a negative relationship, as *aportaciones* should be directed at poor states, and poor states tend to have higher infant mortality.

The selection of the remaining independent variables is based on the budget items. I include the two major components of income considered in the correlation analysis: *participaciones* and taxes, and in addition, debt. *Participaciones* are included to account for a crowding-out effect between the two types of federal funding, and are therefore expected to have a negative relationship with *aportaciones*. Taxes are expected to have a negative sign for the same reason, and also because poor areas tend to have low taxation due to the incidence of informal work.

Spending as a percentage of GDP is included, as per the above findings, to test for the overspending hypothesis. The aim is to find whether states receiving larger amounts of federal funding also have higher public spending, which would be in line with the hypothesis that federal funding is more easily spent than other types of funding. Therefore the expectation is that federal funding dependent states will overspend, and that spending/GDP has a positive coefficient.

Control variables

Debt is the fourth-largest source of funding for states, and I include it as a control variable, because it can influence how the other funding items behave. Debt can, for example, influence *participaciones* through economic growth. Including the debt variable improves the models, and therefore it remains in the model. If significant, it is expected to have a negative sign.

Real GDP per capita is included to eliminate the effect of state wealth, and test whether poverty and *aportaciones* have a particular relationship overall.

In addition, state population is included to control for the effect of small and large states.

I

nstrumental variables

A number of the independent variables are possibly endogenous to the equation: *participaciones*, tax revenue, debt, state spending, and real GDP per capita are all likely to affect *aportaciones*. Therefore, I include five instrumental variables in the model: variables that correlate with the independent variable but not with *aportaciones* or total federal funding.

I instrument *participaciones* with power-sharing (denoted as Powers. in Table 6.6). I found in Chapter 5 that power-sharing states receive more *participaciones*, but politics should not have a link to *aportaciones* which is a poverty-related funding source.

Tax revenue is instrumented with school attendance (School), and the two are related through human capital. A highly educated society is more likely to be employed in the formal economy, and more likely to earn enough to pay taxes. Schooling, on the other hand, does not have a linear relationship to *aportaciones*.

Spending/GDP, or the overall level of public spending, is likely to be affected by the state's proximity to a hub of economic activity, because with economic activity comes the demand for public services and infrastructure. Therefore, I use distance to the nearest economic hub as an instrument that is correlated with spending/GDP but not with *aportaciones*. I measure the Distance (Dist.) variable as the distance in kilometres of the state capital from the nearest economic hub, whichever is closest as the crow flies. For the purposes of this variable, economic hubs are defined as Mexico City or any point along the Mexico-US border.

For debt, I use the state's credit rating (Credit), which is likely correlated with debt but not with federal funding. Finally, for GDP per capita as a control variable, I add rainfall as an instrument. It is likely to be correlated with GDP per capita, but not with public finance.

Results

I run the model described in Sections 6.6.1.1–6.6.1.4 with the Generalised Method of Moments, in order to correct for both endogeneity and heteroskedasticity.

The results of the regression analysis are as follows:

Table 6.6 Regression results: Determinants of aportaciones and federal funding

Dependent variable	*Aportaciones* per capita, pesos			*Aportaciones/* state revenue			Federal funding/ state revenue		
	1	2	3	4	5	6	7	8	9
Consumption per capita, pesos (D)	0.07***	0.00	-0.03	-0.00	-0.00	-0.00	-0.00***	0.00	0.00
Infant mortality (D)	-111***	-278	-58	0.01***	0.01	0.01**	-0.00	0.00	0.01
Participaciones per capita		0.54***	0.55***						
Taxes per capita (D)		-0.30	0.49						
Debt per capita		0.42	0.04						
Spending/GDP		3845	17302**		-0.003	-0.95		-0.64	-0.01
Real GDP per capita, pesos			0.06*			-0.00			-0.00
Population			0.00*			-0.00			-0.00
Participaciones/ state revenue					0.25	0.55**		0.91***	1.56***
Taxes/state revenue (D)					-0.40	-1.13		-0.10	-0.71
Debt/state revenue					-0.60*	-0.50		0.20	-0.59
Aportaciones per capita (lag -1)	1.06***	0.69***	0.6***						
Aportaciones/ state revenue (lag -1)				-0.09	0.04	-0.00			
Federal funding/ state revenue (lag -1)							-0.12**	-0.05	0.01
Instruments		Powers.	Powers.		Powers.	Powers.		Powers.	Powers.
		School	School		School	School		School	School
		Credit	Credit		Credit	Credit		Credit	Credit
		Dist.	Dist.		Dist.	Dist.		Dist.	Dist.
J stat	25.63	18.17	9.84	20.34	15.22	8.34	20.60	18.02	10.99
N	32	31	30	32	31	30	32	31	30
T	5	4	3	5	4	3	5	4	3
Observations	160	124	90	160	124	90	160	124	90

Note: D denotes variable was first-differenced. All models estimated with GMM.

Does poverty determine federal funding?

Consumption and infant mortality are here the most relevant variables in assessing whether federal funding is based on poverty. Therefore, I begin with examination of these coefficients.

The answer appears to confirm that poverty is a significant variable in determining how dependent a state is on *aportaciones*. Infant mortality is another indication that the poorest states tend to be the ones most dependent on both *aportaciones* and federal funding in general.

The relationship between consumption and *aportaciones* is negative and significant, meaning that poverty leads to *aportaciones*, as per the hypothesis. The significance remains when other components of state income are added to the model, which means consumption remains significant even when variations in the proportions of different revenue items are accounted for. However, consumption becomes insignificant when GDP per capita is added. This most likely means that there is a correlation between consumption and GDP per capita (although at 0.53, the correlation is not high enough to denote multicollinearity). It is clear that consumption has a significant impact on a state's reliance on *aportaciones*: higher consumption means lower dependency on *aportaciones*.

The story is similar when *aportaciones* as the dependent variable are replaced by total federal funding (*aportaciones+participaciones*). Consumption again has a negative coefficient in one of the models. However, the significance of poverty in explaining total federal funding is smaller than for *aportaciones*. This is logical, considering that only *aportaciones* is determined by poverty, and *participaciones* is determined by other factors. Consumption is a major determinant of *aportaciones*, but not so for total federal funding, meaning that *participaciones* are largely determined by other factors, as established in both Chapter 5 and earlier sections of this chapter.

The key hypothesis was to test for the determinants of dependency on *aportaciones*, and it was found that consumption is significant. In addition, I tested for the determinants of the raw amount of *aportaciones* per capita, to see if the poorest also received higher raw amounts

in *aportaciones*. In Table 6.2, I showed that there is no statistically significant difference between *aportaciones* per capita in rich and poor states. I come to the same conclusion here, because in the models with *aportaciones* per capita as the dependent variable, consumption and infant mortality are only significant in the first model, but not in the two more elaborate models. Therefore, I continue with the assumption that poverty levels determine how reliant a state will be on *aportaciones*, but has no bearing on *aportaciones* per capita.

Infant mortality is significant in three models, and follows the same pattern as consumption. Where a state is highly dependent on *aportaciones* for its income, infant mortality is higher. The coefficients are, however, quite small: 100 to 250 infant deaths correspond to a one percentage-point rise in *aportaciones*/state revenue, which would be a large change given that the average level of infant mortality in the dataset is 22.4 per 1,000 live births.

The relationship between *participaciones* and federal funding/state revenue is clear, as the federal funding measure equals the total of *aportaciones* and *participaciones*. The coefficient is also logical, where one additional peso of *participaciones* yields an increase of between 0.9 and 1.6 pesos in total federal funding; it is logically expected to be close to one. Recall that

$$\frac{FederalFunding}{StateSpending} = \frac{Aportaciones}{StateSpending} + \frac{Participaciones}{StateSpending} \; .$$

Therefore a coefficient greater than one here would mean that a one percentage-point increase of *participaciones*/state revenue would also by default increase *aportaciones*. There is no reason why this should happen and these results suggest that it does not.

Taxes and debt are fully insignificant determinants of *aportaciones* as well as of federal funding in general. This result emerges after *participaciones* have been accounted for, and both non-stationarity and endogeneity have been eliminated. In other words, the proportion of total revenue that a state is able to collect from taxation (in other words, the quality of the state's institutional environment) has no bearing on how reliant the state is on *aportaciones*, once *participaciones* and poverty have been accounted for.

Real GDP per capita and population were included as control variables, but their significance and positive signs in model 3 of Table 6.6 confirm the theory of Hernández-Trillo and Jarillo-Rabling (2008) in a study focusing on one of the *aportaciones* funds (FAISM). They suggest that municipalities with larger populations receive more funding, as

state governments try to attract votes from large municipalities. They also theorise GDP per capita influences *aportaciones* distribution because wealthier states are likely to have greater influence over state officials, and they find evidence for this. I find no evidence that larger states are more dependent on *aportaciones*.

In summary, these calculations confirm the hypothesis that dependence on *aportaciones* is mainly determined by poverty and *participaciones*.

6.6.2 Determinants of state wealth

To examine the right-hand side of the poverty–federal funding–poverty circle (Figure 6.8), I turn to the determinants of state wealth and poverty, in order to find if federal funding is a significant cause of how wealthy a state is. This is the result I found in Sections 6.1–6.4, and therefore the hypothesis is that different forms of federal funding are the key determinants of state wealth.

Dependent variables

The key to this regression is a good measure of poverty and deprivation. However, measuring poverty in Mexico is challenging, and no single indicator is appropriate for this study. For the purposes of studying poverty on a sub-national level, few sufficient time-series exist. Headcount ratios tend to be available for international work only, on a national level, and available at state level with irregular frequency. Other indicators exist in Mexico, but each has severe weaknesses.

The most common state- and municipal-level measure of poverty in Mexico is social marginalisation. Social marginalisation is a common measure of socio-economic deprivation in Mexico, with availability from 1995, 2000 and 2005, a long but infrequent series, which needs to be interpolated for the use of GMM. Marginalisation is a complex index developed by the National Population Council of Mexico (CONAPO) to measure poverty specifically in the Mexican context. Its components include literacy, completion of primary school, housing (sanitary facilities, plumbing, electricity, running water, overcrowding, earth floor), the size of the locality the respondent inhabits, and household income. The aim is to measure socio-economic lag or lack of basic amenities, so this variable is measured conversely to consumption: high marginalisation means high poverty.

Secondly, household consumption is a common indicator of poverty, and is available for 2000, 2002, 2004, 2005 and 2006, so it requires only interpolation of the years 2001 and 2003. It has the advantage of being an internationally widely used indicator of poverty. However, a major disadvantage in a sub-national Mexican study is that the household sampling is not representative at state level, as detailed in Section 6.6.1. Therefore, this variable has the potential for generating misleading results. However, it is the only internationally comparable poverty variable that is available for Mexico at state level with a reasonably good frequency, and therefore I include it as one of three dependent variables.

The third variable measuring economic well-being is real GDP per capita. The weaknesses of GDP as a measure of household-level economic opportunities are well documented. However, GDP can provide a view to how federal funding correlates with economic activity at state level. Also, it is the only measure of economic well-being that is available in Mexico at state level with reliable annual data for a long time-series, and it is included for this reason.

Independent variables

The key independent variables are *aportaciones*/income and *participaciones*/income, as they form the federal funding that I theorise is responsible for continued poverty. *Aportaciones* are expected to have a negative coefficient, because in Section 6.1 it was found to correlate negatively with wealth.

Participaciones, on the other hand, are more complex. The scatterplot between *participaciones* and consumption did not show a clear correlation (Figure 6.3). The regression results in Table 6.6 did not show a clear correlation between dependency on *aportaciones* and dependency on *participaciones*. Key's hypothesis suggests that *participaciones* (as a component of federal funding) should contribute to poverty, and therefore that *participaciones* should be positively related to marginalisation, and negatively to consumption and GDP per capita.

Control variables

I include taxes/revenue because it is the third largest budget item, and taxes are expected positive due to the reality that wealthy Mexican states are better at tax collection than poor

states. Debt as a measure of financial stability is expected to be negatively related to GDP per capita.

In this regression, infant mortality is a control variable that proxies for the quality of public services. It is expected to have a negative coefficient with consumption and GDP per capita, and positive with marginalisation.

School attendance is included as a control variable as is typical in GDP regressions, but due to the infrequent collection of state-level data, it is only available for 2000 and 2005, and the points between these have been interpolated in a linear manner. This is expected to have a positive relationship with consumption and GDP per capita and negative for marginalisation, in line with the general theory of education and human capital in economic development.

Instruments

The most important structural problem in this regression model is heavy endogeneity. Poverty is a variable that can in itself determine a number of socio-economic factors, and in order to have the correct causality in the model, I use exogenous instruments.

Aportaciones are determined in part by housing conditions, which partly depend on consumption (the consumption figure includes housing expenditures), and therefore consumption in part causes *aportaciones*. I use the number of municipalities (denoted as Munic. in Table 6.7) as an instrument that influences *aportaciones*, but not household consumption. Consumption can also have a bearing on local tax revenue, and here I use power-sharing (Powers.) as instrument: in a power-sharing situation, the local governing party is unlikely to make an effort to raise funding for the competing party governing at federal level, and thus power-sharing can influence tax-collection efforts. However, power-sharing should have no bearing on consumption or the other dependent variables. Public debt may be endogenous, if a consumption boom requires new large public investments, and is instrumented with state credit rating (Credit) as in Section 6.6.1. Finally, poor access to health services makes it a determinant of infant mortality. Therefore, I instrument infant mortality with school attendance (School), which is usually directly correlated with infant mortality; however, the direct correlation with consumption and GDP is likely to be low.

Results

Table 6.7 Regression results: Determinants of state wealth

Dependent variable	Consumption per capita, pesos (D)			Social marginalisation index (D)			Real GDP per capita, base 1993, pesos		
Aport/ state revenue	-15702	-10181	1949	-0.00	-0.05***	-0.03	8089***	5930***	5646***
Particip/ state revenue	-67452**	-50787*	144994	0.13***	0.27***	0.18***	-7851.62***	-4463***	-7585***
Taxes/state revenue (D)	49283	-10725	-81800	-0.71***	-0.86***	-0.86***	93920.21***	99015***	35244**
Debt/state revenue	19819	9687	115822	-0.26***	-0.32***	-0.28***	-35554.07***	-36531***	-19271***
Spending/ GDP		39956	359272		0.28***	0.05		11860***	-23262***
Infant mortality (D)			2378			0.01***			665***
Consumption per capita (lag -1) (D)	-0.23	-0.13	-0.10						
Social marg. (lag -1)(D)				0.39***	0.38**	0.39***			
Real GDP per capita (lag -1)							0.13***	0.12***	0.09***
Instruments	Munic	Munic	Munic	Munic	Munic	Munic	Munic	Munic	Munic.
	Powers	Powers	Powers	Powers	Powers	Powers	Powers	Powers	Powers
	Credit	Credit	Credit	Credit	Credit	Credit	Credit	Credit	Credit
			School			School			School
J-statistic	7.90	7.34	1.89	26.33	21.12	18.90	29.02	30.80	27.65
N	31	31	30	32	32	32	32	32	32
T	4	4	3	7	7	6	6	6	5
Observations	124	124	90	224	224	192	192	192	160

Note: D denotes variable was first-differenced. All models estimated with GMM.

The first observation on the results is that the variables in consumption regressions are highly insignificant, whereas in the marginalisation and GDP per capita regressions their significance rises substantially. The problems of the consumption data as described above may explain why most variables seem insignificant: if the dependent variable is misleading, it is understandable that correlations are scarce, possibly even purely by chance. Therefore, I rely primarily on the marginalisation and GDP per capita models.

The main variables of interest in these regressions are *aportaciones* and *participaciones*, as the argument is that federal funding causes poverty. There is evidence of such a tendency, but surprisingly, *participaciones* are the variable that most displays this tendency, with all of the marginalisation and GDP per capita models giving it significance, and every one of them suggesting that *participaciones* and poverty have a positive correlation. This is a result that was expected for *aportaciones,* and Key's hypothesis suggests that the same result is valid for all federal funding. Both types of federal funding discourage economic development here. In fact, *participaciones* has a much larger (roughly threefold) impact in terms of magnitude, compared to *aportaciones*.

The conclusion that both types of federal funding lead to high marginalisation and low GDP per capita confirms the second half of the circle, and shows that it is likely that federal funding perpetuates poverty. Here, there is some evidence that high *aportaciones* reduces marginalisation and increases GDP per capita, both of which indicate an increase in economic well-being. This is likely due to the spending restrictions on *aportaciones* per capita, as they must be spent on particular services and social infrastructure, with the aim of reducing poverty. It appears that *aportaciones* are helping reduce poverty, and it has been a successful policy in this regard.

However, it is equally evident that *participaciones*, found in Chapter 5 to be politically determined, does not work efficiently as a poverty alleviation mechanism. In these results, *participaciones* appear to be a factor contributing to poverty: a positive correlation with marginalisation, and a negative correlation with consumption and GDP per capita. In other words, a state dependent on *participaciones* is more likely to suffer from poverty.

Why might *participaciones* cause poverty? The reason for this may be in the political distribution of funding: a PAN presidency (2000-2012) awarding more funding to states controlled by right-wing PAN, which generally are wealthy states, with the poorest governed by PRD and PRI. Therefore, a politically motivated distribution tactic would give the funding to the states that are already wealthy.

However, it is a more likely mechanism that *participaciones* are simply not spent on poverty reduction, and therefore cause the implementation of projects that do not reduce poverty. The lack of rules in the spending of *participaciones* does not encourage the provision of basic

services with *participaciones*, but rather, *participaciones* is likely to be spent on projects that improve the chances of re-election, as per Downs' (1957) vote maximisation theory. The benefits of the spending rules for *aportaciones* for poverty alleviation are clearly shown by these calculations: only the funding with poverty-reduction earmarks will be spent on poverty reduction.

A few states stand out in the receipt of *participaciones* per capita, which highlights an important final issue in the distribution of federal funding. Especially Tabasco appears a disproportionate recipient of *participaciones* per capita, which are roughly double that of any other state in every year since 1998. Courchene and Díaz-Cayeros (in Giugale and Webb, eds., 2000) give as the reason the political constraints of fiscal centralisation in the late 1990s. In order to encourage states to join the revenue-sharing, the federal government made a commitment (*principio resarcitario*, the compensation principle) that all states would receive in federal funding at least the same amount that they were collecting in self-generated income. This shows in Courchene and Díaz-Cayeros' statistics as disproportionate funding to Tabasco and Campeche, which in the 1990s received very high self-generated revenues from oil exploration in their coastal waters.

This "grandfathering" of federal funding is also likely to be present in the present dataset. It again highlights the dilemmas present in centralisation of taxation, and the difficulty of using federal funding as a poverty alleviation tool in centralised fiscal systems like Mexico's. During the centralisation process, guarantees were given to richer states that they would not become net payers on joining the system. Hernández-Trillo et al (2002) point out the importance of the base year as a weakness in the *participaciones* formula. The current version of the LCF (in force from June 2009) directly links receipts to the *participaciones* receipts of 2007, as do the versions from December 2008 and December 2007. The December 2006 version partly distributes the funds based on the two previous years' *participaciones*, but also includes provisions that hark back to states' tax revenues in 1989 (Chapter 1, Article 2). The versions between 1990–2006 give no indication of changes to the formula in relation to the determination of *participaciones*. The versions of the LCF prior to 1990 are not available, but the lack of alterations to Chapter 1, Article 2 in the newer versions suggests that the rule that included reference to 1989 remained similar from the 1980s until 2006.

Participaciones have always been based on prior *participaciones*. However, it is clear that without such provisions, the incentive for wealthy states to participate in the National

System of Fiscal Coordination (SNCF) is limited. These realities also limit the amount of funding that can be distributed as *aportaciones*, as states may protest if amounts geared for discretionary spending fall too much relative to poverty-reduction funds. *Aportaciones*, thus, prove to be a useful tool for distributing federal funds in an equalising manner, but *participaciones* are equally necessary in order to retain the incentives that states have for participating in the SNCF. Therefore, the scope for poverty alleviation through federal funding in a centralised fiscal regime comprised of sovereign states is necessarily limited.

Overall, the results are robust and show the dynamic between *aportaciones* and *participaciones* in the Mexican fiscal system. *Aportaciones* works as a poverty-reduction mechanism, but *participaciones* funding works in the other direction, and with greater magnitude. There is statistical evidence here that poverty causes federal funding (*aportaciones*), and that federal funding (*participaciones*) is a statistically significant cause of poverty.

6.7 Conclusions and final thoughts

The argument posed at the beginning of the chapter was that poverty and federal funding form a vicious circle. This circle is difficult to break with the methods currently in use in the Mexican political economy. The statistical evidence in this chapter shows that the circle assumption is correct.

The interaction between *aportaciones* and *participaciones* as incentive mechanisms becomes the central issue of the Mexican poverty–federal funding mechanism. The national fiscal coordination system (SNCF) tries to redistribute funding to reduce poverty, with the use of *aportaciones*, whose spending is constrained to poverty reduction. *Participaciones* funding, conversely, is distributed to states based on good economic performance, and includes a heavy component of grandfathering. This two-pronged public finance system, however, is generating unforeseen consequences.

The aim of this chapter was to find whether public finance in Mexico contributes to poverty, as per Key's (1937) theory of federal funding dependency. Key cited various consequences of dependency on federal funding, and how these contribute to inadequate economic development. I find that especially heavy dependence on *participaciones* is a factor contributing to poverty, whilst heavy dependence on *aportaciones* helps reduce poverty. I suggest the reason for this is that *aportaciones* (with spending rules) are indeed spent on

poverty reduction, whereas *participaciones* (with no rules) are spent in ways that do not help reduce poverty. Therefore, there is an element of truth to Key's theory in the Mexican context: unconstrained federal funding leads to socially suboptimal outcomes.

Aportaciones are constrained as to how they can be spent. It appears here that the spending of *aportaciones* is effective for poverty reduction, whereas that of *participaciones* is significantly counterproductive for this purpose. If poverty reduction is a priority, and if spending rules help the federal government reduce poverty, then the federal government might be motivated to introduce more rules. However, this is not occurring.

The explanations for these findings that keep arising throughout this chapter are largely institutional and refer to the distribution rules of the different types of funding. The key issues are the grandfathering of federal funding, the linking of poverty-reduction aims to local rather than national averages, and the spending of *participaciones* funding on measures that do not contribute to poverty reduction.

Each of these institutional explanations returns to the same point of origin: the incentives for all states to remain in the National System for Fiscal Coordination. The view in the design of current federal funding was that sovereign states would not participate if they perceive themselves as net payers, in continuously being forced to fund persistently poorer states. Guarantees of certain levels of federal funding, as well as freedom to use it as the state prefers, are accommodations intended to cater to the requirements of wealthy states. However, this practice does not do favours for inter-state equality.

It is not incorrect to state that the current form of federal funding is a cause of continued poverty and inequality between states in Mexico. However, the reason for this cannot necessarily be found in how much is spent, but in how spending is directed. In this section, I have shown empirically that federal funding cannot function solely as an equalising mechanism: in a centralised fiscal regime it cannot afford to disregard the requirements of the wealthier states. Therefore, in its current form, federal funding in Mexico is not helping to reduce poverty.

The hypotheses presented above draw a complex picture of Mexico. The relationship between public finance and state wealth is a result of four basic aspects of Mexican political economy. The political institutions and economic rules form a web of relationships

between actors that is not only multifaceted, but also changeable. In this and the preceding chapters, I have detailed and analysed these basic aspects of Mexican political economy.

The Mexican economic environment has been through major changes in the past two decades. Economic openness increased markedly with a number of formal arrangements, such as NAFTA and other trade agreements. The growth of the *maquila* industry, and government support to achieve this, has been another key development in developing the Mexican economy towards global commerce. The economy has diversified a great deal since 1990, from an oil-dependent economy to a modern structure of services and manufacturing. This has created unprecedented wealth in many areas of Mexico, and improved economic conditions in countless states, municipalities, and localities. The opening of the country to new opportunities has improved the potential of all regions in Mexico. The means of developing economically have grown from a few basic industries to a wide array of possibilities, from tourism to manufacturing and financial services. The formal rules of the Mexican economy now enable greater exports, diversification, borrowing, risk-taking, and collaboration with foreign and multinational enterprise.

However, development has been regionally uneven, between states as well as within states. Development has taken place mainly in the well-established "engines" of development, and there has been little evidence of equalisation in the rates of economic development. The poorer states have improved in terms of school attendance, infant mortality, life expectancy, quality of housing, and other important indicators of well-being. However, no convergence of the growth rates of poor states towards the wealthier states is apparent.

The differences between states and municipalities stem from an immense number of different issues, and in this thesis I have covered many of them. Differences between states arise, fundamentally, from geography and demographics. These factors have influenced the development of local political and economic conditions.

The states' economic choices (from agriculture to manufacturing) have arisen from geographic structure, distance to markets, and the capabilities of the population. I argued in Chapter 3 for Porter's (1990) theory of competitive advantage to explain economic development: factor availability, internal demand, a supply network, and competition were considered the key issues in economic development. These factors are the result of an intricate process involving education, income, population size and many other factors. All

these factors have also contributed to the development of local politics. In addition, political evolution and economic development are parallel and interdependent processes. A number of factors conspire to create each local economic and political environment, and these environments are under constant change and challenge.

In this thesis, I specifically focus on the impact that local political conditions have on the development of economic activity. I combine political science and institutional economics arguments to theorise how politicians act. I began the story by describing the formal political rules, most of which have a long history in Mexico. The sovereignty of states, the no re-election rule, and firm presidentialism were given as examples of political institutions from over a century ago.

I then showed how informal political institutions have changed. The transition to democracy has caused many changes: the increase in the number of political parties, regional and local variability in the degree of political competition, and the new incentives that have thus been created in the Mexican political system. The informal political norms have moved from a complex hegemonic system to another complex, different, pluralist system.

I characterise the hegemony as a complex system of motivations: a web of PRI strategists, policymakers, local leaders and other actors of various degrees of influence. The interaction is based on a range of drivers, both organisational and personal: electoral success or other types of power and popularity, maintaining the hegemony, discouraging dissent, and the personal career considerations of each actor. PRI was far from being a monolithic entity, but its organisation until the early 1990s was highly under the control of the central administration. Dissenting views were tolerated insofar as they were expressed within the framework, which created different PRI factions. The common factor for all interactions was that power was gained by working with the PRI organisation.

However, slowly this network was eroded, both from within and without. PRI's factions and fractionalisation became public. In addition, other parties slowly began gaining influence, still by working with PRI to achieve it (such as the governorship of Baja California in 1989), as well as through political pressure for electoral and other reforms in the 1990s. A tipping point was reached where power could be gained without the collaboration of PRI, and this point is generally where the "transition" is dated. Possible

tipping points are 2000 (PRI losing the presidency) or 1997 (PRI losing the Chamber of Deputies majority). However, it is also possible to date the transition earlier, when the tacit power relations began to change, and PRI began feeling the pressure to make concessions to other parties.

As a result, Mexico currently resides within a multiparty system. A number of decisions that were made by PRI are now made by the electorate. New methods of influencing these decisions abound: political campaigns, focusing public finance on battleground areas, and other types of electoral persuasion. The common factor now is that power is more symmetrical, no single actor is all-powerful, and all actors must take each other into account. The increased presence of several parties at all levels of government make it more difficult to pressure decision-makers through party loyalty. No actor functions as a rubber stamp or simple validator of another's policy. This generates a new set of incentives, where the role of information and predictability grows. Both the formal and informal information networks of PRI have been replaced by networks where more actors and more diverse actors have an active presence.

Thus, Mexico is a society where economic circumstances and political realities have undergone a rapid change in recent decades. However, one factor that has changed little is the tendency for frequent changes in political direction, both in federal and local governments. Fuentes Mares (1982:308) writes on the PRI-era succession of presidents:

> *"In a recurrent cycle, every six years a god dies, and in miraculous metamorphosis, a god is born. The one who dies continues as a man … and from his position in the world, he witnesses the arrival of the new Messiah in Jerusalem, just as he himself had arrived six years earlier."*

If this was a widespread perception in 1982, it is certainly unlikely to be so today, after the "transition to democracy". If the presidency was a godlike position during the PRI hegemony, where the entire machine took orders from the top, this is improbable in a multiparty government. However, the multiparty environment has created even greater policy unpredictability than before, as elections can now swing a state or federal government from one party to another. Therefore, policy continuity in practice remains low, and presidential changeovers every six years work as watersheds in both political and economic matters.

Many of the formal rules of Mexican politics stem from the aftermath of the *porfiriato*, a time when policy continuity was exaggerated through a 32-year presidency in the late 19th

century. Therefore, many of the rules are devoted to ensuring alternation in politics: no re-election and state sovereignty are clear attempts at breaking up power and encourage change. These rules served well in an environment like the PRI hegemony, where presidents, governors and mayors were extremely highly regarded, and temptation was high to honour them with further terms. However, in today's Mexican political environment, any benefit from such "honours" would be undone fast, due to greater availability of information, more open civic discussion, and a greater availability of political contenders.

Is, then, the no re-election rule an unnecessary remnant of the past? Perhaps. The debate surrounding this question in Mexican society has been long and varied, and it is a long-standing political conundrum to consider undoing a major pillar of Mexican politics. The key question is whether Mexico has indeed moved past the era of such a hegemony being possible. The federal elections of 2009 and the local elections of July 2010 show PRI gaining back some of the parliamentary and gubernatorial seats that were lost in preceding years. However, a return to the hegemony would require a reassembly of the machine that governed so many aspects of Mexican life in addition to elections: from employment to family welfare, from trade unions to foreign policy. It is unlikely that in today's well-informed Mexico with diverse political preferences, that this network could be re-assembled.

This conclusion is good news for those who wish to rank Mexico among the world's most developed economies. It is likely that Mexico is slowly joining these ranks. Mexico's economic institutions have undergone extensive alterations in past decades, partly because of international pressures, partly because of a domestic push towards globalisation. Mexico's political institutions, likewise, have developed to resemble most of the world's wealthy multiparty democracies: they are able to organise clean elections, run disciplined campaigns, govern full terms without incident, and implement power handovers appropriately. There is no evidence in this thesis to the contrary, neither at federal nor local level.

Nonetheless, the continuity issue remains. I take the view that Mexico is ready for a reconsideration of the no re-election policy at least at some levels of government, to break an unnecessary tradition in order to provide greater policy stability, as well as greater incentives to govern well. However, such a change must be supplemented with mechanisms

encouraging freedom of information, to ensure eventual alternation of power in a democratic manner.

In this thesis, there is unequivocal evidence that the short-termist views generated in the political ambit are impeding a holistic development trajectory for Mexico. Engine-led development has worked to bring Mexico nearly to high-income status on a global scale. This has been a major achievement. However, further economic, social and political development must encompass a wider range of states, regions and municipalities.

I have outlined a number of problems in the economic development history of Mexico's poorest states, and shown some likely causes. The key issues in this analysis have been fiscal centralisation and political incentives. In Mexico, there are compelling reasons for fiscal centralisation: it provides a mechanism for revenue-sharing and distribution of income to poor states, it removes the competitive element between states, and it is preferred by decision-makers. However, the disadvantages of fiscal centralisation must be addressed, and these mostly relate to incentives for improvement in each state, in a situation where most of state income is pooled for the federal government to distribute.

Basing federal funding amounts on previous amounts guarantees that amounts will not fall, but also means upward changes are slow to appear. Increments in the relevant socioeconomic indicators are rewarded in a linear manner, and improvements in indicators are only rewarded if they are greater than the same increment nationally. This means that whilst a very poor state may find it easier to improve school attendance or social marginalisation more than the improvement in the national average, the wealthier and middle-income states are more likely to struggle in improving these indicators by more than the national increment. The linearity assumption also places states on unequal footing by failing to account for improvement potential, which can be limited (it is far easier for Chiapas to improve a 76% school attendance rate than it is to improve from the 91% in Aguascalientes). This is a problem easily corrected by accounting for the non-linearity of school attendance rates over time.

In a way, such measures contribute to convergence in education and social marginalisation levels. However, convergence also implies that improvement in the wealthiest states is very slow. This is bad news for poor communities in wealthy states, because their local efforts produce very little improvement to the state-level indicators, which effectively means that

federal funding provides no incentive for state-level politicians to initiate improvements. This is likely to lead to a situation where funding is directed to areas where it is likely to be of electoral benefit; for example, specific funding in areas of high political competition, for which I found evidence in Chapter 5.

Limited incentives for improvement in wealthy states mean that poor communities in wealthy states are likely to be under-funded, because the overall increments in those states are small. Similarly, the wealthiest municipalities (e.g. state capitals) in poor states are likely to be relatively over-supported, as they benefit from large increments in the rest of the state.

When funding is assessed at state level, such incongruence is always likely to occur. The current distribution formulae give little flexibility for local conditions, such as municipal size, population density, ethnic fractionalisation, or other factors that may make socioeconomic improvements more challenging. If possible, measures should be taken at municipal level, and not at state level, to incorporate such factors in assessing how much funding each state receives.

There is a clear need not only for better monitoring of public finance and political activity, but also better collection of statistical information. Even now, when information is collected at state level, two thirds of states use the option of simplified measurement made possible by LCF for the assessment of socioeconomic conditions (for the purpose of *aportaciones* distribution). This is likely to produce biased estimates of actual conditions, as each state chooses the most convenient method for itself. Fiscal decentralisation is often supported with the argument that local bodies are better able to adjust themselves to local conditions; however, this argument becomes futile if the statistics are not available to concretise and use the local knowledge for purposes of developing conditions in the municipalities. The keys for socioeconomic development in Mexico today lie in efficient, localised, tailored approaches to the country's diverse circumstances.

7. Conclusions and further research

The uneven development of Mexican states has been documented here as a combination of political history, formal rules and informal practices, as well as of economic realities. The final sections of Chapter 6 show the wider implications of these realities: Mexico's political institutions have been designed for the political realities of the Mexican 20th century, and alterations may be in order. I also argue that special attention should be given to making sure that poor states are given sufficient tools to develop sustainable and productive economic activity.

Here, I provide first a final exposition and summary of the key arguments, and how they relate to the hypotheses set out in Chapter 4. I then crystallise the contribution of this work to the literature. Further, I present some practical and theoretical limitations, and finish by offering possible lines of pertinent future research.

7.1 Conclusions

I began with the premise that federal finance contributes to inequality and poverty in Mexico. Through statistical analysis, I show that federal funding and poverty generally interact in a vicious cycle. I also find that spending rules help direct public funding in ways that can reduce poverty, and that federal funding with no spending rules is correlated with poverty, especially in middle-income states, which impedes convergence.

I theorise that politics is the catalyst that maintains the cycle of poverty, and explore this through quantitative and qualitative analysis of electoral outcomes. The results show a political influence in public finance. However, there is also evidence of a profound change in the Mexican political environment, and that the rules of the game have changed markedly during the "transition to democracy".

The first hypothesis of this thesis is that clientelistic practices and political influences remain in the distribution of public funding in Mexico. I find partial evidence for this in Chapter 5. Public spending is higher where different parties control different levels of government (e.g. state/federal), which indicates that public finance is dependent on political (rather than socioeconomic) conditions. However, the high spending in multiparty set-ups suggests a

"battleground finance" scenario rather than clientelistic behaviour. Also, funding with earmarks was found to generate a lesser degree of political manipulation than funding without earmarks, leading to the conclusion that political motivations in public funding can be reduced through the use of appropriate earmarks. However, no evidence was found for differences in spending between parties, and the statistical results do not give clear conclusions as to whether transparency is greater at federal or local level.

The second hypothesis states there is a vicious cycle between federal funding and poverty. On empirical testing in Chapter 6, I found that poverty is a key determinant of federal funding, and federal funding is a key statistical determinant of poverty and GDP per capita. This confirms the hypothesis of a circle between federal funding and state wealth. A distinction arose between earmarked (*aportaciones*) and discretionary funding (*participaciones*): the former is a consequence of poverty, whilst the latter is a significant determinant of state wealth. Therefore, it is clear that the socio-economic impact of these two types of funding is different.

The third hypothesis posits that the Mexican political system contributes to maintaining the vicious circle of poverty and federal finance in poor states. I show that states have both the incentives and the resources to influence their income structures. Having two types of public funding causes states to "profile" themselves: politicians in wealthy states induce economic activity, whereas in poor states, policymakers are likely to focus on less productive activities. Finally, I conclude that it is possible to break the circle of poverty, but that this requires a new approach to the evolution of political institutions, as well as to economic development.

I also provide two key recommendations. The first is a reconsideration of the re-election ban to lengthen the time horizons of decision-makers, and therefore generate greater incentives for implementing long-term poverty reduction and other socially optimal policies. The second refers to public finance rules, and especially the practice of basing federal funding amounts on previous amounts ("grandfathering"). I suggest that the federal funding distribution rules include a number of provisions that distort states' and municipalities' incentives for encouraging and inducing local economic development. I also encourage the legislators to consider a municipal-level approach to distributing federal funding, rather than distributing funding at state level.

Through an analysis of the incentives of politicians, I show that economic development suffers greater barriers in the poor states than it does in the wealthy states. I show that these barriers are informal, related to the incentives of politicians, and also upheld by inflexible structures in the formal political environment. Therefore, despite substantial improvements in the Mexican political economy, politics continues to be a *de facto* contributing factor to poverty.

7.2 Contributions

The contributions of this work lie in the connection it forms between the political environment and economic realities. I give an analysis of the political system supported by economic ideas, and an analysis of Mexican public finance structures from the viewpoint of political incentives. I believe these intertwined issues are the key to continued improvement in Mexico.

This work is also entering a new period in Mexican studies by placing the country at the beginning of a new political era: following the hegemony and transition, Mexico is entering the post-transition era. Mexico now aims for recognition as a developed economy and well-performing polity, where country comparisons are made with other OECD members, rather than with developing countries. The challenges to this are immense: poverty is one of the greatest, but by no means the only trial Mexico faces. This thesis has pinpointed the informal political environment as an issue that continues to require attention from both policymakers and researchers; however, immense recent improvement in Mexican politics cannot be disputed.

7.3 Limitations

There are two types of limitations to this work. The first is a practical kind. In this thesis I have tackled this limitation to some degree, but the analysis has been curtailed by both data availability and time. The second type of limitation is in questions that have emerged during the process of writing this thesis, and whilst they were perhaps not obvious questions some years ago, they certainly are now.

The key limitation of this research has been the poor availability of data at municipal level. Especially the collection of political data from 2,439 municipalities was not a feasible undertaking for this project, and there are also limitations to the availability of socio-economic time-series data. Thus, there is clear potential for a similar study at municipal level.

The greatest benefit of such a study would be that it would enable a finer isolation of municipalities based on local conditions, rather than relying on state averages. This would still have the limitation of inequalities within municipalities; however, it has the potential to provide a great deal more insight into the impact of local politics on public finance than does a state-level study. In this way, a municipal study could help unveil the mechanisms at municipal level, and these could be compared to the state- and federal-level results obtained in this thesis. This would enhance also the conclusions that could be drawn vis-à-vis geographical, topographical, ethnic, and other types of particular influences on public finance usage and economic growth that are often more salient at municipal rather than state level.

There is also scope for greater detail in the analysis of public finance data. Especially spending data would be of use in understanding the characteristics of possible overspending. However, the most widely available state spending data is categorised in ways that make meaningful analysis difficult. Therefore, in the easily accessible data there is little scope, and tackling this question would perhaps require more qualitative analysis to supplement the statistical work. The influence of politics on state spending patterns would nonetheless be a fascinating topic for future research.

7.4 Future research

Finally, I suggest some topical issues which, based on this thesis, require more research. The first is the role of PRI in the post-transition society. In recent elections in 2009 and 2010, PRI has regained some of the ground lost since 1997, at all levels of government. However, the question is one of determining the "steady state" of Mexican democracy, or the extent of democratic consolidation. Is democracy now present by default, or will the 1990s and 2000s be seen as a brief democratic experiment between hegemonies? This is a question for all walks of Mexican life: from policymakers to voters, for both small businesses and large corporations, and for government institutions, non-governmental organisations

and private entities alike. All these contributed to PRI hegemony in the 20th century, and in the future it is a joint decision by all of Mexican society whether such a situation can be permitted again.

The second consideration is a very topical one in Mexico, and has an unlikely connection to the past role of PRI in society. In some areas of Mexico, there is reasonable concern that drug cartels and traffickers have penetrated the ranks of public officials, from police to local political organisations, and it is alleged that cartels hold de *facto* political and economic control of some municipalities. The most salient indicator of this development has been the number of drug-related violent deaths. The problem has been present in the state of Sinaloa for many decades, but it has become significantly more widespread geographically since early 2007, with the typical estimate exceeding 20,000 casualties to date.

Thus, there is a possibility that a new set of informal political norms is entering the Mexican political consciousness, and with a strategy very similar to PRI's original appearance. The combination of peaceful politico-economic incentives and violent coercion is not a new invention in Mexican society: many political groups successfully used comparable strategies in the aftermath of the Mexican Revolution. If the cartels are playing an active role in society, it changes not only political incentives, but also the priorities of the federal and state governments, as defence grows in importance. Economic solutions are being sought as an antidote to drug violence, which highlights the importance of addressing poverty in the right localities. However, the situation is fragile and will likely require long-term attention. Drug trafficking and its socio-political and economic implications are likely to be a key issue in Mexican politics and public finance in the years to come.

8. References

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Appendix 1. Methodological considerations

A sizeable proportion of the analysis in this thesis relies on quantitative techniques. The hypotheses underpinned in Chapters 2 and 3 and laid out in Chapter 4 are tested empirically in Chapters 5 and 6.

Quantitative analysis has become the norm in economic research, and is increasing in popularity in political science research also. The increasing availability of data and computational power has contributed to this development. The use of quantitative methods in this study follows convention and makes it more easily comparable to similar studies done on public finance and economic growth in the past.

Statistical data collection in Mexico is frequently of high quality, but especially state-level data can be scarce, and international researchers tend to rely on national-level data, typically for cross-country studies. Therefore, this thesis offers a contribution to the emerging body of applied econometric literature on public finance and politics on a sub-national level in Mexico. This is mainly done here by including new types of political variables, such as the effective number of parties, and using them in conjunction with common socio-economic variables, such as GDP and infant mortality.

National data is useful because it enables the inclusion of certain variables that are not currently being collected and aggregated at state level. However, state-level calculations not only provide more powerful calculations (as detailed below), but also enable the examination of specific differences between states. Such differences in historical, social, economic, geographical, political and other terms are a well-known and commonly admitted issue among observers of Mexican economic issues and politics. Therefore, this empirical sub-national study contributes to testing these observations.

The quantitative method is supplemented with qualitative analysis, as well as with unstructured interviews in Mexico City in 2008 for additional clarifications and insights. These were carried out with academics in various Mexico City universities, and the informants were chosen based on their publication record and research interests.

Rationale for using panel data methods

Panel data is a type of data where the same cross-sectional units (here, Mexican states) are followed over time (here, annually). It is now the most common method for empirical testing on economic issues, due to its versatility and flexibility.

Baltagi (2001:6-7) gives the following as the major benefits of using panel data:

- [a benefit of panel data is that it allows for] "[c]*ontrolling for individual heterogeneity*". In the Mexican context this is important, as I argue that there are significant differences between states that explain the economic outcomes.
- "…[m]*ore informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency.*" In a situation such as this study where the time series is short, the degrees of freedom afforded by panel data are paramount. Along with the first point on cross-sectional heterogeneity, this point is the most important reason in this study for using panel data, as the study suffers from the typical problem of a relatively short available time series. Expanding the dataset within Mexico eliminates the need to include other countries, permitting this analysis to make assumptions and generalisations about local conditions. Chapter 2 outlines these conditions, as well as highlighting where such generalisations are not appropriate.
- *"Panel data are better able to study the dynamics of adjustment."* The presence of both the time-series and cross-sectional dimension enables an examination of the Mexican "transition to democracy" and the development of political competition, with regard to the different speeds of adjustment in different states. (See also Finkel, 1995.)
- *"Panel data are better able to identify and measure effects that are simply not detectable in pure cross-section or pure time-series data."* Panel data enables the observation of effects from historical events, such as the increase in political competition.
- *"Panel data models allow us to construct and test more complicated behavioural models than purely cross-section or time-series data."* Panel data enables the inclusion of time-specific dummy variables to study changes over time (also Baltagi and Griffin, 1988). In this study, limited use has been made of this property, due to the short length and timing of the data. The data used in the calculations in this thesis is primarily from the year 2000 onwards, which means that few radical societal changes are likely to

have taken place over the duration of this data. Hence, the decision was made not to use time dummies.

- Finkel (1995) adds a further benefit: that the use of panel data also enables the use of earlier data points to estimate later ones, which improves the study of causality between the variables. A common use is including lagged dependent variables in the model, widely employed here in order to include the effect of variables with a degree of constancy, such as public finance levels or GDP per capita.

Thus, this study is able to harness a number of the main benefits of panel data, and therefore panel data can be considered to be the appropriate method for this research.

The key limitations of panel data are listed as follows (Baltagi, 2001:7-8):

- *"Design and data collection problems."* This is clearly a problem present particularly in historical data collection and especially in developing countries, where extensive and systematic data collection for a wide range of variables may be absent or, as in the case of Mexico, may have begun relatively recently. In Mexico, despite good-quality national data, the main challenge is the collection of subnational data. In this study, the data used is mostly at state level, where the variety of available indicators is far narrower. However, no key indicators had to be excluded from the calculations because of poor data availability. For some indicators, proxy variables were used.

- *"Distortions or measurement errors."* Most of the data used in this thesis was obtained directly from the relevant institutions, such as INEGI and CONAPO. The data that was collected by an independent research assistant went through a partial verification and comparison with those parts of the data that were more widely available from trusted sources, and the verification gave no reason to suspect irregularities or inaccuracies.

- *"Selectivity problems: self-selectivity or nonresponse."* The pattern of responses and nonresponses in the data gives no reason to believe a consistent, relevant pattern in the availability of data. The missing data points were neither exclusively from particular types of states, nor from particular time periods or from states controlled by a particular type of political arrangement or party. Therefore, the data can be reasonably treated as not having a substantial selection bias.

- *"Short time-series dimension."* This is a frequent problem in both subnational and developing-country research, and is also a problem in this study. However, the fact that the time series is short has been taken into account in all possible ways, including but not limited to the calculations of the J statistic and its significance levels in the Generalised Method of Moments calculations.

The two methods used for this study are Ordinary Least Squares (OLS) and Generalised Method of Moments (GMM). Both are regression-based methods, which is the dominant method in the field. GMM, however, has become more prevalent.

Rationale for use of GMM estimation

The OLS models specified in this thesis have all been controlled for autocorrelation using the Cochrane-Orcutt method, which is appropriate where autocorrelation is expected to be low or nonexistent. This is the case in many of the estimations in Chapter 5. However, for estimations where autocorrelation is known to be present, the best modern method of correcting for autocorrelation is Generalised Method of Moments (GMM), which was used in both Chapter 5 and Chapter 6.

A GMM model is estimated similarly to a standard regression model (denoted here as in Baltagi, 2001:11):

$$y_{it} = \alpha + X'_{it}\beta + u_{it}$$

where $i = 1, \ldots, N; t = 1, \ldots, T$.

GMM is based on the Method of Moments estimation by Karl Pearson in the 1890s. This technique was a response to the poor ability of the methods of that era to account for non-normal distributions, with a mean and variance that were different from the normal. Later, the Minimum Chi-Square method provided the concept of the Chi-Squared distribution that is used in GMM to date, as well as the notion of hypothesis testing as it is known today. The third contribution that became a basic tenet of GMM estimation was instrumental variable (IV) estimation, which was developed specifically for the analysis of economic systems. (Hall, 2005) These advances in statistical methods enabled the eventual

development of GMM, which is to date the most accurate method for estimating models that cannot be adequately estimated with OLS or other older methods. Three specific issues that render OLS inadequate are autocorrelation, endogeneity, and the dynamic nature of these panels.

Autocorrelation is a phenomenon whereby the error terms are dependent on each other. In other words, a model has autocorrelation if the data (e.g. consecutive data points) is correlated with itself. This is problematic, because the predictability of error terms reduces the estimated standard errors and can therefore lead to alpha errors in hypothesis testing (rejecting a true hypothesis).

Endogeneity is another typical problem in OLS models, and is remedied by the use of GMM. Endogeneity occurs when one or more independent variables have a significant correlation with the dependent variable. This is problematic, as it violates the assumption of an independent error term and thus causes bias in the estimated coefficients. This is especially problematic in the case of a large N (number of cross-sections) and a small T (time periods) (Harris and Mátyás, 2004), which is the case for this study.

Endogeneity is particularly a concern in models where there is known circularity, as with the models presented in Chapter 6 where federal funding and poverty cause each other. Thus there is reasonable cause to believe that two variables function as determinants of each other, and therefore an understanding of the causalities is required to test both hypotheses. GMM, through the use of instrumental variables, provides such a facility. Therefore, all models in Chapter 6 have been estimated with GMM only, because GMM (unlike OLS) accounts for the suspected endogeneity.

Finally, in a dynamic panel, it is essential to estimate the effect of the passage of time. This is done in GMM, as well as in the IV method, through the addition of a lagged value of y_{it} as an independent variable. This strategy uses the likely correlation between y_{it} and the error term to generate additional instruments, which enables greater accuracy and reduces the need for exogenous instruments. Arellano and Bond (1991) report lagged values of the dependent variable as a useful tool for countering autocorrelation, but warn that the appropriate specification test must be used for assessing the validity of the instruments. In this thesis, the specification test used is the overidentifying restrictions test, also known as

the J statistic (Hall, 2005:143), and this test indicates that all specifications whose results are reported in this thesis are appropriate at the 95% level of confidence.

Finally, a note on the alternatives: GMM is not the only method to provide a remedy to these problems. Through a set of Monte Carlo experiments, Harris and Mátyás (2004) test 17 different estimation methods, concluding that in a situation where the dependent variable is expected to be heavily autocorrelated (i.e. y_{it} highly related to $y_{i,t-1}$), even OLS can yield acceptable results if the appropriate measures are taken to eliminate autocorrelation. However, Harris and Mátyás (2004) offer GMM as a method with the best performance, even in situations with very low T. This is in line with the result reached earlier by Arellano and Bond (1991), who also found GMM to be the best available method among the many they tested. A number of other writers make a similar argument (Arellano and Bover, 1995; Blundell and Bond, 1998; and references therein).

Therefore, GMM has been found by a number of studies to be among the best methods for estimating dynamic panel data models. On these grounds, I rely primarily on GMM estimates for the conclusions in this thesis, but in Chapter 5 where there is no obvious circularity, the models are supplemented also with the simpler OLS calculation to obtain a second estimation for robustness.

Coverage of data

Depending on the method and list of variables included, the data used in this study permits a minimum of 5 and a maximum of 17 years to be used in the analysis. The vast majority of the regressions include all 32 states, and all include at least 30 states.

Preparation of data

All variables measuring raw amounts of money (including GDP per capita, federal funding per capita and public spending per capita) have been deflated with the general GDP deflator for Mexico (from World Development Indicators 2008). The base year of the deflation in each variable is the first year of available data, and varies between variables.

In all the empirical testing (Chapters 5 and 6), all panel variables have been subjected to unit root tests (Levin, Lin and Chu's tau test), and if evidence of unit roots was found, the

variable was first-differenced for the OLS calculations. This eliminated the vast majority of autocorrelation, as evidenced by the Durbin-Watson (DW) statistics reported in the output tables. In the models used with GMM, all variables underwent a first-difference transformation.